

JPMORGAN CHASE & CO  
 Form 10-K  
 February 28, 2013

UNITED STATES  
 SECURITIES AND EXCHANGE COMMISSION  
 WASHINGTON, D.C. 20549  
 FORM 10-K

Annual report pursuant to Section 13 or 15(d) of  
 The Securities Exchange Act of 1934

For the fiscal year ended  
 December 31, 2012

Commission file  
 number 1-5805

JPMorgan Chase & Co.  
 (Exact name of registrant as specified in its charter)  
 Delaware  
 (State or other jurisdiction of  
 incorporation or organization)

13-2624428  
 (I.R.S. employer  
 identification no.)

270 Park Avenue, New York, New York  
 (Address of principal executive offices)

10017  
 (Zip code)

Registrant's telephone number, including area code: (212) 270-6000  
 Securities registered pursuant to Section 12(b) of the Act:

Title of each class	Name of each exchange on which registered
Common stock	The New York Stock Exchange The London Stock Exchange The Tokyo Stock Exchange
Warrants, each to purchase one share of Common Stock	The New York Stock Exchange
Depository Shares, each representing a one-four hundredth interest in a share of 8.625% Non-Cumulative Preferred Stock, Series J	The New York Stock Exchange
Depository Shares, each representing a one-four hundredth interest in a share of 5.50% Non-Cumulative Preferred Stock, Series O	The New York Stock Exchange
Guarantee of 7.00% Capital Securities, Series J, of J.P. Morgan Chase Capital X	The New York Stock Exchange
Guarantee of 5.875% Capital Securities, Series K, of J.P. Morgan Chase Capital XI	The New York Stock Exchange
Guarantee of 6.25% Capital Securities, Series L, of J.P. Morgan Chase Capital XII	The New York Stock Exchange
Guarantee of 6.20% Capital Securities, Series N, of JPMorgan Chase Capital XIV	The New York Stock Exchange
Guarantee of 6.35% Capital Securities, Series P, of JPMorgan Chase Capital XVI	The New York Stock Exchange
Guarantee of 6.625% Capital Securities, Series S, of JPMorgan Chase Capital XIX	The New York Stock Exchange
Guarantee of 6.875% Capital Securities, Series X, of JPMorgan Chase Capital XXIV	The New York Stock Exchange
Guarantee of 6.70% Capital Securities, Series CC, of JPMorgan Chase Capital XXIX	The New York Stock Exchange
Guarantee of 7.20% Preferred Securities of BANK ONE Capital VI	The New York Stock Exchange The New York Stock Exchange

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KEYnotes Exchange Traded Notes Linked to the First Trust Enhanced 130/30  
Large Cap Index

Alerian MLP Index ETNs due May 24, 2024

NYSE Arca, Inc.

JPMorgan Double Short US 10 Year Treasury Futures ETNs due  
September 30, 2025

NYSE Arca, Inc.

JPMorgan Double Short US Long Bond Treasury Futures ETNs due  
September 30, 2025

NYSE Arca, Inc.

Securities registered pursuant to Section 12(g) of the Act: None

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act.

Yes  No

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act.  Yes  No

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days.  Yes  No

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Website, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (§ 232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files).  Yes  No

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K (§229.405 of this chapter) is not contained herein, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K.  o

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See definitions of "large accelerated filer," "accelerated filer," and "smaller reporting company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer     Accelerated filer     Non-accelerated filer     Smaller reporting company  
(Do not check if a smaller reporting company)

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act).  o  
Yes  No

The aggregate market value of JPMorgan Chase & Co. common stock held by non-affiliates as of June 30, 2012:  
\$134,979,087,091

Number of shares of common stock outstanding as of January 31, 2013: 3,827,466,945

Documents incorporated by reference: Portions of the registrant's Proxy Statement for the annual meeting of stockholders to be held on May 21, 2013, are incorporated by reference in this Form 10-K in response to Items 10, 11, 12, 13 and 14 of Part III.

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Part I

ITEM 1: BUSINESS

Overview

JPMorgan Chase & Co. (“JPMorgan Chase” or the “Firm”), a financial holding company incorporated under Delaware law in 1968, is a leading global financial services firm and one of the largest banking institutions in the United States of America (“U.S.” or “United States”), with operations worldwide; the Firm had \$2.4 trillion in assets and \$204.1 billion in stockholders’ equity as of December 31, 2012. The Firm is a leader in investment banking, financial services for consumers and small businesses, commercial banking, financial transaction processing, asset management and private equity. Under the J.P. Morgan and Chase brands, the Firm serves millions of customers in the U.S. and many of the world’s most prominent corporate, institutional and government clients.

JPMorgan Chase’s principal bank subsidiaries are JPMorgan Chase Bank, National Association (“JPMorgan Chase Bank, N.A.”), a national bank with U.S. branches in 23 states, and Chase Bank USA, National Association (“Chase Bank USA, N.A.”), a national bank that is the Firm’s credit card-issuing bank. JPMorgan Chase’s principal nonbank subsidiary is J.P. Morgan Securities LLC (“JPMorgan Securities”), the Firm’s U.S. investment banking firm. The bank and nonbank subsidiaries of JPMorgan Chase operate nationally as well as through overseas branches and subsidiaries, representative offices and subsidiary foreign banks. One of the Firm’s principal operating subsidiaries in the United Kingdom (“U.K.”) is J.P. Morgan Securities plc (formerly J.P. Morgan Securities Ltd.), a wholly-owned subsidiary of JPMorgan Chase Bank, N.A.

The Firm’s website is [www.jpmorganchase.com](http://www.jpmorganchase.com). JPMorgan Chase makes available free of charge, through its website, annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, and any amendments to those reports filed or furnished pursuant to Section 13(a) or Section 15(d) of the Securities Exchange Act of 1934, as soon as reasonably practicable after it electronically files such material with, or furnishes such material to, the U.S. Securities and Exchange Commission (the “SEC”). The Firm has adopted, and posted on its website, a Code of Ethics for its Chairman and Chief Executive Officer, Chief Financial Officer, Chief Accounting Officer and other senior financial officers.

Business segments

JPMorgan Chase’s activities are organized, for management reporting purposes, into four major reportable business segments, as well as a Corporate/Private Equity segment. The Firm’s consumer business is the Consumer & Community Banking segment. The Corporate & Investment Bank, Commercial Banking, and Asset Management segments comprise the Firm’s wholesale businesses.

A description of the Firm’s business segments and the products and services they provide to their respective client bases is provided in the “Business segment results” section of Management’s discussion and analysis of financial condition and results of operations (“MD&A”), beginning on page 64 and in Note 33 on pages 326–329.

Competition

JPMorgan Chase and its subsidiaries and affiliates operate in a highly competitive environment. Competitors include other banks, brokerage firms, investment banking companies, merchant banks, hedge funds, commodity trading companies, private equity firms, insurance companies, mutual fund companies, credit card companies, mortgage banking companies, trust companies, securities processing companies, automobile financing companies, leasing companies, e-commerce and other Internet-based companies, and a variety of other financial services and advisory companies. JPMorgan Chase’s businesses generally compete on the basis of the quality and range of their products and services, transaction execution, innovation and price. Competition also varies based on the types of clients, customers, industries and geographies served. With respect to some of its geographies and products, JPMorgan Chase competes globally; with respect to others, the Firm competes on a regional basis. The Firm’s ability to compete also depends on its ability to attract and retain its professional and other personnel, and on its reputation.

The financial services industry has experienced consolidation and convergence in recent years, as financial institutions involved in a broad range of financial products and services have merged and, in some cases, failed. This convergence trend is expected to continue. Consolidation could result in competitors of JPMorgan Chase gaining greater capital and other resources, such as a broader range of products and services and geographic diversity. It is likely that

competition will become even more intense as companies continue to expand their operations globally and as the Firm's businesses continue to compete with other financial institutions that are or may become larger or better capitalized, that may have a stronger local presence in certain geographies or that operate under different rules and regulatory regimes than the Firm.

Supervision and regulation

The Firm is subject to regulation under state and federal laws in the United States, as well as the applicable laws of each of the various jurisdictions outside the United States in which the Firm does business.

Regulatory reform: On July 21, 2010, President Obama signed into law the Dodd-Frank Wall Street Reform and Consumer Protection Act (the "Dodd-Frank Act"), which is intended to make significant structural reforms to the financial services industry. The Dodd-Frank Act instructs U.S. federal banking and other regulatory agencies to conduct approximately 285 rule-makings and 130 studies and reports. These regulatory agencies include the Commodity Futures Trading Commission (the "CFTC"); the

## Part I

Securities and Exchange Commission (the “SEC”); the Board of Governors of the Federal Reserve System (the “Federal Reserve”); the Office of the Comptroller of the Currency (the “OCC”); the Federal Deposit Insurance Corporation (the “FDIC”); the Bureau of Consumer Financial Protection (the “CFPB”); and the Financial Stability Oversight Council (the “FSOC”). As a result of the Dodd-Frank Act rule-making and other regulatory reforms, the Firm is currently experiencing a period of unprecedented change in regulation and such changes could have a significant impact on how the Firm conducts business. The Firm continues to work diligently in assessing and understanding the implications of the regulatory changes it is facing, and is devoting substantial resources to implementing all the new regulations, while, at the same time, best meeting the needs and expectations of its clients. Given the current status of the regulatory developments, the Firm cannot currently quantify the possible effects on its business and operations of all of the significant changes that are currently underway. For more information, see “Risk Factors” on pages 8–21. Certain of these changes include the following:

**Comprehensive Capital Analysis and Review (“CCAR”) and stress testing.** In December 2011, the Federal Reserve issued final rules regarding the submission of capital plans by bank holding companies with total assets of \$50 billion or more. Pursuant to these rules, the Federal Reserve requires the Firm to submit a capital plan on an annual basis. In October 2012, the Federal Reserve and OCC issued rules requiring the Firm and certain of its bank subsidiaries to perform stress tests under one stress scenario created by the Firm as well as three scenarios (baseline, adverse and severely adverse) mandated by the Federal Reserve. If the Federal Reserve objects to the Firm’s capital plan, the Firm will be unable to make any capital distributions unless approved by the Federal Reserve. For more information, see “CCAR and stress testing” on pages 5–6.

**Resolution plan.** In September 2011, the FDIC and the Federal Reserve issued, pursuant to the Dodd-Frank Act, a final rule that requires bank holding companies with assets of \$50 billion or more and companies designated as systemically important by the FSOC to submit periodically to the Federal Reserve and the FDIC a plan for resolution under the Bankruptcy Code in the event of material distress or failure (a “resolution plan”). In January 2012, the FDIC also issued a final rule that requires insured depository institutions with assets of \$50 billion or more to submit periodically to the FDIC a plan for resolution under the Federal Deposit Insurance Act in the event of failure. The timing of initial, annual and interim resolution plan submissions under both rules is the same. The Firm’s initial resolution plan submissions were filed by July 1, 2012, and annual updates will be due by July 1 each year.

**Derivatives.** Under the Dodd-Frank Act, the Firm will be subject to comprehensive regulation of its derivatives business (including capital and margin requirements, central clearing of standardized over-the-counter derivatives and the requirement that they be traded on regulated trading platforms) and heightened supervision. Further, some of the rules for derivatives will apply extraterritorially to U.S. firms doing business with clients outside of the United States. The Dodd-Frank Act also requires banking entities, such as JPMorgan Chase, to significantly restructure their derivatives businesses, including changing the legal entities through which derivatives activities are conducted.

**Volcker Rule.** The Firm will also be affected by the requirements of Section 619 of the Dodd-Frank Act, and specifically the provisions prohibiting proprietary trading and restricting the activities involving private equity and hedge funds (the “Volcker Rule”). On October 11, 2011, regulators proposed regulations to implement the Volcker Rule. These are currently expected to be finalized in 2013. Under the proposed rules, “proprietary trading” is defined as the trading of securities, derivatives, or futures (or options on any of the foregoing) as principal, where such trading is principally for the purpose of short-term resale, benefiting from actual or expected short-term price movements and realizing short-term arbitrage profits. The proposed rule’s definition of proprietary trading specifically excludes market-making-related activity, certain government issued securities trading and certain risk management activities. The Firm ceased some prohibited proprietary trading activities during 2010 and has since exited substantially all such activities.

**Money Market Fund Reform.** In November 2012, the FSOC and the Financial Stability Board (the “FSB”) issued separate proposals regarding money market fund reform. Pursuant to Section 120 of the Dodd-Frank Act, the FSOC published proposed recommendations that the SEC proceed with structural reforms of money market funds, including, among other possibilities, requiring that money market funds adopt a floating net asset value, mandating a capital buffer and requiring a hold-back on redemptions for certain shareholders. On January 15, 2013, the FSOC announced

that it had extended the comment period for the proposed recommendations at the request of the Chairman of the SEC. It is expected that the SEC will issue its own rule proposal on money market fund reform in the near future. The FSB endorsed and published for public consultation 15 policy recommendations proposed by the International Organization of Securities Commissions (“IOSCO”), including requiring money market funds to adopt a floating net asset value. The FSB has stated that it expects to publish final recommendations in September 2013 and, thereafter, work on procedures for the



consistent implementation of the policy recommendations.

Capital. The treatment of trust preferred securities as Tier 1 capital for regulatory capital purposes will be phased out over a three year period, beginning in 2013. In addition, in June 2011, the Basel Committee and the FSB announced that certain global systemically important banks (“GSIBs”) would be required to maintain additional capital, above the Basel III Tier 1 common equity minimum, in amounts ranging from 1% to 2.5%, depending upon the bank’s systemic importance. In June 2012, the Federal Reserve, the OCC and FDIC issued final rules for implementing ratings alternatives for the computation of risk-based capital for market risk exposures, which will result in significantly higher capital requirements for many securitization exposures. For more information, see “Capital requirements” on pages 4–5.

FDIC Deposit Insurance Fund Assessments. In February 2011, the FDIC issued a final rule changing the assessment base and the method for calculating the deposit insurance assessment rate. These changes became effective on April 1, 2011, and resulted in a substantial increase in the assessments that the Firm’s bank subsidiaries pay annually to the FDIC. For example, in 2011, these changes resulted in an increase of approximately \$600 million in assessments. For more information, see “Deposit insurance” on page 6.

Bureau of Consumer Financial Protection. The Dodd-Frank Act established the CFPB as a new regulatory agency. The CFPB has authority to regulate providers of credit, payment and other consumer financial products and services. The CFPB has examination authority over large banks, such as JPMorgan Chase Bank, N.A. and Chase Bank USA, N.A., with respect to the banks’ consumer financial products and services. The CFPB issued final regulations regarding mortgages, which will become effective in January 2014. For more information, see “CFPB regulations regarding mortgages” on page 7 and “Other supervision and regulation” on pages 7–8.

Heightened prudential standards for systemically important financial institutions. The Dodd-Frank Act creates a structure to regulate systemically important financial companies, and subjects them to heightened prudential standards. For more information, see “Systemically important financial institutions” below.

Debit interchange. On October 1, 2011, the Federal Reserve adopted final rules implementing the “Durbin Amendment” provisions of the Dodd-Frank Act, which limit the amount the Firm can charge for each debit card transaction it processes.

Other proposals have been made internationally, including additional capital and liquidity requirements that will apply to non-U.S. subsidiaries of JPMorgan Chase, such as J.P.

Morgan Securities plc. For further information, see “Risk Factors” on pages 8–21.

Systemically important financial institutions: The Dodd-Frank Act creates a structure to regulate systemically important financial institutions, and subjects them to heightened prudential standards, including heightened capital, leverage, liquidity, risk management, resolution plan, single-counterparty credit limits, and early remediation requirements. Systemically important financial institutions will be supervised by the Federal Reserve. Bank holding companies with over \$50 billion in assets, including JPMorgan Chase, and certain nonbank financial companies that are designated by the FSOC, will be considered systemically important financial institutions subject to the heightened standards and supervision.

In addition, if the regulators determine that the size or scope of activities of the company pose a threat to the safety and soundness of the company or the financial stability of the United States, the regulators have the power to require such companies to sell or transfer assets and terminate activities.

On December 20, 2011, the Federal Reserve issued proposed rules to implement certain of these heightened prudential standards, including:

Risk management standards. The proposal would require oversight of enterprise-wide risk management by a stand-alone risk committee of the board of directors and a chief risk officer. Among other things, the risk committee of the board of directors of a bank holding company would be required to review and approve the liquidity costs, benefits, and risk of each significant new line of business and product.

Liquidity stress testing. The proposal would require a company to conduct a liquidity stress test at least monthly.

Stress tests. Stress tests would be conducted annually by the Federal Reserve, and semi-annually by the company.

Single Counterparty Exposure Limits. The proposal would limit net credit exposure of a bank holding company to a single counterparty as a percentage of regulatory capital. There would be a two-tier counterparty credit limit: (1) a

general limit that prohibits a bank holding company (including its subsidiaries) from having aggregate net credit exposure to any single unaffiliated counterparty (including its subsidiaries) in excess of 25% of the company's capital stock and surplus; and (2) a more stringent limit between a bank holding company with over \$500 billion in total assets, and all its subsidiaries, and any counterparty with over \$500 billion in total assets, and all of its subsidiaries, of 10% of the company's capital stock and surplus.

For more information, see "Capital requirements" on pages 4–5 and "Prompt corrective action and early remediation" on page 6.

## Part I

Permissible business activities: JPMorgan Chase elected to become a financial holding company as of March 13, 2000, pursuant to the provisions of the Gramm-Leach-Bliley Act. If a financial holding company or any depository institution controlled by a financial holding company ceases to meet certain capital or management standards, the Federal Reserve may impose corrective capital and/or managerial requirements on the financial holding company and place limitations on its ability to conduct the broader financial activities permissible for financial holding companies. In addition, the Federal Reserve may require divestiture of the holding company's depository institutions if the deficiencies persist. Federal regulations also provide that if any depository institution controlled by a financial holding company fails to maintain a satisfactory rating under the Community Reinvestment Act, the Federal Reserve must prohibit the financial holding company and its subsidiaries from engaging in any additional activities other than those permissible for bank holding companies that are not financial holding companies.

The Federal Reserve has proposed rules under which the Federal Reserve could impose restrictions on systemically important financial institutions that are experiencing financial weakness, which restrictions could include limits on acquisitions, among other things. For more information on the restrictions, see "Prompt corrective action and early remediation" on page 6.

Financial holding companies and bank holding companies are required to obtain the approval of the Federal Reserve before they may acquire more than five percent of the voting shares of an unaffiliated bank. Pursuant to the Riegle-Neal Interstate Banking and Branching Efficiency Act of 1994 (the "Riegle-Neal Act"), the Federal Reserve may approve an application for such an acquisition without regard to whether the transaction is prohibited under the law of any state, provided that the acquiring bank holding company, before or after the acquisition, does not control more than 10% of the total amount of deposits of insured depository institutions in the United States or more than 30% (or such greater or lesser amounts as permitted under state law) of the total deposits of insured depository institutions in the state in which the acquired bank has its home office or a branch. In addition, the Dodd-Frank Act restricts acquisitions by financial companies if, as a result of the acquisition, the total liabilities of the financial company would exceed 10% of the total liabilities of all financial companies. For non-U.S. financial companies, liabilities are calculated using only the risk-weighted assets of their U.S. operations. U.S. financial companies must include all of their risk-weighted assets (including assets held overseas). This could have the effect of allowing a non-U.S. financial company to grow to hold significantly more than 10% of the U.S. market without exceeding the concentration limit. Under the Dodd-Frank Act, the Firm must provide written notice to the Federal Reserve prior to acquiring direct or indirect ownership or control of any voting shares of any company with over \$10 billion in assets that is engaged in "financial in nature" activities.

Dividend restrictions: Federal law imposes limitations on the payment of dividends by national banks. Dividends payable by JPMorgan Chase Bank, N.A. and Chase Bank USA, N.A., as national bank subsidiaries of JPMorgan Chase, are limited to the lesser of the amounts calculated under a "recent earnings" test and an "undivided profits" test. Under the recent earnings test, a dividend may not be paid if the total of all dividends declared by a bank in any calendar year is in excess of the current year's net income combined with the retained net income of the two preceding years, unless the national bank obtains the approval of the OCC. Under the undivided profits test, a dividend may not be paid in excess of a bank's "undivided profits." See Note 27 on page 306 for the amount of dividends that the Firm's principal bank subsidiaries could pay, at January 1, 2013, to their respective bank holding companies without the approval of their banking regulators.

In addition to the dividend restrictions described above, the OCC, the Federal Reserve and the FDIC have authority to prohibit or limit the payment of dividends by the banking organizations they supervise, including JPMorgan Chase and its bank and bank holding company subsidiaries, if, in the banking regulator's opinion, payment of a dividend would constitute an unsafe or unsound practice in light of the financial condition of the banking organization. Under proposed rules issued by the Federal Reserve, dividends are restricted once any one of three risk-based capital ratios (tier 1 common, tier 1 capital, or total capital) falls below their respective minimum capital ratio requirement (inclusive of the GSIB surcharge) plus 2.5%.

Moreover, the Federal Reserve has issued rules requiring bank holding companies, such as JPMorgan Chase, to submit to the Federal Reserve a capital plan on an annual basis and receive a notice of non-objection from the Federal

Reserve before taking capital actions, such as paying dividends, implementing common equity repurchase programs or redeeming or repurchasing capital instruments. For more information, see “CCAR and stress testing” on pages 5–6. Capital requirements: Federal banking regulators have adopted risk-based capital and leverage guidelines that require the Firm’s capital-to-assets ratios to meet certain minimum standards.

The risk-based capital ratio is determined by allocating assets and specified off-balance sheet financial instruments into risk-weighted categories, with higher levels of capital being required for the categories perceived as representing greater risk. Under the guidelines, capital is divided into two tiers: Tier 1 capital and Tier 2 capital. The amount of Tier 2 capital may not exceed the amount of Tier 1 capital. Total capital is the sum of Tier 1 capital and Tier 2 capital. Under the guidelines, banking organizations are required to maintain a total capital ratio (total capital to risk-weighted assets) of 8% and a Tier 1 capital ratio of 4%. For a further description of these guidelines, see Note 28 on pages 306–308.

The federal banking regulators also have established minimum leverage ratio guidelines. The leverage ratio is defined as Tier 1 capital divided by adjusted average total assets. The minimum leverage ratio is 4% for bank holding companies. Bank holding companies may be expected to maintain ratios well above the minimum levels, depending upon their particular condition, risk profile and growth plans. The minimum risk-based capital requirements adopted by the federal banking agencies follow the Capital Accord of the Basel Committee on Banking Supervision (“Basel I”). In 2004, the Basel Committee published a revision to the Accord (“Basel II”). The goal of the Basel II Framework is to provide more risk-sensitive regulatory capital calculations and promote enhanced risk management practices among large, internationally active banking operations. In December 2010, the Basel Committee finalized further revisions to the Accord (“Basel III”) which narrowed the definition of capital, increased capital requirements for specific exposures, introduced short-term liquidity coverage and term funding standards, and established an international leverage ratio. In June 2011, the U.S. federal banking agencies issued rules to establish a permanent Basel I floor under Basel II/Basel III calculations. For further description of these capital requirements, see pages 4–5.

In connection with the U.S. Government’s Supervisory Capital Assessment Program in 2009, U.S. banking regulators developed an additional measure of capital, Tier 1 common, which is defined as Tier 1 capital less elements of Tier 1 capital not in the form of common equity - such as perpetual preferred stock, noncontrolling interests in subsidiaries and trust preferred capital debt securities. Tier 1 common, a non-GAAP financial measure, is used by banking regulators, investors and analysts to assess and compare the quality and composition of the Firm’s capital with the capital of other financial services companies. The Firm uses Tier 1 common along with the other capital measures to assess and monitor its capital position. In June 2012, the U.S. banking regulators revised, effective July 1, 2013, certain capital requirements for trading positions and securitizations (“Basel 2.5”). For more information, see Regulatory capital on pages 117–120.

In June 2011, the Basel Committee and the FSB announced that GSIBs would be required to maintain additional capital, above the Basel III Tier 1 common equity minimum, in amounts ranging from 1% to 2.5%, depending upon the bank’s systemic importance. In November 2012, the FSB announced that the Firm would be in the category subject to a 2.5% capital surcharge. Furthermore, in order to provide a disincentive for banks facing the highest required level of Tier 1 common equity to “increase materially their global systemic importance in the future,” an additional 1% charge could be applied. The Federal Reserve has issued a proposed rule-making that incorporates the concept of a capital surcharge for GSIBs.

The Basel III revisions governing the capital requirements are subject to prolonged observation and transition periods.

The transition period for banks to meet the revised Tier 1 common equity requirement were to begin in 2013, with implementation on January 1, 2019. The additional capital requirements for GSIBs will be phased-in starting January 1, 2016, with full implementation on January 1, 2019. The Firm will continue to monitor the ongoing rule-making process to assess both the timing and the impact of Basel III on its businesses and financial condition.

In addition to capital requirements, the Basel Committee has also proposed two new measures of liquidity risk: the “Liquidity Coverage Ratio” and the “Net Stable Funding Ratio,” which are intended to measure, over different time spans, the amount of liquid assets held by the Firm. The observation periods for both these standards began in 2011, with implementation commencing in 2015 and 2018, respectively.

The Dodd-Frank Act prohibits the use of external credit ratings in federal regulations. In June 2012, the Federal Reserve, OCC and FDIC issued final rules implementing ratings alternatives for the computation of risk-based capital for market risk exposures, which will result in significantly higher capital requirements for many securitization exposures.

For additional information regarding the Firm’s regulatory capital, see Regulatory capital on pages 117–120.

CCAR and stress testing: In December 2011, the Federal Reserve issued final rules regarding the submission of capital plans by bank holding companies with total assets of \$50 billion or more. Pursuant to these rules, the Federal Reserve requires the Firm to submit a capital plan on an annual basis. In October 2012, the Federal Reserve issued rules requiring bank holding companies with over \$50 billion in total assets to perform an annual stress test and report the results to the Federal Reserve in January. The results of the annual stress test will also be publicly disclosed, and will be used as a factor in determining whether the Federal Reserve will or will not object to the bank holding company’s capital plan. On January 7, 2013, the Firm submitted its capital plan to the Federal Reserve under the

Federal Reserve's 2013 CCAR process. The Firm's plan relates to the last three quarters of 2013 and the first quarter of 2014 (that is, the 2013 CCAR capital plan relates to dividends to be declared commencing in June 2013 and payable in July 2013, and to common equity repurchases and other capital actions commencing April 1, 2013). The Firm expects to receive the Federal Reserve's final response to its plan no later than March 14, 2013. In reviewing the capital plan, the Federal Reserve will consider both quantitative and qualitative factors. Quantitative assessments will include, among other things, the Firm's ability to continue to meet supervisory expectation for minimum capital ratios and a Basel I Tier 1 common capital ratio of at least 5% throughout the planning horizon under severely adverse stress conditions of the stress test, even if the Firm did not reduce planned capital actions. Qualitative assessments will include, among other things, the comprehensiveness of the plan, the assumptions and

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analyses underlying the Firm's capital plan, and any relevant supervisory information. If the Federal Reserve objects to the Firm's capital plan, the Firm will be unable to make any capital distributions unless approved by the Federal Reserve. Bank holding companies must perform an additional stress test in the middle of the year and publicly disclose those results as well. The OCC issued similar regulations that require national banks with over \$10 billion in total assets to perform annual stress tests. Accordingly, the Firm will be required to submit separate stress tests to the OCC for its national bank subsidiaries that exceed that threshold.

**Prompt corrective action and early remediation:** The Federal Deposit Insurance Corporation Improvement Act of 1991 requires the relevant federal banking regulator to take "prompt corrective action" with respect to a depository institution if that institution does not meet certain capital adequacy standards. While these regulations apply only to banks, such as JPMorgan Chase Bank, N.A. and Chase Bank USA, N.A., the Federal Reserve is authorized to take appropriate action against the parent bank holding company, such as JPMorgan Chase & Co., based on the undercapitalized status of any bank subsidiary. In certain instances, the bank holding company would be required to guarantee the performance of the capital restoration plan for its undercapitalized subsidiary.

In addition, in December 2011, the Federal Reserve issued proposed rules which provide for early remediation of systemically important financial companies that experience financial weakness. These proposed restrictions could include limits on capital distributions, acquisitions, and requirements to raise additional capital.

**Deposit Insurance:** The FDIC deposit insurance fund provides insurance coverage for certain deposits, which insurance is funded through assessments on banks, such as JPMorgan Chase Bank, N.A. and Chase Bank USA, N.A. Higher levels of bank failures during the financial crisis have dramatically increased resolution costs of the FDIC. In addition, the amount of FDIC insurance coverage for insured deposits has been increased from \$100,000 per depositor to \$250,000 per depositor. In light of the increased stress on the deposit insurance fund caused by these developments, and in order to maintain a strong funding position and restore the reserve ratios of the deposit insurance fund, the FDIC has increased assessment rates of insured institutions generally. As required by the Dodd-Frank Act, the FDIC issued a final rule in February 2011 that changes the assessment base from insured deposits to average consolidated total assets less average tangible equity, and changes the assessment rate calculation. These changes became effective on April 1, 2011, and resulted in a substantial increase in the assessments that the Firm's bank subsidiaries pay annually to the FDIC. For example, in 2011, these changes resulted in an increase of approximately \$600 million in assessments.

**Powers of the FDIC upon insolvency of an insured depository institution or the Firm:** Upon the insolvency of an insured depository institution, the FDIC will be appointed the conservator or receiver under the Federal Deposit Insurance Act. In such an insolvency, the FDIC has the power:

- to transfer any assets and liabilities to a new obligor without the approval of the institution's creditors;
- to enforce the institution's contracts pursuant to their terms; or
- to repudiate or disaffirm any contract or lease to which the institution is a party.

The above provisions would be applicable to obligations and liabilities of JPMorgan Chase's subsidiaries that are insured depository institutions, such as JPMorgan Chase Bank, N.A., and Chase Bank USA, N.A., including, without limitation, obligations under senior or subordinated debt issued by those banks to investors (referred to below as "public noteholders") in the public markets.

Under federal law, the claims of a receiver of an insured depository institution for administrative expense and the claims of holders of U.S. deposit liabilities (including the FDIC) have priority over the claims of other unsecured creditors of the institution, including public noteholders and depositors in non-U.S. offices. As a result, whether or not the FDIC would ever seek to repudiate any obligations held by public noteholders or depositors in non-U.S. offices of any subsidiary of the Firm that is an insured depository institution, such as JPMorgan Chase Bank, N.A., such persons would be treated differently from, and could receive, if anything, substantially less than the depositors in U.S. offices of the depository institution. However, the U.K. Financial Services Authority (the "FSA") has recently issued a proposal that may require the Firm to either obtain equal treatment for U.K. depositors or "subsidiarize" in the U.K.

An FDIC-insured depository institution can be held liable for any loss incurred or expected to be incurred by the FDIC in connection with another FDIC-insured institution under common control with such institution being "in default" or "in

danger of default” (commonly referred to as “cross-guarantee” liability). An FDIC cross-guarantee claim against a depository institution is generally superior in right of payment to claims of the holding company and its affiliates against such depository institution.

Under the Dodd-Frank Act, where a systemically important financial institution, such as JPMorgan Chase, is in default or danger of default, the FDIC may be appointed receiver in order to conduct an orderly liquidation of such systemically important financial institution. The FDIC has issued rules to implement its orderly liquidation authority, and is expected to propose additional rules. The FDIC has powers as receiver similar to those described above. However, the details of certain powers will be the subject of additional rule-makings and have not yet been fully delineated.



**The Bank Secrecy Act:** The Bank Secrecy Act (“BSA”) requires all financial institutions, including banks and securities broker-dealers, to, among other things, establish a risk-based system of internal controls reasonably designed to prevent money laundering and the financing of terrorism. The BSA includes a variety of record-keeping and reporting requirements (such as cash and suspicious activity reporting), as well as due diligence/know-your-customer documentation requirements. The Firm has established a global anti-money laundering program in order to comply with BSA requirements. In January 2013, the Firm entered into Consent Orders with the OCC and the Federal Reserve relating to its BSA and Anti-Money Laundering policies, procedures and controls.

**Regulation by Federal Reserve:** The Federal Reserve acts as an “umbrella regulator” and certain of JPMorgan Chase’s subsidiaries are regulated directly by additional authorities based on the particular activities of those subsidiaries. For example, JPMorgan Chase Bank, N.A., and Chase Bank USA, N.A., are regulated by the OCC. See “Other supervision and regulation” on pages 7–8 for a further description of the regulatory supervision to which the Firm’s subsidiaries are subject.

**Holding company as source of strength for bank subsidiaries:** Effective July 2011, provisions of the Dodd-Frank Act codified the Federal Reserve’s historical policy that requires a bank holding company to serve as a source of financial strength for any depository institution subsidiary and to commit resources to support these subsidiaries in circumstances where it might not do so absent such policy. However, because the Gramm-Leach-Bliley Act provides for functional regulation of financial holding company activities by various regulators, the Gramm-Leach-Bliley Act prohibits the Federal Reserve from requiring payment by a holding company or subsidiary to a depository institution if the functional regulator of the payor objects to such payment. In such a case, the Federal Reserve could instead require the divestiture of the depository institution and impose operating restrictions pending the divestiture.

**Restrictions on transactions with affiliates:** The bank subsidiaries of JPMorgan Chase are subject to certain restrictions imposed by federal law on extensions of credit to, and certain other transactions with, the Firm and certain other affiliates, and on investments in stock or securities of JPMorgan Chase and those affiliates. These restrictions prevent JPMorgan Chase and other affiliates from borrowing from a bank subsidiary unless the loans are secured in specified amounts and are subject to certain other limits. For more information, see Note 27 on page 306. Effective in 2012, the Dodd-Frank Act extended such restrictions to derivatives and securities lending transactions. In addition, the Dodd-Frank Act’s Volcker Rule imposes similar restrictions on transactions between banking entities, such as JPMorgan Chase and its subsidiaries, and hedge funds or private equity funds for

which the banking entity serves as the investment manager, investment advisor or sponsor.

**CFPB regulations regarding mortgages:** The CFPB issued final regulations regarding mortgages, which will become effective in January 2014 and which will prohibit mortgage servicers from beginning foreclosure proceedings until a mortgage loan is 120 days delinquent. During this period, the borrower may apply for a loan modification or other option and the servicer cannot begin foreclosure until the application has been addressed. The CFPB issued another final regulation in December 2012 imposing an “ability to repay” requirement for residential mortgage loans. A creditor (or its assignee) will be liable to the borrower for damages if the creditor fails to make a “good faith and reasonable determination of a borrower’s reasonable ability to repay as of consummation.” Borrowers can sue the creditor or assignee for up to three years after closing, and can raise an ability to repay claim against the servicer as a set off at any point during the loan’s life if in foreclosure. A “Qualified Mortgage” as defined in the regulation is generally protected from such suits.

**Other supervision and regulation:** The Firm’s banks and certain of its nonbank subsidiaries are subject to direct supervision and regulation by various other federal and state authorities (some of which are considered “functional regulators” under the Gramm-Leach-Bliley Act). JPMorgan Chase’s national bank subsidiaries, such as JPMorgan Chase Bank, N.A., and Chase Bank USA, N.A., are subject to supervision and regulation by the OCC and, in certain matters, by the Federal Reserve and the FDIC. Supervision and regulation by the responsible regulatory agency generally includes comprehensive annual reviews of all major aspects of the relevant bank’s business and condition, stress tests of banks and imposition of periodic reporting requirements and limitations on investments, among other powers.

The Firm conducts securities underwriting, dealing and brokerage activities in the United States through J.P. Morgan Securities LLC and other broker-dealer subsidiaries, all of which are subject to regulations of the SEC, the Financial

Industry Regulatory Authority and the New York Stock Exchange, among others. The Firm conducts similar securities activities outside the United States subject to local regulatory requirements. In the United Kingdom, those activities are conducted by J.P. Morgan Securities plc, which is regulated by the FSA. It is expected that, during 2013, regulation of J.P. Morgan Securities plc will transition to the Prudential Regulation Authority (PRA), pursuant to the U.K. Government's plan under the Financial Services Act 2012 to restructure regulatory competences as between the PRA (which will be a subsidiary of the Bank of England having responsibility for prudential regulation of banks and other systemically important institutions) and the Financial Conduct Authority (which will regulate prudential matters for other firms and conduct matters for all participants).

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JPMorgan Chase mutual funds also are subject to regulation by the SEC, in addition to the supervision already described above with respect to money market mutual funds.

The Firm has subsidiaries that are members of futures exchanges in the United States and abroad and are registered accordingly.

In the United States, two subsidiaries are registered as futures commission merchants, and other subsidiaries are either registered with the CFTC as commodity pool operators and commodity trading advisors or exempt from such registration. These CFTC-registered subsidiaries are also members of the National Futures Association. The Firm's U.S. energy business is subject to regulation by the Federal Energy Regulatory Commission. It is also subject to other extensive and evolving energy, commodities, environmental and other governmental regulation both in the United States and other jurisdictions globally.

Under the Dodd-Frank Act, the CFTC and SEC will be the regulators of the Firm's derivatives businesses. JPMorgan Chase Bank, N.A., J.P. Morgan Securities LLC and J.P. Morgan Ventures Energy Corporation have registered with the CFTC as swap dealers. The Firm expects that JPMorgan Chase Bank, N.A. and J.P. Morgan Securities LLC will also register with the SEC as security-based swap dealers.

The types of activities in which the non-U.S. branches of JPMorgan Chase Bank, N.A. and the international subsidiaries of JPMorgan Chase may engage are subject to various restrictions imposed by the Federal Reserve. Those non-U.S. branches and international subsidiaries also are subject to the laws and regulatory authorities of the countries in which they operate.

The activities of JPMorgan Chase Bank, N.A. and Chase Bank USA, N.A. as consumer lenders also are subject to regulation under various U.S. federal laws, including the Truth-in-Lending, Equal Credit Opportunity, Fair Credit Reporting, Fair Debt Collection Practice, Electronic Funds Transfer and CARD acts, as well as various state laws. These statutes impose requirements on consumer loan origination and collection practices. Under the Dodd-Frank Act, the CFPB will be responsible for rule-making and enforcement pursuant to such statutes.

Under the requirements imposed by the Gramm-Leach-Bliley Act, JPMorgan Chase and its subsidiaries are required periodically to disclose to their retail customers the Firm's policies and practices with respect to the sharing of nonpublic customer information with JPMorgan Chase affiliates and others, and the confidentiality and security of that information. Under the Gramm-Leach-Bliley Act, retail customers also must be given the opportunity to "opt out" of information-sharing arrangements with nonaffiliates, subject to certain exceptions set forth in the Gramm-Leach-Bliley Act.

#### Item 1A: RISK FACTORS

The following discussion sets forth the material risk factors that could affect JPMorgan Chase's financial condition and operations. Readers should not consider any descriptions of such factors to be a complete set of all potential risks that could affect the Firm.

##### Regulatory Risk

JPMorgan Chase operates within a highly regulated industry, and the Firm's businesses and results are significantly affected by the laws and regulations to which it is subject.

As a global financial services firm, JPMorgan Chase is subject to extensive and comprehensive regulation under federal and state laws in the United States and the laws of the various jurisdictions outside the United States in which the Firm does business. These laws and regulations significantly affect the way that the Firm does business, and can restrict the scope of its existing businesses and limit its ability to expand its product offerings or to pursue acquisitions, or can make its products and services more expensive for clients and customers.

The U.S. Department of the Treasury, the FSOC, the SEC, the CFTC, the Federal Reserve, the OCC, the CFPB and the FDIC are all engaged in extensive rule-making mandated by the Dodd-Frank Act, and a substantial amount of the rule-making remains to be done. As a result, the complete impact of the Dodd-Frank Act on the Firm's business, operations and earnings remains uncertain. Certain aspects of the Dodd-Frank Act and such rule-making are discussed in more detail below. For further information, see Supervision and regulation on pages 1-8.

Debit interchange. The Firm believes that, as a result of the “Durbin Amendment” provisions of the Dodd-Frank Act, which limit the amount that the Firm can charge for each debit card transaction, the Firm’s annualized net income has been reduced by approximately \$600 million per year. Although the Firm continues to consider various actions to mitigate this reduction in net income, it is unlikely that any such actions will wholly offset such reduction.

Volcker Rule. Until the final regulations under the Volcker Rule are adopted, the precise definition of prohibited “proprietary trading”, the scope of any exceptions, including those related to market-making and hedging activities, and the scope of permitted hedge fund and private equity fund investments remain uncertain. It is unclear under the proposed rules whether some portion of the Firm’s market-making-related and risk mitigation activities, as currently conducted, will be required to be curtailed or will be otherwise adversely affected. In addition, the rules, if enacted as proposed, could prohibit the Firm’s participation and investment in certain securitization structures and could bar the Firm from sponsoring or investing in certain non-U.S. funds. Also, should regulators not exercise their authority to permit the Firm to hold certain investments, including those in illiquid private equity funds, beyond the minimum statutory

divestment period, the Firm could incur substantial losses when it disposes of such investments. The Firm may be forced to sell such investments at a substantial discount in the secondary market as a result of both the constrained timing of such sales and the possibility that other financial institutions are likewise liquidating investments at the same time.

**Derivatives.** In addition to imposing comprehensive regulation on the Firm's derivatives businesses, the Dodd-Frank Act also requires banking entities, such as JPMorgan Chase, to significantly restructure their derivatives businesses, including changing the legal entities through which such businesses are conducted. Further, some of the rules for swaps will apply extraterritorially to U.S. firms doing business with clients outside of the United States. Clients of non-U.S. firms doing business outside the United States may not be required to comply with the same rules in similar transactions. This disparity in the application of the different rules could place JPMorgan Chase at a significant competitive disadvantage to its non-U.S. competitors, which could have a material adverse effect on the earnings and profitability of the Firm's wholesale businesses.

**Heightened prudential standards for systemically important financial institutions.** Under the Dodd-Frank Act, JPMorgan Chase is considered to be a systemically important financial institution and is subject to heightened prudential standards and supervision. If the proposed rules issued by the Federal Reserve in December 2011 are adopted as currently proposed, they are likely to increase the Firm's operational, compliance and risk management costs, and could have an adverse effect on the Firm's business, results of operations or financial condition.

**CFPB.** The CFPB has issued final regulations regarding mortgages which will become effective in January 2014 and which will prohibit mortgage servicers from beginning foreclosure proceedings until a mortgage loan is 120 days delinquent, and will impose an "ability to repay" requirement for residential mortgage loans. Other new regulatory requirements or changes to existing requirements that the CFPB may promulgate could require changes in JPMorgan Chase's consumer businesses, result in increased compliance costs and impair the profitability of such businesses. In addition, as a result of the Dodd-Frank Act's potential expansion of the authority of state attorneys general to bring actions to enforce federal consumer protection legislation, the Firm could potentially be subject to additional state lawsuits and enforcement actions, thereby further increasing its legal and compliance costs.

**Resolution.** The FDIC and the Federal Reserve have issued a final rule that requires the Firm to submit periodically to the Federal Reserve and the FDIC a resolution plan under the Bankruptcy Code in the event of material financial distress or failure (a "resolution plan"). The FDIC also issued a final rule that requires the Firm to submit periodic contingency plans to the FDIC under the Federal Deposit Insurance Act outlining its resolution plan in the event of its failure. The Firm's initial resolution plan submissions were filed in July

2012, and updates are due annually. If the FDIC and the Federal Reserve determine that the Firm's resolution plan is not credible or would not facilitate an orderly resolution under the Bankruptcy Code, the FDIC and the Federal Reserve may jointly impose more stringent capital, leverage or liquidity requirements on the Firm, or restrictions on the growth, activities or operations of the Firm, or require the Firm to restructure, reorganize or divest certain assets or operations in order to facilitate an orderly resolution. Any such measures, particularly those aimed at the disaggregation of the Firm, may reduce the Firm's capital, adversely affect the Firm's operations and profitability, increase the Firm's systems, technology and managerial costs, lessen efficiencies and economies of scale and potentially impede the Firm's business strategies.

In addition, holders of subordinated debt or preferred stock issued by the Firm may be fully subordinated to interests held by the U.S. government in the event that the Firm enters into a receivership, insolvency, liquidation or similar proceeding.

**Concentration Limits.** The Dodd-Frank Act restricts acquisitions by financial companies if, as a result of the acquisition, the total liabilities of the financial company would exceed 10% of the total liabilities of all financial companies in the United States. The Federal Reserve is expected to issue rules related to these provisions in 2013. This concentration limit could restrict the Firm's ability to make acquisitions in the future, thereby adversely affecting its growth prospects.

The total impact of the Dodd-Frank Act cannot be fully assessed without taking into consideration how non-U.S. policymakers and regulators respond to the Dodd-Frank Act and the implementing regulations under the Act, and how

the cumulative effects of both U.S. and non-U.S. laws and regulations will affect the businesses and operations of the Firm. Additional legislative or regulatory actions in the United States, as well as in the other countries in which the Firm operates, could result in a significant loss of revenue for the Firm, limit the Firm's ability to pursue business opportunities in which it might otherwise consider engaging, affect the value of assets that the Firm holds, require the Firm to increase its prices and therefore reduce demand for its products, impose additional costs on the Firm, or otherwise adversely affect the Firm's businesses. Accordingly, any such new or additional legislation or regulations could have an adverse effect on the Firm's business, results of operations or financial condition.

Non-U.S. regulations and initiatives may be inconsistent or may conflict with current or proposed regulations in the United States, which could create increased compliance and other costs and adversely affect the Firm's business, operations or profitability.

The EU has created a European Systemic Risk Board to monitor financial stability, and the Group of Twenty Finance Ministers and Central Bank Governors ("G-20") broadened the membership and scope of the Financial Stability Forum in 2008 to form the FSB. These institutions, which are

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charged with developing ways to promote cross-border financial stability, are considering various proposals to address risks associated with global financial institutions. Some of the initiatives adopted include increased capital requirements for certain trading instruments or exposures and compensation limits on certain employees located in affected countries. In the U.K., regulators have increased liquidity requirements for local financial institutions, including regulated U.K. subsidiaries of non-U.K. bank holding companies and branches of non-U.K. banks located in the U.K.; adopted a Bank Tax Levy that applies to balance sheets of branches and subsidiaries of non-U.K. banks; proposed that non-U.K. banks either obtain equal treatment for U.K. depositors or “subsidiarize” in the U.K.; and proposed the creation of resolution and recovery plans by U.K. regulated entities, among other initiatives.

In the EU, there is an extensive and complex program of proposed regulatory enhancement which reflects, in part, the EU’s commitments to policies of the G-20 together with other plans specific to the EU. This program includes the European Market Infrastructure Regulation (“EMIR”) which, among other things, would require central clearing of standardized derivatives and which is likely to be phased in starting in 2013. It also includes the revision of the existing Markets in Financial Instruments Directive (“MiFID II”) to deliver, among other things, the G20 commitment to on-venue trading of derivatives. Both EMIR and MiFID II include many other regulatory requirements that may have wide-ranging and material effects on the Firm’s business operations.

The EU is also currently considering significant revisions to laws covering: depositary activities; credit rating activities; resolution of banks, investment firms and market infrastructures; anti-money-laundering controls; data security and privacy; and corporate governance in financial firms, together with implementation in the EU of the Basel III capital standards. In addition, the Firm is monitoring any potential implications for its business of developments in relation to both bank structure (in respect of which both the EU itself and a variety of EU Member States unilaterally are considering new rules) and the EU’s plans for a single supervisory mechanism for systemic banks under the European Central Bank. For example, the U.K. Independent Commission on Banking (the “Vickers Commission”) proposed provisions, which are now set forth in draft legislation, that would mandate the separation (or “ring-fencing”) of deposit-taking activities from securities trading and other analogous activities within banks, subject to certain exemptions. The final legislation is expected to adopt and include the supplemental recommendation of the Parliamentary Commission on Banking Standards (the “Tyrie Commission”) that such ring-fences should be “electrified” by the imposition of mandatory forced separation on banking institutions that are deemed to test the limits of the safeguards. It is believed that the Firm will have the benefit of the above-referenced exemptions from the requirement to “ring-fence,” but this cannot be determined until the criteria are known with certainty.

Parallel but distinct draft provisions have been published by the French and German governments which could affect the Firm’s operations in those countries.

It is not possible to determine at the current time how these various proposals will affect the Firm’s businesses, or how each relate to the European Commission’s forthcoming legislative proposals on bank structure arising out of the Report of the High Level Expert Group on Reforming the Structure of the EU Banking Sector (the “Liikanen Group”). However, as regulatory requirements that are being proposed by these various regulators may be inconsistent or conflict with regulations to which the Firm is subject in the United States (as well as in other parts of the world), the Firm may, if these proposals are adopted, be subjected to higher compliance and legal costs, as well as the possibility of higher operational, capital and liquidity costs, all of which could have an adverse effect on the Firm’s business, results of operations and profitability in the future.

The Basel III capital standards will impose additional capital, liquidity and other requirements on the Firm that could decrease its competitiveness and profitability.

The Basel Committee on Banking Supervision (the “Basel Committee”) announced in December 2010 revisions to its Capital Accord; such revisions are commonly referred to as “Basel III”. Basel III will require higher capital ratio requirements for banks, narrow the definition of capital, expand the definition of risk-weighted assets, and introduce short-term liquidity and term funding standards, among other things. In June 2012, the U.S. federal banking agencies published proposed capital rules to implement Basel III.

Capital Surcharge. In June 2011, the Basel Committee and the FSB proposed that GSIBs be required to maintain additional capital above the Basel III Tier 1 common equity minimum. See page 5 in Item 1: Business, for further

information on the proposed capital change. Based on the Firm's current understanding of these new capital requirements, the Firm expects that it will be in compliance with all of the standards to which it will be subject as they become effective. However, compliance with these capital standards may reduce the Firm's return on equity or cause the Firm to alter the types of products it offers to its customers and clients, thereby causing the Firm's products to become less attractive or placing the Firm at a competitive disadvantage to financial institutions, both within and outside the United States, that are not subject to the same capital surcharge.

Liquidity Coverage and Net Stable Funding Ratios. The Basel Committee has also proposed two new measures of liquidity risk: the "liquidity coverage ratio" and the "net stable funding ratio," which are intended to measure, during an acute stress, over different time spans, the amount of the liquid assets held by the Firm in relation to liquidity required. If the ratios are finalized as currently proposed, the Firm may need to incur additional costs to raise liquidity and to take certain mitigating actions, such as ceasing to



offer certain products to its customers and clients or charging higher fees for extending certain lines of credit, in order to be in compliance with such ratios. Accordingly, compliance with these liquidity coverage standards could adversely affect the Firm's funding costs or reduce its profitability in the future.

**Elimination of Use of External Credit Ratings.** The Federal Reserve, the OCC and the FDIC have issued final rules for risk-based capital guidelines which eliminate the use of external credit ratings for the calculation of risk-weighted assets. This will result in a significant increase in the calculation of the Firm's risk-weighted assets, which will require the Firm to hold more capital, increase its cost of doing business and place the Firm at a competitive disadvantage to non-U.S. competitors.

Expanded regulatory oversight of JPMorgan Chase's consumer businesses will increase the Firm's compliance costs and risks and may negatively affect the profitability of such businesses.

JPMorgan Chase's consumer businesses are subject to increasing regulatory oversight and scrutiny with respect to its compliance with consumer laws and regulations, including changes implemented as part of the Dodd-Frank Act. The Firm has entered into Consent Orders with its banking regulators relating to its Bank Secrecy Act ("BSA") and Anti-Money Laundering ("AML") policies, procedures and controls and with respect to its residential mortgage servicing, foreclosure and loss-mitigation activities. The Firm also agreed in 2012 to a global settlement with a number of federal and state government agencies relating to the servicing and origination of mortgages. The mortgage-related Consent Order and global settlement require the Firm to make cash payments and provide certain refinancing and other borrower relief, as well as to adhere to certain enhanced mortgage servicing standards, and the BSA/AML Consent Order will require the Firm to make enhancements to its procedures, make investments in its technology and hire additional personnel, all of which will increase the Firm's operational and compliance costs. New regulatory requirements or changes to existing requirements that the CFPB may promulgate could require changes in the product offerings and practices of JPMorgan Chase's consumer businesses and affect the profitability of such businesses.

Finally, as a result of increasing federal and state scrutiny of the Firm's consumer practices, the Firm may face a greater number or wider scope of investigations, enforcement actions and litigation, thereby increasing its costs associated with responding to or defending such actions. In addition, increased regulatory inquiries and investigations, as well as any additional legislative or regulatory developments affecting the Firm's consumer businesses, and any required changes to the Firm's business operations resulting from these developments, could result in significant loss of revenue, limit the products or services the Firm offers, require the Firm to increase its prices and therefore reduce demand for its products, impose

additional compliance costs on the Firm, cause harm to the Firm's reputation or otherwise adversely affect the Firm's consumer businesses. If the Firm does not appropriately comply with current or future legislation and regulations that apply to its consumer operations, the Firm may be subject to fines, penalties or judgments, or material regulatory restrictions on its businesses, which could adversely affect the Firm's operations and, in turn, its financial results. Implementation of the Firm's resolution plan under the U.S. resolution plan rules could materially impair the claims of JPMorgan Chase debt holders.

As noted above, in July 2012 JPMorgan Chase submitted to the Federal Reserve and the FDIC its initial plan for resolution of the Firm. The Firm's resolution plan includes strategies to resolve the Firm under the Bankruptcy Code, and also recommends to the FDIC and the Federal Reserve the Firm's proposed optimal strategy to resolve the Firm under the special resolution procedure provided in Title II of the Dodd-Frank Act ("Title II").

The Firm's recommendation for its optimal Title II strategy would involve a "single point of entry" recapitalization model in which the FDIC would use its power to create a "bridge entity" for JPMorgan Chase, transfer the systemically important and viable parts of the Firm's business, principally the stock of JPMorgan Chase & Co.'s main operating subsidiaries and any intercompany claims against such subsidiaries, to the bridge entity, recapitalize those businesses by contributing some or all of such intercompany claims to the capital of such subsidiaries, and by exchanging debt claims against JPMorgan Chase & Co. for equity in the bridge entity. If the Firm were to be resolved under this strategy, no assurance can be given that the value of the stock of the bridge entity distributed to the holders of debt obligations of JPMorgan Chase & Co. would be sufficient to repay or satisfy all or part of the principal amount of, and

interest on, the debt obligations for which such stock was exchanged.

**Market Risk**

JPMorgan Chase's results of operations have been, and may continue to be, adversely affected by U.S. and international financial market and economic conditions.

JPMorgan Chase's businesses are materially affected by economic and market conditions, including the liquidity of the global financial markets; the level and volatility of debt and equity prices, interest rates and currency and commodities prices; investor sentiment; events that reduce confidence in the financial markets; inflation and unemployment; the availability and cost of capital and credit; the occurrence of natural disasters, acts of war or terrorism; and the health of U.S. or international economies.

In the Firm's wholesale businesses, the above-mentioned factors can affect transactions involving the Firm's underwriting and advisory businesses; the realization of cash returns from its private equity business; the volume of transactions that the Firm executes for its customers and,

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therefore, the revenue that the Firm receives from commissions and spreads; and the willingness of financial sponsors or other investors to participate in loan syndications or underwritings managed by the Firm.

The Firm generally maintains extensive positions in the fixed income, currency, commodities and equity markets to facilitate client demand and provide liquidity to clients. The Firm may have market-making positions that lack pricing transparency or liquidity. The revenue derived from these positions is affected by many factors, including the Firm's success in effectively hedging its market and other risks, volatility in interest rates and equity, debt and commodities markets, credit spreads, and availability of liquidity in the capital markets, all of which are affected by economic and market conditions. The Firm anticipates that revenue relating to its market-making and private equity businesses will continue to experience volatility, which will affect pricing or the ability to realize returns from such activities, and that this could materially adversely affect the Firm's earnings.

The fees that the Firm earns for managing third-party assets are also dependent upon general economic conditions. For example, a higher level of U.S. or non-U.S. interest rates or a downturn in securities markets could affect the valuations of the third-party assets that the Firm manages or holds in custody, which, in turn, could affect the Firm's revenue. Macroeconomic or market concerns may also prompt outflows from the Firm's funds or accounts.

Changes in interest rates will affect the level of assets and liabilities held on the Firm's balance sheet and the revenue that the Firm earns from net interest income. A low interest rate environment or a flat or inverted yield curve may adversely affect certain of the Firm's businesses by compressing net interest margins, reducing the amounts that the Firm earns on its investment securities portfolio, or reducing the value of its mortgage servicing rights ("MSR") asset, thereby reducing the Firm's net interest income and other revenues.

The Firm's consumer businesses are particularly affected by domestic economic conditions, including U.S. interest rates; the rate of unemployment; housing prices; the level of consumer confidence; changes in consumer spending; and the number of personal bankruptcies. If the current positive trends in the U.S. economy are not sustained, this could diminish demand for the products and services of the Firm's consumer businesses, or increase the cost to provide such products and services. In addition, adverse economic conditions, such as declines in home prices or persistent high levels of unemployment, could lead to an increase in mortgage, credit card and other loan delinquencies and higher net charge-offs, which can reduce the Firm's earnings.

Widening of credit spreads makes it more expensive for the Firm to borrow on both a secured and unsecured basis. Credit spreads widen or narrow not only in response to Firm-specific events and circumstances, but also as a result of general economic and geopolitical events and conditions.

Changes in the Firm's credit spreads will impact, positively or negatively, the Firm's earnings on liabilities that are recorded at fair value.

Despite improved financial market conditions, many of the structural issues facing the Eurozone remain and problems could resurface which could have significant adverse effects on JPMorgan Chase's business, results of operations, financial condition and liquidity.

Notwithstanding improved financial market conditions, many of the structural issues facing the Eurozone remain and problems could resurface which could have significant adverse effects on JPMorgan Chase's business, results of operations, financial condition and liquidity, particularly if they lead to sovereign debt default, significant bank failures or defaults and/or the exit of one or more countries from the European Monetary Union (the "EMU").

The ECB's Outright Monetary Transaction program continues to underpin an improved risk environment, shifting the focus of the crisis from immediate financing strains to the more structural challenges of fiscal retrenchment and stimulation of GDP growth. However, financial market conditions could materially worsen if, for example, consecutive Eurozone countries were to default on their sovereign debt, significant bank failures or defaults in these countries were to occur, and/or one or more of the members of the Eurozone were to exit the EMU. Yields on government bonds of certain Eurozone countries, including Greece, Ireland, Italy, Portugal and Spain, have remained volatile, despite various stabilization packages and facilities that have been implemented to assist various distressed Eurozone countries. Concerns have been and continue to be raised as to the financial effectiveness of the assistance measures taken to date and such concerns could intensify. Concerns could also be triggered by political developments, with key elections in Italy and Germany during 2013, and ongoing uncertainty about the tolerance of austerity across

the Eurozone.

Continued economic turmoil in the Eurozone could lead to a further deterioration of global economic conditions and thereby adversely affect the Firm's business and results of operations in Europe and elsewhere. There can be no assurance that the various steps that JPMorgan Chase has taken to protect its businesses, results of operations and financial condition against the results of the Eurozone crisis will be sufficient.

Further, the effects of the Eurozone debt crisis could be even more significant if they lead to a partial or complete break-up of the EMU. The partial or full break-up of the EMU would be unprecedented and its impact highly uncertain. The exit of one or more countries from the EMU or the dissolution of the EMU could lead to redenomination of certain obligations of obligors in exiting countries. Any such exit and redenomination would cause significant uncertainty with respect to outstanding obligations of counterparties and debtors in any exiting country, whether sovereign or otherwise, and lead to complex and lengthy disputes and litigation. The resulting uncertainty and

market stress could also cause, among other things, severe disruption to equity markets, significant increases in bond yields generally, potential failure or default of financial institutions, including those of systemic importance, a significant decrease in global liquidity, a freeze-up of global credit markets and a potential worldwide recession. Any combination of such events could negatively impact JPMorgan Chase's businesses, financial condition and results of operations. In addition, one or more EMU exits and currency redenominations could be accompanied by imposition of capital, exchange and similar controls, which could further negatively impact JPMorgan Chase's cross-border risk and other aspects of its businesses and its earnings. See "Management's Discussion and Analysis - Country Risk Management" on pages 170–173 for a discussion of the Firm's European exposures.

Changes are being considered in the method for determining LIBOR and it is not apparent how any such changes could affect the value of LIBOR-linked obligations of JPMorgan Chase, or how such changes could affect the Firm's financial condition or results of operations.

Beginning in 2008, concerns have been raised about the accuracy of the calculation of the daily London Inter-Bank Offered Rate ("LIBOR"), which is currently overseen by the British Bankers' Association (the "BBA"). The BBA has taken steps to change the process for determining LIBOR by increasing the number of banks surveyed to set LIBOR and to strengthen the oversight of the process. The final report of the Wheatley Review of LIBOR, published in September 2012, set forth recommendations relating to the setting and administration of LIBOR, including the gradual phasing out of certain currencies and maturities. In December 2012 the U.K. government adopted legislation enacting one of those recommendations, making it a criminal offense to attempt to manipulate the setting of benchmark rates. The U.K. government also announced that the U.K. Financial Services Authority ("FSA") intends to incorporate the rest of the Wheatley Review recommendations in new regulations relating to the LIBOR process.

At the present time it is uncertain the extent of changes, if any, may be required or made by the FSA or other governmental or regulatory authorities in the method for determining LIBOR. Accordingly, at the present time it is not apparent whether or to what extent any such changes would have an adverse impact on the value of any LIBOR-linked debt securities issued by the Firm or any loans, derivatives and other financial obligations or extensions of credit for which the Firm is an obligor, or whether or to what extent any such changes would have an adverse effect on the value of any LIBOR-linked securities, loans, derivatives and other financial obligations or extensions of credit held by or due to the Firm, or on the Firm's financial condition or results of operations.

#### Credit Risk

The financial condition of JPMorgan Chase's customers, clients and counterparties, including other financial institutions, could adversely affect the Firm.

If the current positive economic trends globally are not sustained, more of JPMorgan Chase's customers may become delinquent on their loans or other obligations to the Firm which, in turn, could result in a higher level of charge-offs and provisions for credit losses, or in requirements that the Firm purchase assets from or provide other funding to its clients and counterparties, any of which could adversely affect the Firm's financial condition. Moreover, a significant deterioration in the credit quality of one of the Firm's counterparties could lead to concerns in the market about the credit quality of other counterparties in the same industry, thereby exacerbating the Firm's credit risk exposure, and increasing the losses (including mark-to-market losses) that the Firm could incur in its market-making and clearing businesses.

Financial services institutions are interrelated as a result of market-making, trading, clearing, counterparty, or other relationships. The Firm routinely executes transactions with counterparties in the financial services industry, including brokers and dealers, commercial banks, investment banks, mutual and hedge funds, and other institutional clients. Many of these transactions expose the Firm to credit risk and, in some cases, disputes and litigation in the event of a default by the counterparty or client.

During periods of market stress or illiquidity, the Firm's credit risk also may be further increased when the Firm cannot realize the fair value of the collateral held by it or when collateral is liquidated at prices that are not sufficient to recover the full amount of the loan, derivative or other exposure due to the Firm. Further, disputes with obligors as to the valuation of collateral significantly increase in times of market stress and illiquidity. Periods of illiquidity could produce losses if the Firm is unable to realize the fair value of collateral or manage declines in the value of collateral.

Concentration of credit and market risk could increase the potential for significant losses.

JPMorgan Chase has exposure to increased levels of risk when customers are engaged in similar business activities or activities in the same geographic region, or when they have similar economic features that would cause their ability to meet contractual obligations to be similarly affected by changes in economic conditions. As a result, the Firm regularly monitors various segments of its portfolio exposures to assess potential concentration risks. The Firm's efforts to diversify or hedge its credit portfolio against concentration risks may not be successful.

In addition, disruptions in the liquidity or transparency of the financial markets may result in the Firm's inability to sell, syndicate or realize the value of its positions, thereby leading to increased concentrations. The inability to reduce the Firm's positions may not only increase the market and credit risks associated with such positions, but also increase

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the level of risk-weighted assets on the Firm's balance sheet, thereby increasing its capital requirements and funding costs, all of which could adversely affect the operations and profitability of the Firm's businesses.

JPMorgan Chase's role as a clearing and custody bank in the U.S. tri-party repurchase business exposes it to credit risks, including intra-day credit risk.

The Firm is a market leader in providing clearing, custodial and prime brokerage services for financial services companies. In addition, the Firm acts as a clearing and custody bank in the U.S. tri-party repurchase transaction market. Many of these transactions expose the Firm to credit risk in the event of a default by the counterparty or client and, in the case of its role in the U.S. tri-party repurchase business, can expose the Firm to intra-day credit risk of the cash borrowers, usually broker-dealers; however, this exposure is secured by collateral and typically extinguished through the settlement process by the end of the day. The Firm actively participated in the Tri-Party Repo Infrastructure Reform Task Force sponsored by the Federal Reserve Bank of New York, which issued recommendations to modify and improve the infrastructure of tri-party repurchase transactions in order to, among other things, mitigate intra-day credit exposure. The Firm has implemented many of the recommendations and intends to implement the intra-day credit recommendations by the end of 2013. As a result, the Firm expects its intra-day credit exposure after implementation of all the Task Force recommendations to be substantially reduced. Nevertheless, if a broker-dealer that is party to a repurchase transaction cleared by the Firm becomes bankrupt or insolvent, the Firm may become involved in disputes and litigation with the broker-dealer's bankruptcy estate and other creditors, or involved in regulatory investigations, all of which can increase the Firm's operational and litigation costs and may result in losses if the securities in the repurchase transaction decline in value.

Liquidity Risk

If JPMorgan Chase does not effectively manage its liquidity, its business could suffer.

JPMorgan Chase's liquidity is critical to its ability to operate its businesses. Some potential conditions that could impair the Firm's liquidity include markets that become illiquid or are otherwise experiencing disruption, unforeseen cash or capital requirements (including, among others, commitments that may be triggered to special purpose entities ("SPEs") or other entities), difficulty in selling or inability to sell assets, unforeseen outflows of cash or collateral, and lack of market or customer confidence in the Firm or financial markets in general. These conditions may be caused by events over which the Firm has little or no control. The widespread crisis in investor confidence and resulting liquidity crisis experienced in 2008 and into early 2009 increased the Firm's cost of funding and limited its access to some of its traditional sources of liquidity such as securitized debt offerings backed by mortgages, credit card

receivables and other assets, and there is no assurance that these conditions could not occur in the future.

If the Firm's access to stable and low cost sources of funding, such as bank deposits, are reduced, the Firm may need to raise alternative funding which may be more expensive or of limited availability.

As a holding company, JPMorgan Chase & Co. relies on the earnings of its subsidiaries for its cash flow and, consequently, its ability to pay dividends and satisfy its debt and other obligations. These payments by subsidiaries may take the form of dividends, loans or other payments. Several of JPMorgan Chase & Co.'s principal subsidiaries are subject to dividend distribution or capital adequacy requirements or other regulatory restrictions on their ability to provide such payments. Limitations in the payments that JPMorgan Chase & Co. receives from its subsidiaries could reduce its liquidity position.

Some regulators have proposed legislation or regulations requiring large banks to incorporate a separate subsidiary in countries in which they operate, and to maintain independent capital and liquidity for such subsidiaries. If adopted, these requirements could hinder the Firm's ability to efficiently manage its funding and liquidity in a centralized manner.

Reductions in the Firm's credit ratings may adversely affect its liquidity and cost of funding, as well as the value of debt obligations issued by the Firm.

JPMorgan Chase & Co. and certain of its subsidiaries, including JPMorgan Chase Bank, N.A., are currently rated by credit rating agencies. In 2012, Moody's and Fitch downgraded the ratings of JPMorgan Chase & Co. In addition, as of year-end 2012, Moody's had JPMorgan Chase & Co., and S&P had JPMorgan Chase & Co., JPMorgan Chase Bank, N.A. and certain other subsidiaries, on "negative" outlook, indicating the possibility of a further downgrade in ratings.

Although the Firm closely monitors and manages factors influencing its credit ratings, there is no assurance that such ratings will not be lowered in the future. For example, the rating agencies, have indicated that further control failures by the Firm (such as was evidenced in the Chief Investment Office (“CIO”) matter discussed below), deterioration in capital, liquidity and asset quality levels, or a significant increase in risk appetite could put downward pressure on the Firm’s ratings. Additionally, the rating agencies have indicated that they intend to re-evaluate the credit ratings of systemically important financial institutions in light of the provisions of the Dodd-Frank Act that seek to eliminate any implicit government support for such institutions.

Furthermore, the rating agencies continue to evaluate economic and geopolitical trends, including sovereign creditworthiness, elevated economic uncertainty and higher funding spreads, all of which could lead to downgrades in the credit ratings of global banks, including the Firm. There is no assurance that any such downgrades from rating agencies, if they affected the Firm’s credit ratings, would not occur at times of broader market instability when the



Firm's options for responding to events may be more limited and general investor confidence is low. Further, a reduction in the Firm's credit ratings could reduce the Firm's access to debt markets, materially increase the cost of issuing debt, trigger additional collateral or funding requirements, and decrease the number of investors and counterparties willing or permitted, contractually or otherwise, to do business with or lend to the Firm, thereby curtailing the Firm's business operations and reducing its profitability. In addition, any such reduction in credit ratings may increase the credit spreads charged by the market for taking credit risk on JPMorgan Chase & Co. and its subsidiaries and, as a result, could adversely affect the value of debt obligations that they have issued or may issue in the future.

#### Legal Risk

JPMorgan Chase faces significant legal risks, both from regulatory investigations and proceedings and from private actions brought against the Firm.

JPMorgan Chase is named as a defendant or is otherwise involved in various legal proceedings, including class actions and other litigation or disputes with third parties. There is no assurance that litigation with private parties will not increase in the future. Actions currently pending against the Firm may result in judgments, settlements, fines, penalties or other results adverse to the Firm, which could materially adversely affect the Firm's business, financial condition or results of operations, or cause serious reputational harm to the Firm. As a participant in the financial services industry, it is likely that the Firm will continue to experience a high level of litigation related to its businesses and operations.

The Firm's businesses and operations are also subject to increasing regulatory oversight and scrutiny, which may lead to additional regulatory investigations or enforcement actions. In 2012, the Firm was the subject of Consent Orders from its banking regulators and entered into a global settlement with federal and state governmental agencies relating to its mortgage servicing and origination activities. In January 2013, the Firm also entered into Consent Orders with its banking regulators related to risk management, model governance and other control functions related to CIO and certain other trading activities at the Firm and with respect to the Firm's and certain of its bank subsidiaries' policies, procedures and controls relating to compliance with BSA and AML requirements. As the regulators continue to examine the operations of the Firm and its bank subsidiaries, there is no assurance that additional consent orders or other enforcement actions will not be issued by them in the future. These and other initiatives from federal and state officials may subject the Firm to further judgments, settlements, fines or penalties, or cause the Firm to be required to restructure its operations and activities, all of which could lead to reputational issues, or higher operational costs, thereby reducing the Firm's revenue.

#### Business and Operational Risks

JPMorgan Chase's operations are subject to risk of loss from unfavorable economic, monetary and political developments in the United States and around the world.

JPMorgan Chase's businesses and earnings are affected by the fiscal and other policies that are adopted by various U.S. and non-U.S. regulatory authorities and agencies. The Federal Reserve regulates the supply of money and credit in the United States and its policies determine in large part the cost of funds for lending and investing in the United States and the return earned on those loans and investments. Changes in Federal Reserve policies (as well as the fiscal and monetary policies of non-U.S. central banks or regulatory authorities and agencies) are beyond the Firm's control and, consequently, the impact of changes in these policies on the Firm's activities and results of operations is difficult to predict.

The Firm's businesses and revenue are also subject to risks inherent in investing and market-making in securities of companies worldwide. These risks include, among others, risk of loss from unfavorable political, legal or other developments, including social or political instability, in the countries in which such companies operate, as well as the other risks and considerations as described further below.

Several of the Firm's businesses engage in transactions with, or trade in obligations of, U.S. and non-U.S. governmental entities, including national, state, provincial, municipal and local authorities. These activities can expose the Firm to enhanced sovereign, credit-related, operational and reputational risks, including the risks that a governmental entity may default on or restructure its obligations or may claim that actions taken by government

officials were beyond the legal authority of those officials, which could adversely affect the Firm's financial condition and results of operations.

Further, various countries in which the Firm operates or invests, or in which the Firm may do so in the future, have in the past experienced severe economic disruptions particular to those countries or regions. As noted above, concerns regarding the fiscal condition of certain countries within the Eurozone continue and there is no assurance such concerns will not lead to "market contagion" beyond those countries in the Eurozone or beyond the Eurozone.

Accordingly, it is possible that economic disruptions in certain countries, even in countries in which the Firm does not conduct business or have operations, will adversely affect the Firm.

JPMorgan Chase's international growth strategy may be hindered by local political, social and economic factors, and will be subject to additional compliance costs and risks.

JPMorgan Chase has expanded, and plans to continue to grow, its international wholesale businesses in Europe/Middle East/Africa ("EMEA"), Asia/Pacific and Latin America/Caribbean. As part of its international growth strategy, the Firm seeks to provide a wider range of

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financial services to its clients that conduct business in those regions and to expand its international operations. Many of the countries in which JPMorgan Chase intends to grow its wholesale businesses have economies or markets that are less developed and more volatile, and may have legal and regulatory regimes that are less established or predictable, than the United States and other developed markets in which the Firm currently operates. Some of these countries have in the past experienced severe economic disruptions, including extreme currency fluctuations, high inflation, or low or negative growth, among other negative conditions, or have imposed restrictive monetary policies such as currency exchange controls and other laws and restrictions that adversely affect the local and regional business environment. In addition, these countries have historically been more susceptible to unfavorable political, social or economic developments which have in the past resulted in, and may in the future lead to, social unrest, general strikes and demonstrations, outbreaks of hostilities, overthrow of incumbent governments, terrorist attacks or other forms of internal discord, all of which can adversely affect the Firm's operations or investments in such countries. Political, social or economic disruption or dislocation in countries or regions in which the Firm seeks to expand its wholesale businesses can hinder the growth and profitability of those operations, and there can be no assurance that the Firm will be able to successfully execute its international growth initiatives.

Less developed legal and regulatory systems in certain countries can also have adverse consequences on the Firm's operations in those countries, including, among others, the absence of a statutory or regulatory basis or guidance for engaging in specific types of business or transactions, or the inconsistent application or interpretation of existing laws and regulations; uncertainty as to the enforceability of contractual obligations; difficulty in competing in economies in which the government controls or protects all or a portion of the local economy or specific businesses, or where graft or corruption may be pervasive; and the threat of arbitrary regulatory investigations, civil litigations or criminal prosecutions.

Revenue from international operations and trading in non-U.S. securities and other obligations may be subject to negative fluctuations as a result of the above considerations, as well as due to governmental actions including expropriation, nationalization, confiscation of assets, price controls, capital controls, exchange controls, and changes in laws and regulations. The impact of these fluctuations could be accentuated as some trading markets are smaller, less liquid and more volatile than larger markets. Also, any of the above-mentioned events or circumstances in one country can, and has in the past, affected the Firm's operations and investments in another country or countries, including the Firm's operations in the United States. As a result, any such unfavorable conditions

or developments could have an adverse impact on the Firm's business and results of operations.

Conducting business in countries with less developed legal and regulatory regimes often requires the Firm to devote significant additional resources to understanding, and monitoring changes in, local laws and regulations, as well as structuring its operations to comply with local laws and regulations and implementing and administering related internal policies and procedures. There can be no assurance that the Firm will always be successful in its efforts to conduct its business in compliance with laws and regulations in countries with less predictable legal and regulatory systems. In addition, the Firm can also incur higher costs, and face greater compliance risks, in structuring its operations outside the United States to comply with U.S. anti-corruption and anti-money laundering laws and regulations.

JPMorgan Chase's results of operations may be adversely affected by loan repurchase and indemnity obligations. In connection with the sale and securitization of loans (whether with or without recourse), the originator is generally required to make a variety of representations and warranties regarding both the originator and the loans being sold or securitized. JPMorgan Chase and some of its subsidiaries have made such representations and warranties in connection with the sale and securitization of loans, and the Firm will continue to do so when it securitizes loans it has originated. If a loan that does not comply with such representations or warranties is sold or securitized, the Firm may be obligated to repurchase the loan and incur any associated loss directly, or the Firm may be obligated to indemnify the purchaser against any such losses. Since 2010, the costs of repurchasing mortgage loans that had been sold to U.S. government-sponsored entities ("GSEs"), such as Fannie Mae and Freddie Mac, have been elevated, and there is no assurance that such costs will not continue to be elevated in the future. Accordingly, repurchase or indemnity obligations to the GSEs or to private third-party purchasers could materially and adversely affect the Firm's results of

operations and earnings in the future.

The repurchase liability that the Firm records with respect to its loan repurchase obligations to the GSEs is estimated based on several factors, including the level of current and estimated probable future repurchase demands made by purchasers, the Firm's ability to cure the defects identified in the repurchases demands, the severity of loss upon repurchase or foreclosure, the Firm's potential ability to recover certain losses from third-party originators, and the terms of agreements with certain mortgage insurers and other parties. While the Firm believes that its current repurchase liability reserves are adequate, the factors referred to above are subject to change based on the GSEs' future behavior, the economic environment and other uncertainties. Accordingly, there is no assurance that such reserves will not be increased in the future.

The Firm also faces litigation related to securitizations, primarily related to securitizations not sold to the GSEs. The

Firm separately evaluates its exposure to such litigation in establishing its litigation reserves. While the Firm believes that its current reserves in respect of such litigation matters are adequate, there can be no assurance that such reserves will not need to be increased in the future.

JPMorgan Chase may incur additional costs and expenses in ensuring that it satisfies requirements relating to mortgage servicing and foreclosures.

The Firm has, as described above, entered into the Consent Orders with its banking regulators relating to its residential mortgage servicing, foreclosure and loss-mitigation activities, and agreed to the global settlement with federal and state government agencies relating to the servicing and origination of mortgages. The Firm expects to incur additional costs and expenses in connection with its efforts to enhance its mortgage origination, servicing and foreclosure procedures, including the enhancements required under the Consent Orders and the global settlement. In addition, the GSEs impose compensatory fees on their mortgage servicers, including the Firm, if such servicers are unable to comply with the foreclosure timetables mandated by the GSEs, and such fees may continue to be imposed on the Firm in the future.

JPMorgan Chase's commodities activities are subject to extensive regulation, potential catastrophic events and environmental risks and regulation that may expose the Firm to significant cost and liability.

JPMorgan Chase engages in the storage, transportation, marketing or trading of several commodities, including metals, agricultural products, crude oil, oil products, natural gas, electric power, emission credits, coal, freight, and related products and indices. The Firm is also engaged in power generation and has invested in companies engaged in wind energy and in sourcing, developing and trading emission reduction credits. As a result of all of these activities, the Firm is subject to extensive and evolving energy, commodities, environmental, and other governmental laws and regulations. The Firm expects laws and regulations affecting its commodities activities to expand in scope and complexity, and to restrict some of the Firm's activities, which could result in lower revenues from the Firm's commodities activities. In addition, the Firm may incur substantial costs in complying with current or future laws and regulations, and the failure to comply with these laws and regulations may result in substantial civil and criminal fines and penalties. Furthermore, liability may be incurred without regard to fault under certain environmental laws and regulations for remediation of contaminations.

The Firm's commodities activities also further expose the Firm to the risk of unforeseen and catastrophic events, including natural disasters, leaks, spills, explosions, release of toxic substances, fires, accidents on land and at sea, wars, and terrorist attacks that could result in personal injuries, loss of life, property damage, damage to the Firm's reputation and suspension of operations. The Firm's commodities activities are also subject to disruptions, many

of which are outside of the Firm's control, from the breakdown or failure of power generation equipment, transmission lines or other equipment or processes, and the contractual failure of performance by third-party suppliers or service providers, including the failure to obtain and deliver raw materials necessary for the operation of power generation facilities. The Firm's actions to mitigate its risks related to the above-mentioned considerations may not prove adequate to address every contingency. In addition, insurance covering some of these risks may not be available, and the proceeds, if any, from insurance recovery may not be adequate to cover liabilities with respect to particular incidents. As a result, the Firm's financial condition and results of operations may be adversely affected by such events.

JPMorgan Chase relies on its systems, employees and certain counterparties, and certain failures could materially adversely affect the Firm's operations.

JPMorgan Chase's businesses are dependent on the Firm's ability to process, record and monitor a large number of complex transactions. If the Firm's financial, accounting, or other data processing systems fail or have other significant shortcomings, the Firm could be materially adversely affected. The Firm is similarly dependent on its employees. The Firm could be materially adversely affected if one or more of its employees causes a significant operational breakdown or failure, either as a result of human error or where an individual purposefully sabotages or fraudulently manipulates the Firm's operations or systems. Third parties with which the Firm does business could also be sources of operational risk to the Firm, including with respect to breakdowns or failures of the systems or misconduct by the employees of such parties. In addition, as the Firm changes processes or introduces new products and services, the

Firm may not fully appreciate or identify new operational risks that may arise from such changes. Any of these occurrences could diminish the Firm's ability to operate one or more of its businesses, or result in potential liability to clients, increased operating expenses, higher litigation costs (including fines and sanctions), reputational damage, regulatory intervention or weaker competitive standing, any of which could materially adversely affect the Firm. If personal, confidential or proprietary information of customers or clients in the Firm's possession were to be mishandled or misused, the Firm could suffer significant regulatory consequences, reputational damage and financial loss. Such mishandling or misuse could include circumstances where, for example, such information was erroneously provided to parties who are not permitted to have the information, either through the fault of the Firm's systems, employees, or counterparties, or where such information was intercepted or otherwise inappropriately taken by third parties.

The Firm may be subject to disruptions of its operating systems arising from events that are wholly or partially beyond the Firm's control, which may include, for example, security breaches (as discussed further below); electrical or

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telecommunications outages; failures of computer servers or other damage to the Firm's property or assets; natural disasters; health emergencies or pandemics; or events arising from local or larger scale political events, including terrorist acts. JPMorgan Chase maintains a global resiliency and crisis management program that is intended to ensure that the Firm has the ability to recover its critical business functions and supporting assets, including staff, technology and facilities, in the event of a business interruption. While the Firm believes that its current resiliency plans are both sufficient and adequate, there can be no assurance that such plans will fully mitigate all potential business continuity risks to the Firm. Any failures or disruptions of the Firm's systems or operations could give rise to losses in service to customers and clients, adversely affect the Firm's business and results of operations by subjecting the Firm to losses or liability, or require the Firm to expend significant resources to correct the failure or disruption, as well as by exposing the Firm to litigation, regulatory fines or penalties or losses not covered by insurance.

A breach in the security of JPMorgan Chase's systems could disrupt its businesses, result in the disclosure of confidential information, damage its reputation and create significant financial and legal exposure for the Firm. Although JPMorgan Chase devotes significant resources to maintain and regularly upgrade its systems and processes that are designed to protect the security of the Firm's computer systems, software, networks and other technology assets and the confidentiality, integrity and availability of information belonging to the Firm and its customers, there is no assurance that all of the Firm's security measures will provide absolute security. JPMorgan Chase and other financial services institutions and companies engaged in data processing have reported breaches in the security of their websites or other systems, some of which have involved sophisticated and targeted attacks intended to obtain unauthorized access to confidential information, destroy data, disable or degrade service, or sabotage systems, often through the introduction of computer viruses or malware, cyberattacks and other means. The Firm and several other U.S. financial institutions have also experienced several significant distributed denial-of-service attacks from technically sophisticated and well-resourced third parties which were intended to disrupt consumer online banking services.

Despite the Firm's efforts to ensure the integrity of its systems, it is possible that the Firm may not be able to anticipate or to implement effective preventive measures against all security breaches of these types, especially because the techniques used change frequently or are not recognized until launched, and because security attacks can originate from a wide variety of sources, including third parties outside the Firm such as persons who are involved with organized crime or associated with external service providers or who may be linked to terrorist organizations or hostile foreign governments. Those parties may also

attempt to fraudulently induce employees, customers or other users of the Firm's systems to disclose sensitive information in order to gain access to the Firm's data or that of its customers or clients. These risks may increase in the future as the Firm continues to increase its mobile-payment and other internet-based product offerings and expands its internal usage of web-based products and applications.

A successful penetration or circumvention of the security of the Firm's systems could cause serious negative consequences for the Firm, including significant disruption of the Firm's operations, misappropriation of confidential information of the Firm or that of its customers, or damage to computers or systems of the Firm and those of its customers and counterparties, and could result in violations of applicable privacy and other laws, financial loss to the Firm or to its customers, loss of confidence in the Firm's security measures, customer dissatisfaction, significant litigation exposure, and harm to the Firm's reputation, all of which could have a material adverse effect on the Firm. JPMorgan Chase's acquisitions and the integration of acquired businesses may not result in all of the benefits anticipated.

JPMorgan Chase has in the past and may in the future seek to expand its business by acquiring other businesses. There can be no assurance that the Firm's acquisitions will have the anticipated positive results, including results relating to: the total cost of integration; the time required to complete the integration; the amount of longer-term cost savings; the overall performance of the combined entity; or an improved price for JPMorgan Chase & Co.'s common stock. Integration efforts could divert management attention and resources, which could adversely affect the Firm's operations or results. The Firm cannot provide assurance that any such integration efforts would not result in the occurrence of unanticipated costs or losses.

Acquisitions may also result in business disruptions that cause the Firm to lose customers or cause customers to move their business to competing financial institutions. It is possible that the integration process related to acquisitions could result in the disruption of the Firm's ongoing businesses or inconsistencies in standards, controls, procedures and policies that could adversely affect the Firm's ability to maintain relationships with clients, customers, depositors and other business partners. The loss of key employees in connection with an acquisition could adversely affect the Firm's ability to successfully conduct its business.

#### Risk Management

JPMorgan Chase's framework for managing risks and its risk management procedures and practices may not be effective in mitigating risk and loss to the Firm.

JPMorgan Chase's risk management framework seeks to mitigate risk and loss to the Firm. The Firm has established processes and procedures intended to identify, measure, monitor, report and analyze the types of risk to which the Firm is subject, including liquidity risk, credit risk, market



risk, interest rate risk, country risk, principal risk, operational risk, legal and fiduciary risk, and reputational risk, among others. However, as with any risk management framework, there are inherent limitations to the Firm's risk management strategies because there may exist, or develop in the future, risks that the Firm has not appropriately anticipated or identified. If the Firm's risk management framework proves ineffective, the Firm could suffer unexpected losses and could be materially adversely affected. As the Firm's businesses change and grow and the markets in which they operate continue to evolve, the Firm's risk management framework may not always keep sufficient pace with those changes. As a result, there is the risk that the credit and market risks associated with new products or new business strategies may not be appropriately identified, monitored or managed. In addition, in a difficult or less liquid market environment, the Firm's risk management strategies may not be effective because other market participants may be attempting to use the same or similar strategies to deal with the challenging market conditions. In such circumstances, it may be difficult for the Firm to reduce its risk positions due to the activity of such other market participants.

The Firm's products, including loans, leases, lending commitments, derivatives, trading account assets and assets held-for-sale, as well as cash management and clearing activities, expose the Firm to credit risk. As one of the nation's largest lenders, the Firm has exposures arising from its many different products and counterparties, and the credit quality of the Firm's exposures can have a significant impact on its earnings. The Firm establishes allowances for probable credit losses that are inherent in its credit exposure, including unfunded lending commitments. The Firm also employs stress testing and other techniques to determine the capital and liquidity necessary to protect the Firm in the event of adverse economic or market events. These processes are critical to the Firm's financial results and condition, and require difficult, subjective and complex judgments, including forecasts of how economic conditions might impair the ability of the Firm's borrowers and counterparties to repay their loans or other obligations. As is the case with any such assessments, there is always the chance that the Firm will fail to identify the proper factors or that the Firm will fail to accurately estimate the impact of factors that it identifies.

JPMorgan Chase's market-making businesses may expose the Firm to unexpected market, credit and operational risks that could cause the Firm to suffer unexpected losses. Severe declines in asset values, unanticipated credit events, or unforeseen circumstances that may cause previously uncorrelated factors to become correlated (and vice versa) may create losses resulting from risks not appropriately taken into account in the development, structuring or pricing of a financial instrument such as a derivative. Certain of the Firm's derivative transactions require the physical settlement by delivery of securities, commodities or obligations that the Firm does not own; if the Firm is unable to obtain such securities, commodities or obligations

within the required timeframe for delivery, this could cause the Firm to forfeit payments otherwise due to it and could result in settlement delays, which could damage the Firm's reputation and ability to transact future business. In addition, in situations where trades are not settled or confirmed on a timely basis, the Firm may be subject to heightened credit and operational risk, and in the event of a default, the Firm may be exposed to market and operational losses. In particular, disputes regarding the terms or the settlement procedures of derivative contracts could arise, which could force the Firm to incur unexpected costs, including transaction, legal and litigation costs, and impair the Firm's ability to manage effectively its risk exposure from these products.

Many of the Firm's risk management strategies or techniques have a basis in historical market behavior, and all such strategies and techniques are based to some degree on management's subjective judgment. For example, many models used by the Firm are based on assumptions regarding correlations among prices of various asset classes or other market indicators. In times of market stress, or in the event of other unforeseen circumstances, previously uncorrelated indicators may become correlated, or conversely, previously correlated indicators may make unrelated movements. These sudden market movements or unanticipated or unidentified market or economic movements have in some circumstances limited the effectiveness of the Firm's risk management strategies, causing the Firm to incur losses. The Firm cannot provide assurance that its risk management framework, including the Firm's underlying assumptions or strategies, will at all times be accurate and effective.

In connection with the Firm's internal review of the reported losses in the synthetic credit portfolio managed by CIO, management concluded that during the first quarter of 2012 CIO's risk management had been ineffective in dealing

with the growth in the size and complexity of the portfolio during the first quarter of 2012. Among other matters, the Firm's internal review found that CIO lacked a robust risk committee structure; that CIO's risk limits were insufficiently granular and should have been reassessed in light of the positions being added to the synthetic credit portfolio in the first quarter of 2012; that CIO risk management was insufficiently engaged in the approval and implementation during the first quarter of 2012 of a new CIO Value-at-Risk ("VaR") model related to the portfolio (before that model was discontinued and the previous model was restored); and that there was inadequate escalation to the Firm's management of certain risk issues relating to the portfolio. The Firm has taken steps to correct such lapses, including, among other things, appointing a new Chief Risk Officer for CIO/Treasury/Corporate ("CTC"); adding resources and talent in CIO risk management; instituting new CTC risk committees to improve governance and controls and ensure tighter linkages between CIO, Treasury and other activities in the Corporate sector; and introducing more granular risk limits for CIO.

Part I

In January 2013, JPMorgan Chase & Co. entered into a Consent Order with the Federal Reserve and JPMorgan Chase Bank, N.A. entered into a Consent Order with the OCC relating to the banking regulators' reviews of the CIO matter. These Consent Orders relate to risk management, model governance and other control functions related to CIO and certain other trading activities at the Firm. Many of the actions required by the Consent Orders have already been, or are in the process of being, implemented by the Firm.

While the Firm has taken, and is taking, steps to correct the lapses in the CIO risk management framework, there is no assurance that new or additional lapses in the Firm's risk management framework and governance structure could not occur in the future. Any such lapses or other inadequacies in the design or implementation of the Firm's risk management framework, governance, procedures or practices could, individually or in the aggregate, cause unexpected losses for the Firm, materially and adversely affect the Firm's financial condition and results of operations, require significant resources to remediate any risk management deficiency, attract heightened regulatory scrutiny, expose the Firm to regulatory investigations or legal proceedings, subject the Firm to fines, penalties or judgments, harm the Firm's reputation, or otherwise cause a decline in investor confidence.

Lapses in disclosure controls and procedures or internal control over financial reporting could materially and adversely affect the Firm's operations, profitability or reputation.

The Firm is committed to maintaining high standards of internal control over financial reporting and disclosure controls and procedures. Nevertheless, in a firm as large and complex as JPMorgan Chase, lapses or deficiencies in disclosure controls and procedures or in the Firm's internal control over financial reporting may occur from time to time. On July 13, 2012, the Firm reported that it had determined that a material weakness existed in its internal control over financial reporting at March 31, 2012. This determination related to the valuation control function for the synthetic credit portfolio managed by CIO during the first quarter of 2012. As a result of the material weakness, management also concluded that the Firm's disclosure controls and procedures were not effective at March 31, 2012. Management has taken steps to remediate the internal control deficiency, including enhancing management supervision of valuation matters. The control deficiency was substantially remediated by June 30, 2012, and was closed-out by September 30, 2012.

There can be no assurance that the Firm's disclosure controls and procedures will be effective in the future or that a material weakness or significant deficiency in internal control over financial reporting could not occur again. Any such lapses or deficiencies may materially and adversely affect the Firm's business and results of operations or financial condition, restrict its ability to access the capital markets, require the Firm to expend significant resources to

correct the lapses or deficiencies, expose the Firm to regulatory or legal proceedings, subject it to fines, penalties or judgments, harm the Firm's reputation, or otherwise cause a decline in investor confidence.

Other Risks

The financial services industry is highly competitive, and JPMorgan Chase's inability to compete successfully may adversely affect its results of operations.

JPMorgan Chase operates in a highly competitive environment and the Firm expects competitive conditions to continue to intensify as the financial services industry produces better-capitalized and more geographically diverse companies that are capable of offering a wider array of financial products and services at more competitive prices. Competitors include other banks, brokerage firms, investment banking companies, merchant banks, hedge funds, commodity trading companies, private equity firms, insurance companies, mutual fund companies, credit card companies, mortgage banking companies, trust companies, securities processing companies, automobile financing companies, leasing companies, e-commerce and other Internet-based companies, and a variety of other financial services and advisory companies. Technological advances and the growth of e-commerce have made it possible for non-depository institutions to offer products and services that traditionally were banking products, and for financial institutions and other companies to provide electronic and Internet-based financial solutions, including electronic securities trading. The Firm's businesses generally compete on the basis of the quality and variety of the Firm's products and services, transaction execution, innovation, reputation and price. Ongoing or increased competition in any one or all of these areas may put downward pressure on prices for the Firm's products and services or may cause the Firm to lose market share. Increased competition also may require the Firm to make additional capital investments

in its businesses in order to remain competitive. These investments may increase expense or may require the Firm to extend more of its capital on behalf of clients in order to execute larger, more competitive transactions. The Firm cannot provide assurance that the significant competition in the financial services industry will not materially adversely affect its future results of operations.

Competitors of the Firm's non-U.S. wholesale businesses are typically subject to different, and in some cases, less stringent, legislative and regulatory regimes. For example, the regulatory objectives underlying several provisions of the Dodd-Frank Act, including the prohibition on proprietary trading under the Volcker Rule and the derivatives "push-out" rules, have not been embraced by governments and regulatory agencies outside the United States and may not be implemented into law in most countries. The more restrictive laws and regulations applicable to U.S. financial services institutions, such as JPMorgan Chase, can put the Firm at a competitive disadvantage to its non-U.S. competitors, including

prohibiting the Firm from engaging in certain transactions, making the Firm's pricing of certain transactions more expensive for clients or adversely affecting the Firm's cost structure for providing certain products, all of which can reduce the revenue and profitability of the Firm's wholesale businesses.

JPMorgan Chase's ability to attract and retain qualified employees is critical to the success of its business, and failure to do so may materially adversely affect the Firm's performance.

JPMorgan Chase's employees are the Firm's most important resource, and in many areas of the financial services industry, competition for qualified personnel is intense. The imposition on the Firm or its employees of restrictions on executive compensation may adversely affect the Firm's ability to attract and retain qualified senior management and employees. If the Firm is unable to continue to retain and attract qualified employees, the Firm's performance, including its competitive position, could be materially adversely affected.

JPMorgan Chase's financial statements are based in part on assumptions and estimates which, if incorrect, could cause unexpected losses in the future.

Pursuant to accounting principles generally accepted in the United States, JPMorgan Chase is required to use certain assumptions and estimates in preparing its financial statements, including in determining allowances for credit losses, mortgage repurchase liability and reserves related to litigation, among other items. Certain of the Firm's financial instruments, including trading assets and liabilities, available-for-sale securities, certain loans, MSRs, private equity investments, structured notes and certain repurchase and resale agreements, among other items, require a determination of their fair value in order to prepare the Firm's financial statements. Where quoted market prices are not available, the Firm may make fair value determinations based on internally developed models or other means which ultimately rely to some degree on management estimation and judgment. In addition, sudden illiquidity in markets or declines in prices of certain loans and securities may make it more difficult to value certain balance sheet items, which may lead to the possibility that such valuations will be subject to further change or adjustment. If assumptions or estimates underlying the Firm's financial statements are incorrect, the Firm may experience material losses.

Damage to JPMorgan Chase's reputation could damage its businesses.

Maintaining trust in JPMorgan Chase is critical to the Firm's ability to attract and maintain customers, investors and employees. Damage to the Firm's reputation can therefore cause significant harm to the Firm's business and prospects.

Harm to the Firm's reputation can arise from numerous sources, including, among others, employee misconduct, compliance failures, litigation or regulatory outcomes or governmental investigations. In addition, a failure to deliver appropriate standards of service and quality, or a failure or

perceived failure to treat customers and clients fairly, can result in customer dissatisfaction, litigation and heightened regulatory scrutiny, all of which can lead to lost revenue, higher operating costs and harm to the Firm's reputation. Adverse publicity regarding the Firm, whether or not true, may result in harm to the Firm's prospects. Actions by the financial services industry generally or by certain members of or individuals in the industry can also affect the Firm's reputation. For example, the role played by financial services firms in the financial crisis, including concerns that consumers have been treated unfairly by financial institutions, has damaged the reputation of the industry as a whole. Should any of these or other events or factors that can undermine the Firm's reputation occur, there is no assurance that the additional costs and expenses that the Firm may need to incur to address the issues giving rise to the reputational harm could not adversely affect the Firm's earnings and results of operations.

Management of potential conflicts of interests has become increasingly complex as the Firm continues to expand its business activities through more numerous transactions, obligations and interests with and among the Firm's clients. The failure to adequately address, or the perceived failure to adequately address, conflicts of interest could affect the willingness of clients to deal with the Firm, or give rise to litigation or enforcement actions, as well as cause serious reputational harm to the Firm.

#### ITEM 1B: UNRESOLVED SEC STAFF COMMENTS

None.

#### ITEM 2: PROPERTIES

JPMorgan Chase's headquarters is located in New York City at 270 Park Avenue, a 50-story office building owned by JPMorgan Chase. This location contains approximately 1.3 million square feet of space.

In total, JPMorgan Chase owned or leased approximately 12.0 million square feet of commercial office and retail space in New York City at December 31, 2012. JPMorgan Chase and its subsidiaries also own or lease significant administrative and operational facilities in Chicago, Illinois (3.7 million square feet); Houston and Dallas, Texas (3.7 million square feet); Columbus, Ohio (2.8 million square feet); Phoenix, Arizona (1.4 million square feet); Jersey City, New Jersey (1.0 million square feet); and 5,614 retail branches in 23 states. At December 31, 2012, the Firm occupied approximately 68.9 million total square feet of space in the United States.

At December 31, 2012, the Firm also owned or leased approximately 5.6 million square feet of space in Europe, the Middle East and Africa. In the United Kingdom, at December 31, 2012, JPMorgan Chase owned or leased approximately 4.3 million square feet of office space and owned a 378,000 square-foot operations center. JPMorgan Chase acquired a 999-year leasehold interest at 25 Bank Street in London's Canary Wharf in 2010. 25 Bank Street, with 1.4 million square feet of space, became the new

Parts I and II

European headquarters of the Corporate & Investment Bank in 2012.

In 2008, JPMorgan Chase had acquired a 999-year leasehold interest in land at London's Canary Wharf and had entered into a building agreement to develop the site and construct a European headquarters building. However, with the acquisition of 25 Bank Street, JPMorgan Chase signed an amended building agreement in December 2010 for the continued development of the Canary Wharf site for future use. The amended terms extend the building agreement to October 30, 2016.

JPMorgan Chase and its subsidiaries also occupy offices and other administrative and operational facilities in the Asia/Pacific region, Latin America and North America under ownership and leasehold agreements aggregating approximately 5.4 million square feet of space at December 31, 2012. This includes leases for administrative and operational facilities in India (2.0 million square feet) and the Philippines (1.0 million square feet).

The properties occupied by JPMorgan Chase are used across all of the Firm's business segments and for corporate purposes. JPMorgan Chase continues to evaluate its current and projected space requirements and may determine from time to time that certain of its premises and facilities are no longer necessary for its operations. There is no assurance that the Firm will be able to dispose of any such excess premises or that it will not incur charges in connection with such dispositions. Such disposition costs may be material to the Firm's results of operations in a given period. For a discussion of occupancy expense, see the Consolidated Results of Operations on pages 72–75.

**ITEM 3: LEGAL PROCEEDINGS**

For a description of the Firm's material legal proceedings, see Note 31 on pages 316–325.

**ITEM 4: MINE SAFETY DISCLOSURES**

Not applicable.

**Part II**

**ITEM 5: MARKET FOR REGISTRANT'S COMMON EQUITY, RELATED STOCKHOLDER MATTERS AND ISSUER PURCHASES OF EQUITY SECURITIES**

**Market for registrant's common equity**

The outstanding shares of JPMorgan Chase common stock are listed and traded on the New York Stock Exchange, the London Stock Exchange and the Tokyo Stock Exchange. For the quarterly high and low prices of JPMorgan Chase's common stock for the last two years, see the section entitled "Supplementary information – Selected quarterly financial data (unaudited)" on pages 331–332. For a comparison of the cumulative total return for JPMorgan Chase common stock with the comparable total return of the S&P 500 Index, the KBW Bank Index and the S&P Financial Index over the five-year period ended

December 31, 2012, see "Five-year stock performance," on page 63.

JPMorgan Chase declared and paid quarterly cash dividends on its common stock in the amount of \$0.30 per share for each quarter of 2012, \$0.25 per share for each quarter of 2011 and \$0.05 per share for each quarter of 2010.

The common dividend payout ratio, based on reported net income, was 23% for 2012, 22% for 2011 and 5% for 2010. For a discussion of restrictions on dividend payments, see Note 22 and Note 27 on page 300 and page 306, respectively. At January 31, 2013, there were 217,055 holders of record of JPMorgan Chase common stock. For information regarding securities authorized for issuance under the Firm's employee stock-based compensation plans, see Item 12 on page 26.

**Repurchases under the common equity repurchase program**

On March 13, 2012, the Board of Directors authorized a \$15.0 billion common equity (i.e., common stock and warrants) repurchase program (the "2012 program"), of which up to \$12.0 billion was approved for repurchase in 2012 and up to an additional \$3.0 billion is approved through the end of the first quarter of 2013. During 2012 and 2011, the Firm repurchased (on a trade-date basis) 31 million and 229 million shares of common stock, for \$1.3 billion and \$8.8 billion, respectively. During 2012 and 2011, the Firm repurchased 18 million and 10 million warrants, for \$238 million and \$122 million, respectively. The Firm did not make any repurchases after May 17, 2012. As of December 31, 2012, \$13.4 billion of authorized repurchase capacity remained under the program.

The Firm may, from time to time, enter into written trading plans under Rule 10b5-1 of the Securities Exchange Act of 1934 to facilitate repurchases in accordance with the repurchase program. A Rule 10b5-1 repurchase plan allows the Firm to repurchase its equity during periods when it would not otherwise be repurchasing common equity — for example, during internal trading “black-out periods.” All purchases under a Rule 10b5-1 plan must be made according to a predefined plan established when the Firm is not aware of material nonpublic information.

The authorization to repurchase common equity will be utilized at management’s discretion, and the timing of purchases and the exact amount of common equity that may be repurchased is subject to various factors, including market conditions; legal and regulatory considerations affecting the amount and timing of repurchase activity; the Firm’s capital position (taking into account goodwill and intangibles); internal capital generation; and alternative investment opportunities. The repurchase program does not include specific price targets or timetables; may be executed through open market purchases or privately negotiated transactions, or utilizing Rule 10b5-1 programs; and may be suspended at any time.



Shares repurchased pursuant to the common equity repurchase program during 2012 were as follows.

Year ended December 31, 2012	Common stock		Warrants		Aggregate repurchases of common equity (in millions) <sup>(b)</sup>	Dollar value of remaining authorized repurchase (in millions) <sup>(c)</sup>
	Total shares of common stock repurchased	Average price paid per share of common stock <sup>(b)</sup>	Total warrants repurchased	Average price paid per warrant <sup>(b)</sup>		
Repurchases under the prior \$15.0 billion program <sup>(a)</sup>	2,604,500	\$33.10	—	\$—	\$86	\$6,050 <sup>(d)</sup>
Repurchases under the new \$15.0 billion program	2,867,870	45.29	—	—	130	14,870
First quarter <sup>(a)</sup>	5,472,370	39.49	—	—	216	14,870
Second quarter	28,070,715	42.72	18,471,300	12.90	1,437	13,433
Third quarter	—	—	—	—	—	13,433
October	—	—	—	—	—	13,433
November	—	—	—	—	—	13,433
December	—	—	—	—	—	13,433
Fourth quarter	—	—	—	—	—	13,433
Year-to-date <sup>(a)</sup>	33,543,085	\$42.19	18,471,300	\$12.90	\$1,653	\$13,433

(a) Includes \$86 million of repurchases in December 2011, which settled in early January 2012.

(b) Excludes commissions cost.

(c) The amount authorized by the Board of Directors excludes commissions cost.

(d) The unused portion of the prior \$15.0 billion program was canceled when the \$15.0 billion 2012 program was authorized.

#### Repurchases under the stock-based incentive plans

Participants in the Firm's stock-based incentive plans may have shares of common stock withheld to cover income taxes. Shares withheld to pay income taxes are repurchased pursuant to the terms of the applicable plan and not under the Firm's repurchase program. Shares repurchased pursuant to these plans during 2012, were as follows.

Year ended	Total shares of common stock repurchased	Average price paid per share of common stock
December 31, 2012		
First quarter	406	\$45.81
Second quarter	32	39.72
Third quarter	28	35.98
October	—	—
November	154,125	41.10
December	—	—
Fourth quarter	154,125	41.10
Year-to-date	154,591	\$41.11

#### ITEM 6: SELECTED FINANCIAL DATA

For five-year selected financial data, see "Five-year summary of consolidated financial highlights (unaudited)" on pages 62–63.

#### ITEM 7: MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

Management's discussion and analysis of financial condition and results of operations, entitled "Management's discussion and analysis," appears on pages 64–184. Such information should be read in conjunction with the Consolidated Financial Statements and Notes thereto, which appear on pages 188–330.

**ITEM 7A: QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK**

For a discussion of the quantitative and qualitative disclosures about market risk, see the Market Risk Management section of Management's discussion and analysis on pages 163–169.

**ITEM 8: FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA**

The Consolidated Financial Statements, together with the Notes thereto and the report thereon dated February 28, 2013 of PricewaterhouseCoopers LLP, the Firm's independent registered public accounting firm, appear on pages 187–330.

Supplementary financial data for each full quarter within the two years ended December 31, 2012, are included on pages 331–332 in the table entitled "Selected quarterly financial data (unaudited)." Also included is a "Glossary of terms" on pages 333–335.

Part II

ITEM 9: CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE

None.

ITEM 9A: CONTROLS AND PROCEDURES

As of the end of the period covered by this report, an evaluation was carried out under the supervision and with the participation of the Firm's management, including its Chairman and Chief Executive Officer and its Chief Financial Officer, of the effectiveness of its disclosure controls and procedures (as defined in Rule 13a-15(e) under the Securities Exchange Act of 1934). Based on that evaluation, the Chairman and Chief Executive Officer and the Chief Financial Officer concluded that these disclosure controls and procedures were effective. See Exhibits 31.1 and 31.2 for the Certification statements issued by the Chairman and Chief Executive Officer and Chief Financial Officer. The Firm is committed to maintaining high standards of internal control over financial reporting. Nevertheless, because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. In addition, in a firm as large and complex as JPMorgan Chase, lapses or deficiencies in internal controls may occur from time to time, and there can be no assurance that any such deficiencies will not result in significant deficiencies or material weaknesses in internal controls in the future. For further information, see "Management's report on internal control over financial reporting" on page 186. There was no change in the Firm's internal control over financial reporting (as defined in Rule 13a-15(f) under the Securities Exchange Act of 1934) that occurred during the three months ended December 31, 2012, that has materially affected, or is reasonably likely to materially affect, the Firm's internal control over financial reporting.

ITEM 9B: OTHER INFORMATION

Pursuant to Section 219 of the Iran Threat Reduction and Syria Human Rights Act of 2012, which added Section 13(r) to the Securities Exchange Act of 1934, as amended (the "Exchange Act"), an issuer is required to disclose in its annual or quarterly reports, as applicable, whether it or any of its affiliates knowingly engaged in certain activities, transactions or dealings relating to Iran or with individuals or entities designated pursuant to certain Executive Orders. Disclosure is generally required even where the activities, transactions or dealings were conducted in compliance with applicable law.

Carlson Wagonlit Travel ("CWT"), a business travel management firm in which JPMorgan Chase has invested through its merchant banking activities, may be deemed to be an affiliate of the Firm, as that term is defined in Exchange Act Rule 12b-2. CWT has informed the Firm that, during the year ended December 31, 2012, it booked approximately 30 flights (of the approximately 59 million transactions it booked in 2012) to Iran on Iran Air for passengers, including employees of foreign governments and non-governmental organizations. All of such flights originated outside of the United States from countries that permit travel to Iran, and none of such passengers were persons designated under Executive Orders 13224 or 13382 or were employees of foreign governments that are targets of U.S. sanctions. CWT and the Firm believe that this activity is permissible pursuant to certain exemptions from U.S. sanctions for travel-related transactions under the International Emergency Economic Powers Act, as amended. CWT had approximately \$27,000 in gross revenues attributable to these transactions. CWT has informed the Firm that it intends to continue to engage in this activity so long as such activity is permitted under U.S. law.

## Part III

## ITEM 10: DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE

## Executive officers of the registrant

Name	Age (at December 31, 2012)	Positions and offices
James Dimon	56	Chairman of the Board, Chief Executive Officer and President. Co-Chief Operating Officer since July 2012. He had been Chief Executive Officer of Mortgage Banking from February 2011 until December 2012 and Chief Administrative Officer from 2005 until July 2012.
Frank J. Bisignano	53	Vice Chairman since January 1, 2013. He had been Chief Financial Officer from June 2010 until December 31, 2012, and was head of Investment Banking for the Americas since 2008, prior to which he had served in a number of senior Investment Banking roles, including as head of Global Mergers and Acquisitions.
Douglas L. Braunstein <sup>(a)</sup>	51	Co-Chief Executive Officer of the Corporate & Investment Bank since July 2012. He had been Chief Executive Officer of Treasury & Securities Services (now part of Corporate & Investment Bank) from June 2010 until July 2012, prior to which he had been Chief Financial Officer.
Michael J. Cavanagh	46	General Counsel since February 2007. Prior to joining JPMorgan Chase, he was a partner and co-chair of the Securities Department at the law firm of WilmerHale.
Stephen M. Cutler	51	Head of Human Resources since January 2009. Prior to joining JPMorgan Chase, he had been Global Head of Human Resources at Citigroup, Inc. since 2007 and Head of Human Resources and Corporate Affairs for Citi Markets and Banking business from 1998 until 2007.
John L. Donnelly	56	Chief Executive Officer of Asset Management since September 2009, prior to which she had been Chief Executive Officer of Private Banking.
Mary Callahan Erdoes	45	Chief Risk Officer since January 2012. He had been Chief Risk Officer of the Investment Bank (now part of Corporate & Investment Bank) since 2006.
John J. Hogan <sup>(b)</sup>	46	Chief Financial Officer since January 1, 2013. She had been Chief Financial Officer of the Consumer & Community Banking business ("CCB") and prior to the organization of CCB served since 2009 as Chief Financial Officer for the consumer business unit now part of CCB. She previously had served as Global Controller of the Investment Bank from 2007 to 2009, prior to which she had served in a number of senior financial officer roles.
Marianne Lake <sup>(a)</sup>	43	Chief Executive Officer of Commercial Banking since January 2012. He had been Chief Operating Officer of Commercial Banking since October 2010, prior to which he had been Global Head of Natural Resources in the Investment Bank.
Douglas B. Petno	47	Co-Chief Executive Officer of the Corporate & Investment Bank since July 2012 and Chief Executive Officer of Europe, the Middle East and Africa since June 2011. He had been head or co-head of the Investment Bank Global Fixed Income business (now part of Corporate &
Daniel E. Pinto	50	

Investment Bank) from November 2009 until July 2012. He was Global Head of Emerging Markets from 2006 until 2009, and was also responsible for the Global Credit Trading & Syndicate business from 2008 until 2009.

Gordon A. Smith 54

Chief Executive Officer of Consumer & Community Banking since December 2012 prior to which he had been Co-Chief Executive Officer since July 2012. He had been Chief Executive Officer of Card Services since 2007 and of the Auto Finance and Student Lending businesses since 2011. Prior to joining JPMorgan Chase, he was with American Express Company and was, from 2005 until 2007, president of American Express' Global Commercial Card business.

Matthew E. Zames 42

Co-Chief Operating Officer since July 2012 and head of Mortgage Banking Capital Markets since January 2012. He had been Chief Investment Officer from May until September 2012 and was co-head of the Investment Bank Global Fixed Income business (now part of Corporate & Investment Bank) from November 2009 until May 2012 and co-head of Mortgage Banking Capital Markets from July 2011 until January 2012, prior to which he had served in a number of senior Investment Banking Fixed Income management roles.

On January 1, 2013, Ms. Lake was named Chief Financial Officer and appointed to the Operating Committee. At (a) that date, Mr. Braunstein became Vice Chairman of JPMorgan Chase and retired from the Operating Committee; he is no longer an executive officer of the registrant.

(b) As of February 1, 2013, Mr. Hogan is on a leave of absence.

Unless otherwise noted, during the five fiscal years ended December 31, 2012, all of JPMorgan Chase's above-named executive officers have continuously held senior-level positions with JPMorgan Chase. There are no family relationships among the foregoing executive officers. See also Item 13.

## Parts III and IV

## ITEM 11: EXECUTIVE COMPENSATION

See Item 13.

## ITEM 12: SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS

For security ownership of certain beneficial owners and management, see Item 13 below.

The following table details the total number of shares available for issuance under JPMorgan Chase's employee stock-based incentive plans (including shares available for issuance to nonemployee directors). The Firm is not authorized to grant stock-based incentive awards to nonemployees, other than to nonemployee directors.

December 31, 2012	Number of shares to be issued upon exercise of outstanding options/SARs	Weighted-average exercise price of outstanding options/SARs	Number of shares remaining available for future issuance under stock compensation plans
Plan category			
Employee stock-based incentive plans approved by shareholders	111,710,849	\$ 42.82	283,322,413 <sup>(a)</sup>
Employee stock-based incentive plans not approved by shareholders	4,194,767	32.36	—
Total	115,905,616	\$ 42.44	283,322,413

<sup>(a)</sup> Represents future shares available under the shareholder-approved Long-Term Incentive Plan, as amended and restated effective May 17, 2011.

All future shares will be issued under the shareholder-approved Long-Term Incentive Plan, as amended and restated effective May 17, 2011. For further discussion, see Note 10 on pages 241–243.

## ITEM 13: CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE

Information to be provided in Items 10, 11, 12, 13 and 14 of Form 10-K and not otherwise included herein is incorporated by reference to the Firm's definitive proxy statement for its 2012 Annual Meeting of Stockholders to be held on May 21, 2013, which will be filed with the SEC within 120 days of the end of the Firm's fiscal year ended December 31, 2012.

## ITEM 14: PRINCIPAL ACCOUNTING FEES AND SERVICES

See Item 13.

Part IV

ITEM 15: EXHIBITS, FINANCIAL STATEMENT SCHEDULES

Exhibits, financial statement schedules

- 1 Financial statements  
The Consolidated Financial Statements, the Notes thereto and the report of the Independent Registered Public Accounting Firm thereon listed in Item 8 are set forth commencing on page 187.
- 2 Financial statement schedules
- 3 Exhibits
- 3.1 Restated Certificate of Incorporation of JPMorgan Chase & Co., effective April 5, 2006 (incorporated by reference to Exhibit 3.1 to the Current Report on Form 8-K of JPMorgan Chase & Co. (File No. 1-5805) filed April 7, 2006).
- 3.2 Certificate of Designations of Fixed-to-Floating Rate Non-Cumulative Preferred Stock, Series I (incorporated by reference to Exhibit 3.1 to the Current Report on Form 8-K of JPMorgan Chase & Co. (File No. 1-5805) filed April 24, 2008).

- 3.3 Certificate of Designations of 8.625% Non-Cumulative Preferred Stock, Series J (incorporated by reference to Exhibit 3.1 to the Current Report on Form 8-K/A of JPMorgan Chase & Co. (File No. 1-5805) filed September 17, 2008).
- 3.4 Certificate of Designations of 5.50% Non-Cumulative Preferred Stock, Series O (incorporated by reference to Exhibit 3.1 to the Current Report on Form 8-K of JPMorgan Chase & Co. (File No. 1-5805) filed August 27, 2012).
- 3.5 By-laws of JPMorgan Chase & Co., effective January 19, 2010 (incorporated by reference to Exhibit 3.1 to the Current Report on Form 8-K of JPMorgan Chase & Co. (File No. 1-5805) filed January 25, 2010).
- 4.1 Indenture, dated as of October 21, 2010, between JPMorgan Chase & Co. and Deutsche Bank Trust Company Americas, as Trustee (incorporated by reference to Exhibit 4.1 to the Current Report on Form 8-K of JPMorgan Chase & Co. (File No.1-5805) filed October 21, 2010).
- 4.2 Indenture, dated as of October 21, 2010, between JPMorgan Chase & Co. and U.S. Bank Trust National Association, as Trustee (incorporated by reference to Exhibit 4.2 to the Current Report on Form 8-K of JPMorgan Chase & Co. (File No.1-5805) filed October 21, 2010).
- 4.3 Indenture, dated as of May 25, 2001, between JPMorgan Chase & Co. and Bankers Trust Company (succeeded by Deutsche Bank Trust Company Americas), as Trustee (incorporated by reference to Exhibit 4(a)(1) to the Registration Statement on Form S-3 of JPMorgan Chase & Co. (File No. 333-52826) filed June 13, 2001).
- 4.4 Form of Deposit Agreement (incorporated by reference to Exhibit 4.1 to the Current Report on Form 8-K of JPMorgan Chase & Co. (File No. 1-5805) filed April 24, 2008).
- 4.5 Form of Deposit Agreement (incorporated by reference to Exhibit 4.1 to the Current Report on Form 8-K of JPMorgan Chase & Co. (File No. 1-5805) filed August 21, 2008).
- 4.6 Deposit Agreement, dated August 27, 2012, among JPMorgan Chase & Co., Computershare Shareowner Services LLC, as depositary, and the holders from time to time of Depositary Receipts relating to the 5.50% Non-Cumulative Preferred Stock, Series O (incorporated by reference to Exhibit 4.2 to the Current Report on Form 8-K of JPMorgan Chase & Co. (File No. 1-5805) filed August 27, 2012).
- 4.7 Form of Warrant to purchase common stock (incorporated by reference to Exhibit 4.2 to the Form 8-A of JPMorgan Chase & Co. (File No. 1-5805) filed December 11, 2009).
- Other instruments defining the rights of holders of long-term debt securities of JPMorgan Chase & Co. and its subsidiaries are omitted pursuant to Section (b)(4)(iii)(A) of Item 601 of Regulation S-K. JPMorgan Chase & Co. agrees to furnish copies of these instruments to the SEC upon request.
- 10.1 Deferred Compensation Plan for Non-Employee Directors of JPMorgan Chase & Co., as amended and restated July 2001 and as of December 31, 2004 (incorporated by reference to Exhibit 10.1 to the Annual Report on Form 10-K of JPMorgan Chase & Co. (File No. 1-5805) for the year ended December 31, 2007).<sup>(a)</sup>



- 10.2 2005 Deferred Compensation Plan for Non-Employee Directors of JPMorgan Chase & Co., effective as of January 1, 2005 (incorporated by reference to Exhibit 10.2 to the Annual Report on Form 10-K of JPMorgan Chase & Co. (File No. 1-5805) for the year ended December 31, 2007).<sup>(a)</sup>
- 10.3 Post-Retirement Compensation Plan for Non-Employee Directors of The Chase Manhattan Corporation, as amended and restated, effective May 21, 1996 (incorporated by reference to Exhibit 10.3 to the Annual Report on Form 10-K of JPMorgan Chase & Co. (File No. 1-5805) for the year ended December 31, 2008).<sup>(a)</sup>
- 10.4 2005 Deferred Compensation Program of JPMorgan Chase & Co., restated effective as of December 31, 2008 (incorporated by reference to Exhibit 10.4 to the Annual Report on Form 10-K of JPMorgan Chase & Co. (File No. 1-5805) for the year ended December 31, 2008).<sup>(a)</sup>
- 10.5 JPMorgan Chase & Co. Long-Term Incentive Plan as amended and restated effective May 17, 2011 (incorporated by reference to Appendix C of the Schedule 14A of JPMorgan Chase & Co. (File No. 1-5805) filed April 7, 2011).<sup>(a)</sup>
- 10.6 Key Executive Performance Plan of JPMorgan Chase & Co., as amended and restated effective January 1, 2009 (incorporated by reference to Appendix D of the Schedule 14A of JPMorgan Chase & Co. (File No. 1-5805) filed March 31, 2008).<sup>(a)</sup>
- 10.7 Excess Retirement Plan of JPMorgan Chase & Co., restated and amended as of December 31, 2008, as amended (incorporated by reference to Exhibit 10.7 to the Annual Report on Form 10-K of JPMorgan Chase & Co. (File No. 1-5805) for the year ended December 31, 2009).<sup>(a)</sup>
- 10.8 1995 Stock Incentive Plan of J.P. Morgan & Co. Incorporated and Affiliated Companies, as amended, dated December 11, 1996 (incorporated by reference to Exhibit 10.8 to the Annual Report on Form 10-K of JPMorgan Chase & Co. (File No. 1-5805) for the year ended December 31, 2008).<sup>(a)</sup>

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Part IV

- 10.9 Executive Retirement Plan of JPMorgan Chase & Co., as amended and restated December 31, 2008 (incorporated by reference to Exhibit 10.9 to the Annual Report on Form 10-K of JPMorgan Chase & Co. (File No. 1-5805) for the year ended December 31, 2008).<sup>(a)</sup>
- 10.10 Amendment to Bank One Corporation Director Stock Plan, as amended and restated effective February 1, 2003 (incorporated by reference to Exhibit 10.10 to the Annual Report on Form 10-K of JPMorgan Chase & Co. (File No. 1-5805) for the year ended December 31, 2008).<sup>(a)</sup>
- 10.11 Summary of Bank One Corporation Director Deferred Compensation Plan (incorporated by reference to Exhibit 10.19 to the Annual Report on Form 10-K of JPMorgan Chase & Co. (File No. 1-5805) for the year ended December 31, 2005).<sup>(a)</sup>
- 10.12 Bank One Corporation Stock Performance Plan, as amended and restated effective February 20, 2001 (incorporated by reference to Exhibit 10.12 to the Annual Report on Form 10-K of JPMorgan Chase & Co. (File No. 1-5805) for the year ended December 31, 2008).<sup>(a)</sup>
- 10.13 Bank One Corporation Supplemental Savings and Investment Plan, as amended and restated effective December 31, 2008 (incorporated by reference to Exhibit 10.13 to the Annual Report on Form 10-K of JPMorgan Chase & Co. (File No. 1-5805) for the year ended December 31, 2008).<sup>(a)</sup>
- 10.14 Revised and Restated Banc One Corporation 1989 Stock Incentive Plan, effective January 18, 1989 (incorporated by reference to Exhibit 10.14 to the Annual Report on Form 10-K of JPMorgan Chase & Co. (File No. 1-5805) for the year ended December 31, 2008).<sup>(a)</sup>
- 10.15 Banc One Corporation Revised and Restated 1995 Stock Incentive Plan, effective April 17, 1995 (incorporated by reference to Exhibit 10.15 to the Annual Report on Form 10-K of JPMorgan Chase & Co. (File No. 1-5805) for the year ended December 31, 2008).<sup>(a)</sup>
- 10.16 Form of JPMorgan Chase & Co. Long-Term Incentive Plan Award Agreement of January 22, 2008 stock appreciation rights (incorporated by reference to Exhibit 10.25 to the Annual Report on Form 10-K of JPMorgan Chase & Co. (File No. 1-5805) for the year ended December 31, 2007).<sup>(a)</sup>
- 10.17 Form of JPMorgan Chase & Co. Long-Term Incentive Plan Award Agreement of January 22, 2008 stock appreciation rights for James Dimon (incorporated by reference to Exhibit 10.27 to the Annual Report on Form 10-K of JPMorgan Chase & Co. (File No. 1-5805) for the year ended December 31, 2007).<sup>(a)</sup>
- 10.18 Form of JPMorgan Chase & Co. Long-Term Incentive Plan Terms and Conditions for stock appreciation rights, dated as of January 20, 2009 (incorporated by reference to Exhibit 10.20 to the Annual Report on Form 10-K of JPMorgan Chase & Co. (File No. 1-5805) for the year ended December 31, 2008).<sup>(a)</sup>
- 10.19 Form of JPMorgan Chase & Co. Long-Term Incentive Plan Terms and Conditions for Operating Committee member stock appreciation rights, dated as of January 20, 2009 (incorporated by reference to Exhibit 10.21 to the Annual Report on Form 10-K of JPMorgan

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Chase & Co. (File No. 1-5805) for the year ended December 31, 2008).<sup>(a)</sup>

- 10.20 Form of JPMorgan Chase & Co. Long-Term Incentive Plan Terms and Conditions for Operating Committee member stock appreciation rights, dated as of February 3, 2010 (incorporated by reference to Exhibit 10.23 to the Annual Report on Form 10-K of JPMorgan Chase & Co. (File No. 1-5805) for the year ended December 31, 2009).<sup>(a)</sup>
- 10.21 Forms of JPMorgan Chase & Co. Long-Term Incentive Plan Terms and Conditions for stock appreciation rights and restricted stock units, dated as of January 19, 2011 and February 16, 2011 (incorporated by reference to Exhibit 10.24 to the Annual Report on Form 10-K of JPMorgan Chase & Co. (File No. 1-5805) for the year ended December 31, 2011).<sup>(a)</sup>
- 10.22 Forms of JPMorgan Chase & Co. Long-Term Incentive Plan Terms and Conditions for stock appreciation rights and restricted stock units, dated as of January 18, 2012 (incorporated by reference to Exhibit 10.25 to the Annual Report on Form 10-K of JPMorgan Chase & Co. (File No. 1-5805) for the year ended December 31, 2011).<sup>(a)</sup>
- 10.23 Forms of JPMorgan Chase & Co. Long-Term Incentive Plan Terms and Conditions for stock appreciation rights and restricted stock units for Operating Committee members, dated as of January 17, 2013.<sup>(a)(b)</sup>
- 10.24 Form of JPMorgan Chase & Co. Performance-Based Incentive Compensation Plan, effective as of January 1, 2006, as amended (incorporated by reference to Exhibit 10.27 to the Annual Report on Form 10-K of JPMorgan Chase & Co. (File No. 1-5805) for the year ended December 31, 2009).<sup>(a)</sup>
- 12.1 Computation of ratio of earnings to fixed charges.<sup>(b)</sup>
- 12.2 Computation of ratio of earnings to fixed charges and preferred stock dividend requirements.<sup>(b)</sup>

21	List of subsidiaries of JPMorgan Chase & Co. <sup>(b)</sup>
22.1	Annual Report on Form 11-K of The JPMorgan Chase 401(k) Savings Plan for the year ended December 31, 2012 (to be filed pursuant to Rule 15d-21 under the Securities Exchange Act of 1934).
23	Consent of independent registered public accounting firm. <sup>(b)</sup>
31.1	Certification. <sup>(b)</sup>
31.2	Certification. <sup>(b)</sup>
32	Certification pursuant to Section 906 of the Sarbanes-Oxley Act of 2002. <sup>(c)</sup>
101.INS	XBRL Instance Document. <sup>(b)(d)</sup>
101.SCH	XBRL Taxonomy Extension Schema Document. <sup>(b)</sup>
101.CAL	XBRL Taxonomy Extension Calculation Linkbase Document. <sup>(b)</sup>
101.LAB	XBRL Taxonomy Extension Label Linkbase Document. <sup>(b)</sup>
101.PRE	XBRL Taxonomy Extension Presentation Linkbase Document. <sup>(b)</sup>
101.DEF	XBRL Taxonomy Extension Definition Linkbase Document. <sup>(b)</sup>

(a) This exhibit is a management contract or compensatory plan or arrangement.

(b) Filed herewith.

Furnished herewith. This exhibit shall not be deemed “filed” for purposes of Section 18 of the Securities Exchange Act of 1934, or otherwise subject to the liability of that Section. Such exhibit shall not be deemed incorporated into any filing under the Securities Act of 1933 or the Securities Exchange Act of 1934.

Pursuant to Rule 405 of Regulation S-T, includes the following financial information included in the Firm’s Annual Report on Form 10-K for the year ended December 31, 2012, formatted in XBRL (eXtensible Business Reporting Language) interactive data files: (i) the Consolidated statements of income for the years ended December 31, 2012, 2011 and 2010, (ii) the Consolidated statements of comprehensive income for the years ended December 31, 2012, 2011 and 2010, (iii) the Consolidated balance sheets as of December 31, 2012 and 2011, (iv) the Consolidated statements of changes in stockholders’ equity for the years ended December 31, 2012, 2011 and 2010, (v) the Consolidated statements of cash flows for the years ended December 31, 2012, 2011 and 2010, and (vi) the Notes to consolidated financial statements.

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## Financial

## FIVE-YEAR SUMMARY OF CONSOLIDATED FINANCIAL HIGHLIGHTS

(unaudited)

As of or for the year ended December 31,

(in millions, except per share, ratio and headcount data)

	2012	2011	2010	2009	2008 <sup>(b)</sup>	
Selected income statement data						
Total net revenue	\$97,031	\$97,234	\$102,694	\$100,434	\$67,252	
Total noninterest expense	64,729	62,911	61,196	52,352	43,500	
Pre-provision profit	32,302	34,323	41,498	48,082	23,752	
Provision for credit losses	3,385	7,574	16,639	32,015	19,445	
Provision for credit losses - accounting conformity <sup>(a)</sup>	—	—	—	—	1,534	
Income before income tax expense/(benefit) and extraordinary gain	28,917	26,749	24,859	16,067	2,773	
Income tax expense/(benefit)	7,633	7,773	7,489	4,415	(926)	
Income before extraordinary gain	21,284	18,976	17,370	11,652	3,699	
Extraordinary gain <sup>(b)</sup>	—	—	—	76	1,906	
Net income	\$21,284	\$18,976	\$17,370	\$11,728	\$5,605	
Per common share data						
Basic earnings						
Income before extraordinary gain	\$5.22	\$4.50	\$3.98	\$2.25	\$0.81	
Net income	5.22	4.50	3.98	2.27	1.35	
Diluted earnings <sup>(c)</sup>						
Income before extraordinary gain	\$5.20	\$4.48	\$3.96	\$2.24	\$0.81	
Net income	5.20	4.48	3.96	2.26	1.35	
Cash dividends declared per share	1.20	1.00	0.20	0.20	1.52	
Book value per share	51.27	46.59	43.04	39.88	36.15	
Tangible book value per share <sup>(d)</sup>	38.75	33.69	30.18	27.09	22.52	
Common shares outstanding						
Average: Basic	3,809.4	3,900.4	3,956.3	3,862.8	3,501.1	
Diluted	3,822.2	3,920.3	3,976.9	3,879.7	3,521.8	
Common shares at period-end	3,804.0	3,772.7	3,910.3	3,942.0	3,732.8	
Share price <sup>(e)</sup>						
High	\$46.49	\$48.36	\$48.20	\$47.47	\$50.63	
Low	30.83	27.85	35.16	14.96	19.69	
Close	43.97	33.25	42.42	41.67	31.53	
Market capitalization	167,260	125,442	165,875	164,261	117,695	
Selected ratios						
Return on common equity ("ROE" <sup>g</sup> )						
Income before extraordinary gain	11	% 11	% 10	% 6	% 2	%
Net income	11	11	10	6	4	
Return on tangible common equity ("ROTCE" <sup>g</sup> ) <sup>(d)</sup>						
Income before extraordinary gain	15	15	15	10	4	
Net income	15	15	15	10	6	
Return on assets ("ROA")						
Income before extraordinary gain	0.94	0.86	0.85	0.58	0.21	
Net income	0.94	0.86	0.85	0.58	0.31	
Return on risk-weighted assets <sup>(f)</sup>						
Income before extraordinary gain	1.65	1.58	1.50	0.95	0.32	
Net income	1.65	1.58	1.50	0.95	0.49	
Overhead ratio	67	65	60	52	65	



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Deposits-to-loans ratio	163	156	134	148	135
Tier 1 capital ratio <sup>(g)</sup>	12.6	12.3	12.1	11.1	10.9
Total capital ratio	15.3	15.4	15.5	14.8	14.8
Tier 1 leverage ratio	7.1	6.8	7.0	6.9	6.9
Tier 1 common capital ratio <sup>(h)</sup>	11.0	10.1	9.8	8.8	7.0
Selected balance sheet data (period-end) <sup>(g)</sup>					
Trading assets	\$450,028	\$443,963	\$489,892	\$411,128	\$509,983
Securities	371,152	364,793	316,336	360,390	205,943
Loans	733,796	723,720	692,927	633,458	744,898
Total assets	2,359,141	2,265,792	2,117,605	2,031,989	2,175,052
Deposits	1,193,593	1,127,806	930,369	938,367	1,009,277
Long-term debt	249,024	256,775	270,653	289,165	302,959
Common stockholders' equity	195,011	175,773	168,306	157,213	134,945
Total stockholders' equity	204,069	183,573	176,106	165,365	166,884
Headcount	258,965	260,157	239,831	222,316	224,961
Credit quality metrics					
Allowance for credit losses	\$22,604	\$28,282	\$32,983	\$32,541	\$23,823
Allowance for loan losses to total retained loans	3.02	% 3.84	% 4.71	% 5.04	% 3.18
Allowance for loan losses to retained loans excluding purchased credit-impaired loans <sup>(i)</sup>	2.43	3.35	4.46	5.51	3.62
Nonperforming assets	\$11,734	\$11,315	\$16,682	\$19,948	\$12,780
Net charge-offs	9,063	12,237	23,673	22,965	9,835
Net charge-off rate	1.26	% 1.78	% 3.39	% 3.42	% 1.73

- (a) Results for 2008 included a conforming loan loss provision related to the acquisition of Washington Mutual Bank's ("Washington Mutual") banking operations.

On September 25, 2008, JPMorgan Chase acquired the banking operations of Washington Mutual. The acquisition resulted in negative goodwill, and accordingly, the Firm recorded an extraordinary gain. A preliminary gain of \$1.9 billion was recognized at December 31, 2008. The final total extraordinary gain that resulted from the Washington Mutual transaction was \$2.0 billion.

The calculation of 2009 earnings per share ("EPS") and net income applicable to common equity includes a one-time, noncash reduction of \$1.1 billion, or \$0.27 per share, resulting from repayment of U.S. Troubled Asset Relief Program ("TARP") preferred capital in the second quarter of 2009. Excluding this reduction, the adjusted ROE and ROTCE were 7% and 11%, respectively, for 2009. The Firm views the adjusted ROE and ROTCE, both non-GAAP financial measures, as meaningful because they enable the comparability to prior periods.

Tangible book value per share and ROTCE are non-GAAP financial measures. Tangible book value per share represents the Firm's tangible common equity divided by period-end common shares. ROTCE measures the Firm's annualized earnings as a percentage of tangible common equity. For further discussion of these measures, see Explanation and Reconciliation of the Firm's Use of Non-GAAP Financial Measures on pages 76–77 of this Annual Report.

Share prices shown for JPMorgan Chase's common stock are from the New York Stock Exchange. JPMorgan Chase's common stock is also listed and traded on the London Stock Exchange and the Tokyo Stock Exchange.

Return on Basel I risk-weighted assets is the annualized earnings of the Firm divided by its average risk-weighted assets.

Effective January 1, 2010, the Firm adopted accounting guidance that amended the accounting for the transfer of financial assets and the consolidation of variable interest entities ("VIEs"). Upon adoption of the guidance, the Firm consolidated its Firm-sponsored credit card securitization trusts, Firm-administered multi-seller conduits and certain other consumer loan securitization entities, primarily mortgage-related, adding \$87.7 billion and \$92.2 billion of assets and liabilities, respectively, and decreasing stockholders' equity and the Tier 1 capital ratio by \$4.5 billion and 34 basis points, respectively. The reduction to stockholders' equity was driven by the establishment of an allowance for loan losses of \$7.5 billion (pretax) primarily related to receivables held in credit card securitization trusts that were consolidated at the adoption date.

Basel I Tier 1 common capital ratio ("Tier 1 common ratio") is Tier 1 common capital ("Tier 1 common") divided by risk-weighted assets. The Firm uses Tier 1 common capital along with the other capital measures to assess and monitor its capital position. For further discussion of the Tier 1 common capital ratio, see Regulatory capital on pages 117–120 of this Annual Report.

Excludes the impact of residential real estate purchased credit-impaired ("PCI") loans. For further discussion, see Allowance for credit losses on pages 159–162 of this Annual Report.

#### FIVE-YEAR STOCK PERFORMANCE

The following table and graph compare the five-year cumulative total return for JPMorgan Chase & Co. ("JPMorgan Chase" or the "Firm") common stock with the cumulative return of the S&P 500 Index, the KBW Bank Index and the S&P Financial Index. The S&P 500 Index is a commonly referenced U.S. equity benchmark consisting of leading companies from different economic sectors. The KBW Bank Index seeks to reflect the performance of banks and thrifts that are publicly-traded in the U.S. and is composed of 24 leading national money center and regional banks and thrifts. The S&P Financial Index is an index of 80 financial companies, all of which are components of the S&P 500. The Firm is a component of all three industry indices.

The following table and graph assume simultaneous investments of \$100 on December 31, 2007, in JPMorgan Chase common stock and in each of the above indices. The comparison assumes that all dividends are reinvested.

December 31, (in dollars)	2007	2008	2009	2010	2011	2012
JPMorgan Chase	\$100.00	\$74.87	\$100.59	\$102.91	\$82.36	\$112.15
KBW Bank Index	100.00	52.45	51.53	63.56	48.83	64.97
S&P Financial Index	100.00	44.73	52.44	58.82	48.81	62.92

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S&P 500 Index	100.00	63.00	79.68	91.68	93.61	108.59
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JPMorgan Chase & Co./2012 Annual  
Report

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## Management's discussion and analysis

This section of JPMorgan Chase's Annual Report for the year ended December 31, 2012 ("Annual Report"), provides Management's discussion and analysis ("MD&A") of the financial condition and results of operations of JPMorgan Chase. See the Glossary of Terms on pages 333–335 for definitions of terms used throughout this Annual Report. The MD&A included in this Annual Report contains statements that are forward-looking within the meaning of the Private Securities Litigation Reform Act of 1995. Such statements are based on the current beliefs and expectations of JPMorgan Chase's management and are subject to significant risks and uncertainties. These risks and uncertainties could cause the Firm's actual results to differ materially from those set forth in such forward-looking statements. Certain of such risks and uncertainties are described herein (see Forward-looking Statements on page 185 of this Annual Report) and in JPMorgan Chase's Annual Report on Form 10-K for the year ended December 31, 2012 ("2012 Form 10-K"), in Part I, Item 1A: Risk factors; reference is hereby made to both.

## INTRODUCTION

JPMorgan Chase & Co., a financial holding company incorporated under Delaware law in 1968, is a leading global financial services firm and one of the largest banking institutions in the United States of America ("U.S."), with operations worldwide; the Firm has \$2.4 trillion in assets and \$204.1 billion in stockholders' equity as of December 31, 2012. The Firm is a leader in investment banking, financial services for consumers and small businesses, commercial banking, financial transaction processing, asset management and private equity. Under the J.P. Morgan and Chase brands, the Firm serves millions of customers in the U.S. and many of the world's most prominent corporate, institutional and government clients.

JPMorgan Chase's principal bank subsidiaries are JPMorgan Chase Bank, National Association ("JPMorgan Chase Bank, N.A."), a national bank with U.S. branches in 23 states, and Chase Bank USA, National Association ("Chase Bank USA, N.A."), a national bank that is the Firm's credit card-issuing bank. JPMorgan Chase's principal nonbank subsidiary is J.P. Morgan Securities LLC ("JPMorgan Securities"), the Firm's U.S. investment banking firm. The bank and nonbank subsidiaries of JPMorgan Chase operate nationally as well as through overseas branches and subsidiaries, representative offices and subsidiary foreign banks. One of the Firm's principal operating subsidiaries in the United Kingdom ("U.K.") is J.P. Morgan Securities plc (formerly J.P. Morgan Securities Ltd.), a wholly-owned subsidiary of JPMorgan Chase Bank, N.A.

JPMorgan Chase's activities are organized, for management reporting purposes, into four major reportable business segments, as well as a Corporate/Private Equity segment. The Firm's consumer business is the Consumer & Community Banking segment. The Corporate & Investment Bank, Commercial Banking, and Asset Management segments comprise the Firm's wholesale businesses. A description of the Firm's business segments, and the products and services they provide to their respective client bases, follows.

## Consumer &amp; Community Banking

Consumer & Community Banking ("CCB") serves consumers and businesses through personal service at bank branches and through ATMs, online, mobile and telephone banking. CCB is organized into Consumer & Business Banking, Mortgage Banking (including Mortgage Production, Mortgage Servicing and Real Estate Portfolios) and Card, Merchant Services & Auto ("Card"). Consumer & Business Banking offers deposit and investment products and services to consumers, and lending, deposit, and cash management and payment solutions to small businesses. Mortgage Banking includes mortgage origination and servicing activities, as well as portfolios comprised of residential mortgages and home equity loans, including the purchased credit impaired ("PCI") portfolio acquired in the Washington Mutual transaction. Card issues credit cards to consumers and small businesses, provides payment services to corporate and public sector clients through its commercial card products, offers payment processing services to merchants, and provides auto and student loan services.



### Corporate & Investment Bank

The Corporate & Investment Bank (“CIB”) offers a broad suite of investment banking, market-making, prime brokerage, and treasury and securities products and services to a global client base of corporations, investors, financial institutions, government and municipal entities. Within Banking, the CIB offers a full range of investment banking products and services in all major capital markets, including advising on corporate strategy and structure, capital-raising in equity and debt markets, as well as loan origination and syndication. Also included in Banking is Treasury Services, which includes transaction services, comprised primarily of cash management and liquidity solutions, and trade finance products. The Markets & Investor Services segment of the CIB is a global market-maker in cash securities and derivative instruments, and also offers sophisticated risk management solutions, prime brokerage, and research. Markets & Investor Services also includes the Securities Services business, a leading global custodian which holds, values, clears and services securities, cash and alternative investments for investors and broker-dealers, and manages depositary receipt programs globally.

### Commercial Banking

Commercial Banking (“CB”) delivers extensive industry knowledge, local expertise and dedicated service to U.S. and U.S. multinational clients, including corporations, municipalities, financial institutions and non-profit entities with annual revenue generally ranging from \$20 million to \$2 billion. CB provides financing to real estate investors and owners. Partnering with the Firm’s other businesses, CB provides comprehensive financial solutions, including lending, treasury services, investment banking and asset management to meet its clients’ domestic and international financial needs.

### Asset Management

Asset Management (“AM”), with client assets of \$2.1 trillion, is a global leader in investment and wealth management. AM clients include institutions, high-net-worth individuals and retail investors in every major market throughout the world. AM offers investment management across all major asset classes including equities, fixed income, alternatives and money market funds. AM also offers multi-asset investment management, providing solutions to a broad range of clients’ investment needs. For individual investors, AM also provides retirement products and services, brokerage and banking services including trust and estate, loans, mortgages and deposits. The majority of AM’s client assets are in actively managed portfolios.

## Management's discussion and analysis

## EXECUTIVE OVERVIEW

This executive overview of the MD&A highlights selected information and may not contain all of the information that is important to readers of this Annual Report. For a complete description of events, trends and uncertainties, as well as the capital, liquidity, credit, market, and country risks, and the critical accounting estimates affecting the Firm and its various lines of business, this Annual Report should be read in its entirety.

## Economic environment

The Eurozone crisis was center stage the beginning of the year, with social stresses and fears of breakup of the Euro. However, strong stands by Eurozone states and the European Central Bank ("ECB") helped stabilize the Eurozone later in the year. The ECB's Outright Monetary Transactions ("OMT") program showed its commitment to provide a safety net for European nations. Eurozone member states also took crucial steps toward further fiscal integration by handing over power to the ECB to regulate the largest banks in the Euro area and by passing more budgetary authority to the European Union. Despite the easing of the crisis, the economies of many of the European Union member countries stalled in 2012.

Asia's developing economies continued to expand in 2012, although growth was significantly slower than the previous year, reducing global inflationary pressures.

In the U.S., the economy grew at a modest pace and the unemployment rate declined to a four year low of 7.8% by the end of 2012 as U.S. labor market conditions continued to improve. The U.S. housing market turned the corner during 2012 as the sector continued to show signs of improvement: excess inventories were reduced, prices began to rise and home affordability improved in most areas of the country as household incomes stabilized and mortgage rates declined to historic lows. Homebuilder confidence improved to the highest level in six years and housing starts increased to the highest level in four years during 2012. At the same time, inflation remained below the Board of Governors of the Federal Reserve System's (the "Federal Reserve") 2% long-run goal.

The Federal Reserve maintained the target range for the federal funds rate at zero to one quarter percent and tied the interest rate forecasts to the evolution of the economy, in particular inflation and unemployment rates. Additionally, the Federal Reserve announced a new asset purchase program that would be open-ended and is intended to speed up the pace of the U.S. economic recovery and produce sustained improvement in the labor market.

Financial markets reacted favorably when the U.S. Congress reached an agreement to resolve the so-called "fiscal cliff" by passing the American Taxpayer Relief Act of 2012. This Act made permanent most of the tax cuts initiated in 2001 and 2003 and allowed the tax rate on the top income bracket, which was increased to \$450,000 annually for

joint tax filers, to revert to 39.6% from 35.0%. Spending and debt ceiling issues were postponed into 2013.

Going into 2013, the U.S. economy is likely to be affected by the continuing uncertainty about Europe's financial crisis, the Federal Reserve's monetary policy, and the ongoing fiscal debate over the U.S. debt limit, government spending and taxes.

## Financial performance of JPMorgan Chase

Year ended December 31,

(in millions, except per share data and ratios)

## Selected income statement data

	2012	2011	Change	
Total net revenue	\$97,031	\$97,234	—	%
Total noninterest expense	64,729	62,911	3	
Pre-provision profit	32,302	34,323	(6	)
Provision for credit losses	3,385	7,574	(55	)
Net income	21,284	18,976	12	
Diluted earnings per share	5.20	4.48	16	
Return on common equity	11	% 11	%	
Capital ratios				
Tier 1 capital	12.6	12.3		
Tier 1 common	11.0	10.1		

## Business overview

JPMorgan Chase reported full-year 2012 record net income of \$21.3 billion, or \$5.20 per share, on net revenue of \$97.0 billion. Net income increased by \$2.3 billion, or 12%, compared with net income of \$19.0 billion, or \$4.48 per share, in 2011. ROE for both 2012 and 2011 was 11%.

The increase in net income in 2012 was driven by a lower provision for credit losses, partially offset by higher noninterest expense. Net revenue was flat compared with 2011 as lower principal transactions revenue and lower net interest income were offset by higher mortgage fees and related income, higher other income, and higher securities gains. Principal transactions revenue for 2012 included losses from the synthetic credit portfolio. The increase in noninterest expense was driven by higher compensation expense.

The decline in the provision for credit losses reflected a lower consumer provision as net charge-offs decreased and the related allowance for credit losses was reduced by \$5.5 billion in 2012. The decline in the consumer allowance reflected improved delinquency trends and reduced estimated losses in the real estate and credit card loan portfolios. The wholesale credit environment remained favorable throughout 2012. Firmwide, net charge-offs were \$9.1 billion for the year, down \$3.2 billion, or 26%, from 2011, and nonperforming assets at year-end were \$11.7 billion, up \$419 million, or 4%. The current year included the effect of regulatory guidance implemented during 2012, which resulted in the Firm reporting an additional \$3.0 billion of nonperforming loans at December 31, 2012 (see Consumer, excluding credit card on pages 140–148 of this Annual Report for further information). Before the



impact of these reporting changes, nonperforming assets would have been \$8.7 billion at December 31, 2012. The total firmwide allowance for credit losses was \$22.6 billion, resulting in a loan loss coverage ratio of 2.43% of total loans, excluding the purchased credit-impaired portfolio.

The Firm's 2012 results reflected strong underlying performance across virtually all its businesses, with strong lending and deposit growth. Consumer & Business Banking within Consumer & Community Banking added 106 branches and increased deposits by 11% in 2012. Business Banking loans increased to a record \$18.9 billion, up 7% compared with 2011. Mortgage Banking reported strong production revenue driven by strong originations growth. In Card, Merchant Services & Auto, credit card sales volume (excluding Commercial Card) was up 11% for the year. The Corporate & Investment Bank maintained its #1 ranking in Global Investment Banking Fees and reported record assets under custody of \$18.8 trillion at December 31, 2012. Commercial Banking reported record net revenue of \$6.8 billion and record net income of \$2.6 billion in 2012. Commercial Banking loans increased to a record \$128.2 billion, a 14% increase compared with the prior year. Asset Management reported record revenue in 2012 and achieved its fifteenth consecutive quarter of positive net long-term client flows into assets under management. Asset Management also increased loan balances to a record \$80.2 billion at December 31, 2012.

JPMorgan Chase ended the year with a Basel I Tier 1 common ratio of 11.0%, compared with 10.1% at year-end 2011. The Firm estimated that its Basel III Tier 1 common ratio was approximately 8.7% at December 31, 2012, taking into account the impact of final Basel 2.5 rules and the proposals set forth in the Federal Reserve's Notice of Proposed Rulemaking ("NPR"). Total deposits increased to \$1.2 trillion, up 6% from the prior year. Total stockholders' equity at December 31, 2012, was \$204.1 billion. (The Basel I and III Tier 1 common ratios are non-GAAP financial measures, which the Firm uses along with the other capital measures, to assess and monitor its capital position. For further discussion of the Tier 1 common capital ratios, see Regulatory capital on pages 117–120 of this Annual Report.) During 2012, the Firm worked to help its customers, corporate clients and the communities in which it does business. The Firm provided credit and raised capital of more than \$1.8 trillion for its clients during 2012; this included \$20 billion lent to small businesses and \$85 billion for nearly 1,500 non-profit and government entities, including states, municipalities, hospitals and universities. The Firm also originated more than 920,000 mortgages, and provided credit cards to approximately 6.7 million people. Since the beginning of 2009, the Firm has offered nearly 1.4 million mortgage modifications and of these approximately 610,000 have achieved permanent modifications. In addition, despite the damage and disruption at many of its branches and facilities caused by Superstorm Sandy at

the end of October 2012, the Firm continued to assist customers, clients and borrowers in the affected areas. The Firm continued to dispense cash through ATMs, loan money, provide liquidity to customers, and settle trades, and it waived a number of checking account and loan fees, including late payment fees, for the benefit of its customers.

Consumer & Community Banking net income increased compared to the prior year, reflecting higher net revenue and lower provision for credit losses, partially offset by higher noninterest expense. Net revenue increased, driven by higher noninterest revenue. Net interest income decreased, driven by lower deposit margins and lower loan balances due to net portfolio runoff, largely offset by the impact of higher deposit balances. Noninterest revenue increased, driven by higher mortgage fees and related income, partially offset by lower debit card revenue, reflecting the impact of the Durbin Amendment. The provision for credit losses in 2012 was \$3.8 billion compared with \$7.6 billion in the prior year. The current-year provision reflected a \$5.5 billion reduction in the allowance for loan losses due to improved delinquency trends and lower estimated losses in the mortgage loan and credit card portfolios. The prior-year provision reflected a \$4.2 billion reduction in the allowance for loan losses. Noninterest expense increased in 2012 compared with the prior year, driven by higher production expense reflecting higher volumes, investments in sales force and partially offset by lower marketing expense in Card. Return on equity for the year was 25% on \$43.0 billion of average allocated capital.

Corporate & Investment Bank net income increased in 2012 compared with the prior year, reflecting slightly higher net revenue, lower noninterest expense and a larger benefit from the provision for credit losses. Net revenue for 2012 included a \$930 million loss from debit valuation adjustments ("DVA") on structured notes and derivative liabilities resulting from the tightening of the Firm's credit spreads. The prior year net revenue included a \$1.4 billion gain from DVA. The provision for credit losses was a larger benefit in 2012 compared with the prior year. The current-year

benefit reflected recoveries and a net reduction in the allowance for credit losses both related to the restructuring of certain nonperforming loans, current credit trends and other portfolio activity. Noninterest expense was down slightly driven by lower compensation expense. Return on equity for the year was 18%, or 19% excluding DVA (a non-GAAP financial measure), on \$47.5 billion of average allocated capital.

Commercial Banking reported record net income for 2012, reflecting an increase in net revenue and a decrease in the provision for credit losses, partially offset by higher noninterest expense. Net revenue was a record, driven by higher net interest income and higher noninterest revenue. Net interest income increased, driven by growth in loan and liability balances, partially offset by spread compression on loan and liability products. Noninterest revenue increased

## Management's discussion and analysis

compared with the prior year, largely driven by increased investment banking revenue. Noninterest expense increased, primarily reflecting higher headcount-related expense. Return on equity for the year was 28% on \$9.5 billion of average allocated capital.

Asset Management net income increased in 2012, driven by higher net revenue. Net revenue increased, driven by net inflows to products with higher margins and higher net interest income resulting from higher loan and deposit balances. Noninterest expense was flat compared with the prior year. Return on equity for the year was 24% on \$7.0 billion of average allocated capital.

Corporate/Private Equity reported a net loss in 2012, compared with net income in the prior year driven by losses in Treasury and Chief Investment Office ("CIO"). Treasury and CIO net revenue included \$5.8 billion of principal transactions losses from the synthetic credit portfolio in CIO during the first six months of 2012 and \$449 million of losses during the third quarter of 2012 on the retained index credit derivative positions. During the third quarter, CIO effectively closed out the index credit derivative positions that were retained following the transfer of the remainder of the synthetic credit portfolio to CIB on July 2, 2012. Treasury and CIO net revenue also included securities gains of \$2.0 billion for the year. The current-year net revenue also included \$888 million of extinguishment gains related to the redemption of trust preferred securities. Net interest income was negative in 2012, and significantly lower than the prior year, primarily reflecting the impact of lower portfolio yields and higher deposit balances across the Firm.

Other Corporate reported a net loss in 2012. Noninterest revenue included a benefit of \$1.1 billion as a result of the Washington Mutual bankruptcy settlement and a \$665 million gain for the recovery on a Bear Stearns-related subordinated loan. Noninterest expense included an expense of \$3.7 billion for additional litigation reserves, predominantly for mortgage-related matters. The prior year included expense of \$3.2 billion for additional litigation reserves.

Note: The Firm uses a single U.S.-based, blended marginal tax rate of 38% ("the marginal rate") to report the estimated after-tax effects of each significant item affecting net income. This rate represents the weighted-average marginal tax rate for the U.S. consolidated tax group. The Firm uses this single marginal rate to reflect the tax effects of all significant items because (a) it simplifies the presentation and analysis for management and investors; (b) it has proved to be a reasonable estimate of the marginal tax effects; and (c) often there is uncertainty at the time a significant item is disclosed regarding its ultimate tax outcome.

## 2013 Business outlook

The following forward-looking statements are based on the current beliefs and expectations of JPMorgan Chase's management and are subject to significant risks and uncertainties. These risks and uncertainties could cause the Firm's actual results to differ materially from those set forth in such forward-looking statements. See Forward-Looking Statements on page 185 of this Annual Report and the Risk Factors section on pages 8–21 of the 2012 Form 10-K.

JPMorgan Chase's outlook for the full year 2013 should be viewed against the backdrop of the global and U.S. economies, financial markets activity, the geopolitical environment, the competitive environment, client activity levels, and regulatory and legislative developments in the U.S. and other countries where the Firm does business. Each of these linked factors will affect the performance of the Firm and its lines of business.

In the Consumer & Business Banking business within CCB, the Firm estimates that, given the current low interest rate environment, continued deposit spread compression could negatively impact annual net income by approximately \$400 million in 2013. This decline may be offset by the impact of deposit balance growth, although the exact extent of any such deposit growth cannot be determined at this time.

In the Mortgage Banking business within CCB, management expects to continue to incur elevated default- and foreclosure-related costs, including additional costs associated with the Firm's mortgage servicing processes, particularly its loan modification and foreclosure procedures. In addition, management believes that the high production margins experienced in recent quarters likely peaked in 2012 and will decline over time. Management also expects there will be continued elevated levels of repurchases of mortgages previously sold, predominantly to U.S. government-sponsored entities ("GSEs"). However, based on current trends and estimates, management believes that the existing mortgage repurchase liability is sufficient to cover such losses.

For Real Estate Portfolios within Mortgage Banking, management believes that total quarterly net charge-offs may be approximately \$550 million, subject to economic conditions. If the positive credit trends in the residential real estate portfolio continue or accelerate and economic uncertainty declines, the related allowance for loan losses may be reduced over time. Given management's current estimate of portfolio runoff levels, the residential real estate portfolio is expected to decline by approximately 10% to 15% in 2013 from year-end 2012 levels. The run-off in the residential real estate portfolio can be expected to reduce annual net interest income by approximately \$600 million in 2013. Over time, the reduction in net interest income should be offset by an improvement in credit costs and lower expenses. In Card Services within CCB, the Firm expects that, if current positive credit trends continue, the card-related allowance for loan losses could be reduced by up to \$1 billion over the course of 2013. The currently anticipated results for CCB described above could be adversely affected if economic conditions, including U.S. housing prices or the unemployment rate, do not continue to improve. Management continues to closely monitor the portfolios in these businesses. In Private Equity, within the Corporate/Private Equity segment, earnings will likely continue to be volatile and

influenced by capital markets activity, market levels, the performance of the broader economy and investment-specific issues.

For Treasury and CIO, within the Corporate/Private Equity segment, management expects a quarterly net loss of approximately \$300 million with that amount likely to vary driven by the implied yield curve and management decisions related to the positioning of the investment securities portfolio.

For Other Corporate, within the Corporate/Private Equity segment, management expects quarterly net income, excluding material litigation expense and significant items, if any, to be approximately \$100 million, but this amount is also likely to vary each quarter.

Management expects the Firm's net interest income to be generally flat during 2013, as modest pressure on the net yield on interest-earning assets is expected to be generally offset by anticipated growth in interest-earning assets. The Firm continues to focus on expense discipline and is targeting expense for 2013 to be approximately \$1 billion lower than in 2012 (not taking into account, for such purposes, any expenses in each year related to corporate litigation and foreclosure-related matters).

#### CIO synthetic credit portfolio

On August 9, 2012, the Firm restated its previously-filed interim financial statements for the quarterly period ended March 31, 2012. The restatement related to valuations of certain positions in the synthetic credit portfolio of the Firm's CIO. The restatement had the effect of reducing the Firm's reported net income for the three months ended March 31, 2012, by \$459 million. The restatement had no impact on any of the Firm's Consolidated Financial Statements as of June 30, 2012, and December 31, 2011, or for the three and six months ended June 30, 2012 and 2011. For more information about the restatement and the related valuation matter, see the Firm's Form 10-Q for the quarter ended June 30, 2012, filed on August 9, 2012.

Management also determined that a material weakness existed in the Firm's internal control over financial reporting at March 31, 2012. Management has taken steps to remediate the material weakness, including enhancing management supervision of valuation matters. These remedial steps were substantially implemented by June 30, 2012; however, in accordance with the Firm's internal control compliance program, the material weakness designation could not be closed until the remedial processes were operational for a period of time and successfully tested. The testing was successfully completed during the third quarter of 2012 and the control deficiency was closed at September 30, 2012. For additional information concerning the remedial changes in, and related testing of, the Firm's internal control over financial reporting, see Part I, Item 4: Controls and Procedures in the Firm's Form 10-Q for the quarter ended September 30, 2012, filed on November 8, 2012.

On July 2, 2012, the majority of the synthetic credit portfolio was transferred from the CIO to the Firm's CIB, which has the expertise, trading platforms and market franchise to manage these positions to maximize their economic value. An aggregate position of approximately \$12 billion notional was retained in CIO. By the end of the third quarter of 2012, CIO effectively closed out the index credit derivative positions that had been retained by it following the transfer. CIO incurred losses of \$5.8 billion from the synthetic credit portfolio for the six months ended June 30, 2012, and losses of \$449 million from the retained index credit derivative positions for the three months ended September 30, 2012, which were recorded in the principal transactions revenue line item of the income statement. CIB continues to actively manage and reduce the risks in the remaining synthetic credit portfolio that had been transferred to it on July 2, 2012. This portion of the portfolio experienced modest losses in each of the two quarters of 2012 following the transfer; these losses were included in Fixed Income Markets Revenue for CIB (and also recorded in the principal transactions revenue).

On January 16, 2013, the Firm announced that the Firm's Management Task Force and the independent Review Committee of the Firm's Board of Directors (the "Board Review Committee") had each concluded their reviews relating to the 2012 losses by the CIO and had released their respective reports. The Board Review Committee's Report sets forth recommendations relating to the Board's oversight of the Firm's risk management processes, all of which have been approved by the full Board of Directors and have been, or are in the process of being, implemented.

The Management Task Force Report, in addition to summarizing the key events and setting forth its observations regarding the losses incurred in CIO's synthetic credit portfolio, describes the broad range of remedial measures taken

by the Firm to respond to the lessons it has learned from the CIO events, including:

• revamping the governance, mandate and reporting and control processes of CIO;

• implementing numerous risk management changes, including improvements in model governance and market risk; and

• effecting a series of changes to the Risk function's governance, organizational structure and interaction with the Board.

The Board of Directors formed the Board Review Committee in May 2012 to oversee the scope and work of the Management Task Force review, assess the Firm's risk management processes related to the issues raised in the Management Task Force review, and to report to the Board of Directors on the Review Committee's findings and recommendations. In performing these tasks, the Board Review Committee, with the assistance of its own counsel and expert advisor, conducted an independent review, including analyzing the voluminous documentary record and conducting interviews of Board members and

## Management's discussion and analysis

numerous current and former employees of the Firm. Based on its review, the Board Review Committee concurred in the substance of the Management Task Force Report. The Management Task Force Report and the Board Review Committee Report set out facts that in their view were the most relevant for their respective purposes. Others (including regulators conducting their own investigations) may have a different view of the facts, or may focus on other facts, and may also draw different conclusions regarding the facts and issues.

The Board Review Committee Report recommends a number of enhancements to the Board's own practices to strengthen its oversight of the Firm's risk management processes. The Board Review Committee noted that some of its recommendations were already being followed by the Board or the Risk Policy Committee or have recently been put into effect.

The Board Review Committee's recommendations include:

- better focused and clearer reporting of presentations to the Board's Risk Policy Committee, with particular emphasis on the key risks for each line of business, identification of significant future changes to the business and its risk profile, and adequacy of staffing, technology and other resources;
- clarifying to management the Board's expectations regarding the capabilities, stature, and independence of the Firm's risk management personnel;
- more systematic reporting to the Risk Policy Committee on significant model risk, model approval and model governance, on setting of significant risk limits and responses to significant limit excessions, and with respect to regulatory matters requiring attention;
- further clarification of the Risk Policy Committee's role and responsibilities, and more coordination of matters presented to the Risk Policy Committee and the Audit Committee;
- concurrence by the Risk Policy Committee in the hiring or firing of the Chief Risk Officer and that it be consulted with respect to the setting of such Chief Risk Officer's compensation; and
- staff with appropriate risk expertise be added to the Firm's Internal Audit function and that Internal Audit more systematically include the risk management function in its audits.

The Board of Directors will continue to oversee the Firm's remediation efforts to ensure they are fully implemented. Also, on January 14, 2013, the Firm and JPMorgan Chase Bank, N.A., entered into Consent Orders with, respectively, the Board of Governors of the Federal Reserve System and the Office of the Comptroller of the Currency ("the OCC") that relate to risk management, model governance and other control functions related to CIO and certain other trading activities at the Firm. Many of the actions required by the Consent Orders are consistent with those recommended by the Management Task Force and the Board Review Committee and, as such, a number of them have been, or are in the process of being, implemented. The

Firm is committed to the full remediation of all issues identified in the Consent Orders.

The CIO synthetic credit portfolio losses have resulted in litigation against the Firm, as well as heightened regulatory scrutiny and may lead to additional regulatory or legal proceedings, in addition to the consent orders noted above. Such regulatory and legal proceedings may expose the Firm to fines, penalties, judgments or losses, harm the Firm's reputation or otherwise cause a decline in investor confidence. For a description of the regulatory and legal developments relating to the CIO matters described above, see Note 31 on pages 316–325 of this Annual Report.

### Regulatory developments

JPMorgan Chase is subject to regulation under state and federal laws in the U.S., as well as the applicable laws of each of the various other jurisdictions outside the U.S. in which the Firm does business. The Firm is currently experiencing an unprecedented increase in regulation and supervision, and such changes could have a significant impact on how the Firm conducts business. For example, under the Dodd-Frank Wall Street Reform and Consumer Protection Act (the "Dodd-Frank Act"), U.S. federal banking and other regulatory agencies are instructed to conduct approximately 285 rulemakings and 130 studies and reports. These agencies include the Federal Reserve, the Office of the Comptroller of the Currency (the "OCC"), the Federal Deposit Insurance Corporation (the "FDIC"), the Commodity Futures Trading Commission, the U.S. Securities and Exchange Commission (the "SEC") and the Bureau of Consumer Financial Protection (the "CFPB"). The Firm continues to work diligently in assessing and understanding the implications of the regulatory changes it is facing, and is devoting substantial resources to implementing all the new

regulations while, at the same time, best meeting the needs and expectations of its clients. During 2012, for example, the Firm submitted to the Federal Reserve and the FDIC its “resolution plan” in the event of a material distress or failure, registered several of its subsidiaries with the CFTC as swap dealers, and continued its planning and implementation efforts with respect to new regulations affecting its derivatives, trading and money market mutual funds businesses. The Firm also faces regulatory initiatives relating to its structure, including push-out of certain derivatives activities from its subsidiary banks under Section 716 of the Dodd-Frank Act, a proposed requirement from the U.K. Financial Services Authority (the “FSA”) requiring the Firm to either obtain equal treatment for the U.K. depositors of its U.S. bank who makes deposits in the U.K., or “subsidiarize” in the U.K., and various other proposed U.K. and EU initiatives that could affect its ability to allocate capital and liquidity efficiently among its global operations. Additional efforts are underway to comply with the higher capital requirements of the new Basel Accords (both the “Basel 2.5” requirements effective January 1, 2013 as well as the additional capital requirements of “Basel III”). The Firm is also preparing to comply with Basel III’s new liquidity measures -- the “liquidity coverage ratio” (“LCR”) and the “net stable



funding ratio” (“NSFR”) - which require the Firm to hold specified types of “high quality” liquid assets to meet assumed levels of cash outflows following a stress event. Management’s current objective is for the Firm to reach, by the end of 2013, an estimated Basel III Tier I common ratio of 9.5% (including the impact of the Basel 2.5 rules and the estimated impact of the other applicable requirements set forth in the Federal Reserve’s Advanced NPR issued in June 2012). The Firm is currently targeting reaching a 100% LCR, based on its current understanding of these requirements, by the end of 2013.

Furthermore, the Firm is experiencing heightened scrutiny by its regulators of its compliance with new and existing regulations, including those issued under the Bank Secrecy Act, the Unfair and Deceptive Acts or Practices laws, the Real Estate Settlement Procedures Act (“RESPA”), the Truth in Lending Act, laws governing the Firm’s consumer collections practices and the laws administered by the Office of Foreign Control, among others. The Firm is also under scrutiny by its supervisors with respect to its controls and operational processes, such as those relating to model development, review, governance and approvals. On January 14, 2013, the Firm and three of its subsidiary banks, including JPMorgan Chase Bank, N.A. entered into Consent Orders with the Federal Reserve and the OCC relating principally to the Firm’s and such banks’ BSA/AML policies and procedures. Also on January 14, 2013, the Firm and JPMorgan Chase Bank, N.A. entered into Consent Orders arising out of their reviews of the Firm’s Chief Investment Office. These latter Consent Orders relate to risk management, model governance and other control functions related to CIO and certain other trading activities at the Firm. The Firm expects that its banking supervisors will in the future continue to take more formal enforcement actions against the Firm rather than issuing informal supervisory actions or criticisms.

While the effect of the changes in law and the heightened scrutiny of its regulators is likely to result in additional costs, the Firm cannot, given the current status of regulatory and supervisory developments, quantify the possible effects on its business and operations of all the significant changes that are currently underway. For further discussion of regulatory developments, see Supervision and regulation on pages 1–8 and Risk factors on pages 8–21.

On January 7, 2013, the Firm submitted its capital plan to the Federal Reserve under the Federal Reserve’s 2013 Comprehensive Capital Analysis and Review (“CCAR”) process. The Firm’s plan relates to the last three quarters of 2013 and the first quarter of 2014 (that is, the 2013 CCAR capital plan relates to dividends to be declared commencing in June 2013 and payable in July 2013, and to common equity repurchases and other capital actions commencing April 1, 2013). The Firm expects to receive the Federal Reserve’s final response to its plan no later than March 14, 2013. With respect to the Firm’s 2012 CCAR capital plan, the Firm expects that its Board of Directors will declare the regular quarterly common stock dividend of \$0.30 per share for the 2013 first quarter at its Board meeting to be

held on March 19, 2013. In addition, pursuant to a non-objection received from the Federal Reserve on November 5, 2012 with respect to the 2012 capital plan it resubmitted in August 2012, the Firm is authorized to repurchase up to \$3.0 billion of common equity in the first quarter of 2013. The timing and exact amount of any common equity to be repurchased under the program will depend on various factors, including market conditions; the Firm’s capital position; organic and other investment opportunities, and legal and regulatory considerations, among other factors. For more information, see Capital management on pages 116–122.

#### Business events

##### Superstorm Sandy

On October 29, 2012, the mid-Atlantic and Northeast regions of the U.S. were affected by Superstorm Sandy, which caused major flooding and wind damage and resulted in major disruptions to individuals and businesses and significant damage to homes and communities in the affected regions. Despite the damage and disruption to many of its branches and facilities, the Firm has been assisting its customers, clients and borrowers in the affected areas. The Firm has continued to dispense cash via ATMs and branches, loan money, provide liquidity to customers, and settle trades, and it waived a number of checking account and loan fees, including late payment fees. Superstorm Sandy did not have a material impact on the 2012 financial results of the Firm and the Firm does not anticipate total losses due to the storm will be material.

##### Subsequent events

Mortgage foreclosure settlement agreement with the Office of the Comptroller of the Currency and the Board of Governors of the Federal Reserve System

On January 7, 2013, the Firm announced that it and a number of other financial institutions entered into a settlement agreement with the Office of the Comptroller of the Currency and the Board of Governors of the Federal Reserve System providing for the termination of the independent foreclosure review programs (the “Independent Foreclosure Review”). Under this settlement, the Firm will make a cash payment of \$753 million into a settlement fund for distribution to qualified borrowers. The Firm has also committed an additional \$1.2 billion to foreclosure prevention actions, which will be fulfilled through credits given to the Firm for modifications, short sales and other specified types of borrower relief. Foreclosure prevention actions that earn credit under the Independent Foreclosure Review settlement are in addition to actions taken by the Firm to earn credit under the global settlement entered into by the Firm with state and federal agencies. The estimated impact of the foreclosure prevention actions required under the Independent Foreclosure Review settlement have been considered in the Firm’s allowance for loan losses. The Firm recognized a pretax charge of approximately \$700 million in the fourth quarter of 2012 related to the Independent Foreclosure Review settlement.

## Management's discussion and analysis

## CONSOLIDATED RESULTS OF OPERATIONS

The following section provides a comparative discussion of JPMorgan Chase's Consolidated Results of Operations on a reported basis for the three-year period ended December 31, 2012. Factors that relate primarily to a single business segment are discussed in more detail within that business segment. For a discussion of the Critical Accounting Estimates Used by the Firm that affect the Consolidated Results of Operations, see pages 178–182 of this Annual Report.

## Revenue

Year ended December 31,

(in millions)	2012	2011	2010
Investment banking fees	\$5,808	\$5,911	\$6,190
Principal transactions	5,536	10,005	10,894
Lending- and deposit-related fees	6,196	6,458	6,340
Asset management, administration and commissions	13,868	14,094	13,499
Securities gains	2,110	1,593	2,965
Mortgage fees and related income	8,687	2,721	3,870
Card income	5,658	6,158	5,891
Other income <sup>(a)</sup>	4,258	2,605	2,044
Noninterest revenue	52,121	49,545	51,693
Net interest income	44,910	47,689	51,001
Total net revenue	\$97,031	\$97,234	\$102,694

<sup>(a)</sup> Included operating lease income of \$1.3 billion, \$1.2 billion and \$971 million for the years ended December 31, 2012, 2011 and 2010, respectively.

## 2012 compared with 2011

Total net revenue for 2012 was \$97.0 billion, down slightly from 2011. Results for 2012 were driven by lower principal transactions revenue from losses incurred by CIO, and lower net interest income. These items were predominantly offset by higher mortgage fees and related income in CCB and higher other income in Corporate/Private Equity.

Investment banking fees decreased slightly from 2011, reflecting lower advisory fees on lower industry-wide volumes, and to a lesser extent, slightly lower equity underwriting fees on industry-wide volumes that were flat from the prior year. These declines were predominantly offset by record debt underwriting fees, driven by favorable market conditions and the impact of continued low interest rates. For additional information on investment banking fees, which are primarily recorded in CIB, see CIB segment results pages 92–95 and Note 7 on pages 228–229 of this Annual Report.

Principal transactions revenue, which consists of revenue primarily from the Firm's market-making and private equity investing activities, decreased compared with 2011, predominantly due to \$5.8 billion of losses incurred by CIO from the synthetic credit portfolio for the six months ended June 30, 2012, and \$449 million of losses incurred by CIO from the retained index credit derivative positions for the

three months ended September 30, 2012; and additional modest losses incurred by CIB from the synthetic credit portfolio in each of the third and fourth quarters of 2012.

Principal transaction revenue also included a \$930 million loss in 2012, compared with a \$1.4 billion gain in 2011, from DVA on structured notes and derivative liabilities, resulting from the tightening of the Firm's credit spreads. These declines were partially offset by higher market-making revenue in CIB, driven by strong client revenue and higher revenue in rates-related products, as well as a \$665 million gain recognized in Other Corporate associated with the recovery on a Bear Stearns-related subordinated loan. Private equity gains decreased in 2012, predominantly due to lower unrealized and realized gains on private investments, partially offset by higher unrealized gains on public securities. For additional information on principal transactions revenue, see CIB and Corporate/Private Equity

segment results on pages 92–95 and 102–104, respectively, and Note 7 on pages 228–229 of this Annual Report. Lending- and deposit-related fees decreased in 2012 compared with the prior year. The decrease predominantly reflected lower lending-related fees in CIB and lower deposit-related fees in CCB. For additional information on lending- and deposit-related fees, which are mostly recorded in CCB, CIB and CB, see the segment results for CCB on pages 80–91, CIB on pages 92–95 and CB on pages 96–98 of this Annual Report.

Asset management, administration and commissions revenue decreased from 2011. The decrease was largely driven by lower brokerage commissions in CIB. This decrease was largely offset by higher asset management fees in AM driven by net client inflows, the effect of higher market levels, and higher performance fees; and higher investment service fees in CCB, as a result of growth in branch sales of investment products. For additional information on these fees and commissions, see the segment discussions for CIB on pages 92–95, CCB on pages 80–91, AM on pages 99–101, and Note 7 on pages 228–229 of this Annual Report.

Securities gains increased, compared with the 2011 level, reflecting the results of repositioning the CIO available-for-sale (“AFS”) securities portfolio. For additional information on securities gains, which are mostly recorded in the Firm’s Corporate/Private Equity segment, see the Corporate/Private Equity segment discussion on pages 102–104, and Note 12 on pages 244–248 of this Annual Report.

Mortgage fees and related income increased significantly in 2012 compared with 2011. The increase resulted from higher production revenue, reflecting wider margins driven by favorable market conditions; and higher volumes due to historically low interest rates and the Home Affordable Refinance Programs (“HARP”). The increase also resulted from a favorable swing in risk management results related

to mortgage servicing rights (“MSR”), which was a gain of \$619 million in 2012, compared with a loss of \$1.6 billion in 2011. For additional information on mortgage fees and related income, which is recorded predominantly in CCB, see CCB’s Mortgage Production and Mortgage Servicing discussion on pages 85–87, and Note 17 on pages 291–295 of this Annual Report.

Card income decreased during 2012, driven by lower debit card revenue, reflecting the impact of the Durbin Amendment; and to a lesser extent, higher amortization of loan origination costs. The decrease in credit card income was offset partially by higher net interchange income associated with growth in credit card sales volume, and higher merchant servicing revenue. For additional information on credit card income, see the CCB segment results on pages 80–91 of this Annual Report.

Other income increased in 2012 compared with the prior year, largely due to a \$1.1 billion benefit from the Washington Mutual bankruptcy settlement, and \$888 million of extinguishment gains in Corporate/Private Equity related to the redemption of trust preferred securities (“TruPS”). The extinguishment gains were related to adjustments applied to the cost basis of the TruPS during the period they were in a qualified hedge accounting relationship. These items were offset partially by the absence of a prior-year gain on the sale of an investment in AM.

Net interest income decreased in 2012 compared with the prior year, predominantly reflecting the impact of lower average trading asset balances, the runoff of higher-yielding loans, faster prepayment of mortgage-backed securities, limited reinvestment opportunities, as well as the impact of lower interest rates across the Firm’s interest-earning assets. The decrease in net interest income was partially offset by lower deposit and other borrowing costs. The Firm’s average interest-earning assets were \$1.8 trillion for 2012, and the net yield on those assets, on a fully taxable-equivalent (“FTE”) basis, was 2.48%, a decrease of 26 basis points from 2011.

2011 compared with 2010

Total net revenue for 2011 was \$97.2 billion, a decrease of \$5.5 billion, or 5%, from 2010. Results for 2011 were driven by lower net interest income in several businesses, lower securities gains in Corporate/Private Equity, lower mortgage fees and related income in CCB, and lower principal transactions revenue in Corporate/Private Equity. These declines were partially offset by higher asset management fees, largely in AM.

Investment banking fees decreased from 2010, predominantly due to declines in equity and debt underwriting fees. The impact from lower industry-wide volumes in the second half of 2011 more than offset the Firm’s record level of debt underwriting fees in the first six months of the year. Advisory fees increased for the year, reflecting higher industry-wide completed M&A volumes relative to the 2010 level.

Principal transactions revenue decreased compared with 2010. This was driven by lower trading revenue and lower private equity gains. Trading revenue included a \$1.4 billion gain from DVA on structured notes and derivative liabilities, resulting from the widening of the Firm’s credit spreads; this was partially offset by a \$769 million loss, net of hedges, from CVA on derivative assets in CIB’s credit portfolio, due to the widening of credit spreads related to the Firm’s counterparties. The prior year included a \$509 million gain from DVA, partially offset by a \$403 million loss, net of hedges, from CVA. Excluding DVA and CVA, lower trading revenue reflected the impact of challenging market conditions on Corporate and CIB during the second half of 2011. Lower private equity gains were primarily due to net write-downs on privately-held investments and the absence of prior-year gains from sales in the Private Equity portfolio.

Lending- and deposit-related fees increased modestly in 2011 compared with the prior year. The increase was primarily driven by the introduction of a new checking account product offering by CCB in the first quarter of 2011, and the subsequent conversion of certain existing accounts into the new product. The increase was offset partly by the impact of regulatory and policy changes affecting nonsufficient fund/overdraft fees in CCB.

Asset management, administration and commissions revenue increased from 2010, reflecting higher asset management fees in AM and CCB, driven by net inflows to products with higher margins and the effect of higher market levels; and higher administration fees in CIB, reflecting net inflows of assets under custody.

Securities gains decreased, compared with the 2010 level, primarily due to the repositioning of the AFS portfolio in response to changes in the current market environment and to rebalancing exposures.

Mortgage fees and related income decreased in 2011 compared with 2010, reflecting a MSR risk management loss of \$1.6 billion for 2011, compared with income of \$1.1 billion for 2010, largely offset by lower repurchase losses in 2011. The \$1.6 billion loss was driven by a \$7.1 billion loss due to a decrease in the fair value of the mortgage servicing rights (“MSR”) asset, which was predominantly offset by a \$5.6 billion gain on the derivatives used to hedge the MSR asset. For additional information on repurchase losses, see the Mortgage repurchase liability discussion on pages 111–115 and Note 29 on pages 308–315 of this Annual Report.

Card income increased during 2011, largely reflecting higher net interchange income associated with higher customer transaction volume on credit and debit cards, as well as lower partner revenue-sharing due to the impact of the Kohl’s portfolio sale. These increases were partially offset by lower revenue from fee-based products, as well as the impact of the Durbin Amendment.

Other income increased in 2011, driven by valuation adjustments on certain assets and incremental revenue from recent acquisitions in CIB, and higher auto operating lease income in CCB, resulting from growth in lease volume.

## Management's discussion and analysis

Also contributing to the increase was a gain on the sale of an investment in AM.

Net interest income decreased in 2011 compared with the prior year, driven by lower average loan balances and yields in CCB, reflecting the expected runoff of credit card balances and residential real estate loans; lower fees on credit card receivables, reflecting the impact of legislative changes; higher average interest-bearing deposit balances and related yields; and lower yields on securities, reflecting portfolio repositioning in anticipation of an increasing interest rate environment. The decrease was offset partially by lower revenue reversals associated with lower credit card charge-offs, and higher trading asset balances. The Firm's average interest-earning assets were \$1.8 trillion for the 2011 full year, and the net yield on those assets, on a FTE basis, was 2.74%, a decrease of 32 basis points from 2010. For further information on the impact of the legislative changes on the Consolidated Statements of Income, see CCB discussion on credit card legislation on page 89 of this Annual Report.

## Provision for credit losses

Year ended December 31,

(in millions)	2012	2011	2010
Consumer, excluding credit card	\$302	\$4,672	\$9,452
Credit card	3,444	2,925	8,037
Total consumer	3,746	7,597	17,489
Wholesale	(361	) (23	) (850
Total provision for credit losses	\$3,385	\$7,574	\$16,639

2012 compared with 2011

The provision for credit losses decreased by \$4.2 billion from 2011. The decrease was driven by a lower provision for consumer, excluding credit card loans, which reflected a reduction in the allowance for loan losses, due primarily to lower estimated losses in the non-PCI residential real estate portfolio as delinquency trends improved, partially offset by the impact of charge-offs of Chapter 7 loans. A higher level of recoveries and lower charge-offs in the wholesale provision also contributed to the decrease. These items were partially offset by a higher provision for credit card loans, largely due to a smaller reduction in the allowance for loan losses in 2012 compared with the prior year. For a more detailed discussion of the loan portfolio and the allowance for credit losses, see the segment discussions for CCB on pages 80–91, CIB on pages 92–95 and CB on pages 96–98, and Allowance For Credit Losses on pages 159–162 of this Annual Report.

2011 compared with 2010

The provision for credit losses declined by \$9.1 billion from 2010. The consumer, excluding credit card, provision was down, reflecting improved delinquency and charge-off trends across most portfolios, partially offset by an increase of \$770 million, reflecting additional impairment of the Washington Mutual PCI loans portfolio. The credit card provision was down, driven primarily by improved

delinquency trends and net credit losses. The benefit from the wholesale provision was lower in 2011 than in 2010, primarily reflecting loan growth and other portfolio activity.

## Noninterest expense

Year ended December 31,

(in millions)	2012	2011	2010
Compensation expense	\$30,585	\$29,037	\$28,124
Noncompensation expense:			
Occupancy	3,925	3,895	3,681
Technology, communications and equipment	5,224	4,947	4,684
Professional and outside services	7,429	7,482	6,767
Marketing	2,577	3,143	2,446
Other <sup>(a)(b)</sup>	14,032	13,559	14,558
Amortization of intangibles	957	848	936
Total noncompensation expense	34,144	33,874	33,072
Total noninterest expense	\$64,729	\$62,911	\$61,196

(a) Included litigation expense of \$5.0 billion, \$4.9 billion and \$7.4 billion for the years ended December 31, 2012, 2011 and 2010, respectively.

(b) Included FDIC-related expense of \$1.7 billion, \$1.5 billion and \$899 million for the years ended December 31, 2012, 2011 and 2010, respectively.

2012 compared with 2011

Total noninterest expense for 2012 was \$64.7 billion, up by \$1.8 billion, or 3%, from 2011. Compensation expense drove the increase from the prior year.

Compensation expense increased from the prior year, predominantly due to investments in the businesses, including the sales force in CCB and bankers in the other businesses, partially offset by lower compensation expense in CIB. Noncompensation expense for 2012 increased from the prior year, reflecting continued investments in the businesses, including branch builds in CCB; higher expense related to growth in business volume in CIB and CCB; higher regulatory deposit insurance assessments; expenses related to exiting a non-core product and writing-off intangible assets in CCB; and higher litigation expense in Corporate/Private Equity. These increases were partially offset by lower litigation expense in AM and CCB (including the Independent Foreclosure Review settlement) and lower marketing expense in CCB. For a further discussion of litigation expense, see Note 31 on pages 316–325 of this Annual Report. For a discussion of amortization of intangibles, refer to Note 17 on pages 291–295 of this Annual Report.



## 2011 compared with 2010

Total noninterest expense for 2011 was \$62.9 billion, up by \$1.7 billion, or 3%, from 2010. Both compensation and noncompensation expense contributed to the increase.

Compensation expense increased from the prior year, due to investments in branch and mortgage production sales and support staff in CCB and increased headcount in AM, largely offset by lower performance-based compensation expense and the absence of the 2010 U.K. Bank Payroll Tax in CIB.

The increase in noncompensation expense in 2011 was due to elevated foreclosure- and default-related costs in CCB, including \$1.7 billion of expense for fees and assessments, as well as other costs of foreclosure-related matters, higher marketing expense in CCB, higher FDIC assessments across businesses, non-client-related litigation expense in AM, and the impact of continued investments in the businesses, including new branches in CCB. These were offset partially by lower litigation expense in 2011 in Corporate and CIB. Effective April 1, 2011, the FDIC changed its methodology for calculating the deposit insurance assessment rate for large banks. The new rule changed the assessment base from insured deposits to average consolidated total assets less average tangible equity, and changed the assessment rate calculation.

## Income tax expense

Year ended December 31,

(in millions, except rate)

	2012	2011	2010		
Income before income tax expense	\$28,917	\$26,749	\$24,859		
Income tax expense	7,633	7,773	7,489		
Effective tax rate	26.4	% 29.1	% 30.1		%

## 2012 compared with 2011

The decrease in the effective tax rate compared with the prior year was largely the result of changes in the proportion of income subject to U.S. federal and state and local taxes, as well as higher tax benefits associated with tax audits and tax-advantaged investments. This was partially offset by higher reported pretax income and lower benefits associated with the disposition of certain investments. The current and prior periods include deferred tax benefits associated with state and local income taxes. For additional information on income taxes, see Critical Accounting Estimates Used by the Firm on pages 178–182 and Note 26 on pages 303–305 of this Annual Report.

## 2011 compared with 2010

The decrease in the effective tax rate compared with the prior year was predominantly the result of tax benefits associated with U.S. state and local income taxes. This was partially offset by higher reported pretax income and changes in the proportion of income subject to U.S. federal tax. In addition, the current year included tax benefits associated with the disposition of certain investments; the prior year included tax benefits associated with the resolution of tax audits.

## Management's discussion and analysis

## EXPLANATION AND RECONCILIATION OF THE FIRM'S USE OF NON-GAAP FINANCIAL MEASURES

The Firm prepares its consolidated financial statements using accounting principles generally accepted in the U.S. ("U.S. GAAP"); these financial statements appear on pages 188–192 of this Annual Report. That presentation, which is referred to as "reported" basis, provides the reader with an understanding of the Firm's results that can be tracked consistently from year to year and enables a comparison of the Firm's performance with other companies' U.S. GAAP financial statements.

In addition to analyzing the Firm's results on a reported basis, management reviews the Firm's results and the results of the lines of business on a "managed" basis, which is a non-GAAP financial measure. The Firm's definition of managed basis starts with the reported U.S. GAAP results and includes certain reclassifications to present total net revenue for the Firm (and each of the business segments) on a FTE basis. Accordingly, revenue from investments that receive tax credits and tax-exempt securities is presented in

the managed results on a basis comparable to taxable investments and securities. This non-GAAP financial measure allows management to assess the comparability of revenue arising from both taxable and tax-exempt sources. The corresponding income tax impact related to tax-exempt items is recorded within income tax expense. These adjustments have no impact on net income as reported by the Firm as a whole or by the lines of business.

Management also uses certain non-GAAP financial measures at the business-segment level, because it believes these other non-GAAP financial measures provide information to investors about the underlying operational performance and trends of the particular business segment and, therefore, facilitate a comparison of the business segment with the performance of its competitors. Non-GAAP financial measures used by the Firm may not be comparable to similarly named non-GAAP financial measures used by other companies.

The following summary table provides a reconciliation from the Firm's reported U.S. GAAP results to managed basis.

Year ended December 31, (in millions, except ratios)	2012			2011			2010			
	Reported Results	Fully tax-equivalent adjustments <sup>(a)</sup>	Managed basis	Reported Results	Fully tax-equivalent adjustments <sup>(a)</sup>	Managed basis	Reported Results	Fully tax-equivalent adjustments <sup>(a)</sup>	Managed basis	
Other income	\$4,258	\$ 2,116	\$6,374	\$2,605	\$ 2,003	\$4,608	\$2,044	\$ 1,745	\$3,789	
Total noninterest revenue	52,121	2,116	54,237	49,545	2,003	51,548	51,693	1,745	53,438	
Net interest income	44,910	743	45,653	47,689	530	48,219	51,001	403	51,404	
Total net revenue	97,031	2,859	99,890	97,234	2,533	99,767	102,694	2,148	104,842	
Pre-provision profit	32,302	2,859	35,161	34,323	2,533	36,856	41,498	2,148	43,646	
Income before income tax expense	28,917	2,859	31,776	26,749	2,533	29,282	24,859	2,148	27,007	
Income tax expense	7,633	2,859	10,492	7,773	2,533	10,306	7,489	2,148	9,637	
Overhead ratio	67	% NM	65	% 65	% NM	63	% 60	% NM	58	%

(a) Predominantly recognized in CIB and CB business segments and Corporate/Private Equity.

Tangible common equity ("TCE"), ROTCE, tangible book value per share ("TBVS"), and Tier 1 common under Basel I and III rules are each non-GAAP financial measures. TCE represents the Firm's common stockholders' equity (i.e., total stockholders' equity less preferred stock) less goodwill and identifiable intangible assets (other than MSRs), net of related deferred tax liabilities. ROTCE measures the Firm's earnings as a percentage of TCE. TBVS represents the Firm's tangible common equity divided by period-end common shares. Tier 1 common under Basel I and III rules are

used by management, along with other capital measures, to assess and monitor the Firm's capital position. TCE, ROTCE, and TBVS are meaningful to the Firm, as well as analysts and investors, in assessing the Firm's use of equity. For additional information on Tier 1 common under Basel I and III, see Regulatory capital on pages 117–120 of this Annual Report. All of the aforementioned measures are useful to the Firm, as well as analysts and investors, in facilitating comparison of the Firm with competitors.

Calculation of certain U.S. GAAP and non-GAAP metrics

The table below reflects the formulas used to calculate both the following U.S. GAAP and non-GAAP measures.

Return on common equity

Net income\* / Average common stockholders' equity

Return on tangible common equity<sup>(a)</sup>

Net income\* / Average tangible common equity

Return on assets

Reported net income / Total average assets

Return on risk-weighted assets

Annualized earnings / Average risk-weighted assets

Overhead ratio

Total noninterest expense / Total net revenue

\* Represents net income applicable to common equity

(a) The Firm uses ROTCE, a non-GAAP financial measure, to evaluate its use of equity and to facilitate comparisons with competitors.

Refer to the following table for the calculation of average tangible common equity.

Average tangible common equity			
Year ended December 31, (in millions)	2012	2011	2010
Common stockholders' equity	\$ 184,352	\$ 173,266	\$ 161,520
Less: Goodwill	48,176	48,632	48,618
Less: Certain identifiable intangible assets	2,833	3,632	4,178
Add: Deferred tax liabilities <sup>(a)</sup>	2,754	2,635	2,587
Tangible common equity	\$ 136,097	\$ 123,637	\$ 111,311

(a) Represents deferred tax liabilities related to tax-deductible goodwill and to identifiable intangibles created in nontaxable transactions, which are netted against goodwill and other intangibles when calculating TCE.

#### Core net interest income

In addition to reviewing JPMorgan Chase's net interest income on a managed basis, management also reviews core net interest income to assess the performance of its core lending, investing (including asset-liability management) and deposit-raising activities (which excludes the impact of CIB's market-based activities). The table below presents an analysis of core net interest income, core average interest-earning assets, and the core net interest yield on core average interest-earning assets, on a managed basis. Each of these amounts is a non-GAAP financial measure due to the exclusion of CIB's market-based net interest income and the related assets. Management believes the exclusion of CIB's market-based activities provides investors and analysts a more meaningful measure by which to analyze the non-market-related business trends of the Firm and provides a comparable measure to other financial institutions that are primarily focused on core lending, investing and deposit-raising activities.

#### Core net interest income data<sup>(a)</sup>

Year ended December 31, (in millions, except rates)	2012	2011	2010	
Net interest income - managed basis <sup>(b)(c)</sup>	\$ 45,653	\$ 48,219	\$ 51,404	
Less: Market-based net interest income	5,787	7,329	7,112	
Core net interest income <sup>(b)</sup>	\$ 39,866	\$ 40,890	\$ 44,292	
Average interest-earning assets	\$ 1,842,417	\$ 1,761,355	\$ 1,677,521	
Less: Average market-based earning assets	499,339	519,655	470,927	
Core average interest-earning assets	\$ 1,343,078	\$ 1,241,700	\$ 1,206,594	
Net interest yield on interest-earning assets - managed basis	2.48	% 2.74	% 3.06	%
Net interest yield on market-based activity	1.16	1.41	1.51	
Core net interest yield on core average interest-earning assets	2.97	% 3.29	% 3.67	%

(a) Includes core lending, investing and deposit-raising activities on a managed basis across CCB, CIB, CB, AM, Corporate/Private Equity; excludes the market-based activities within the CIB.

(b) Interest includes the effect of related hedging derivatives. Taxable-equivalent amounts are used where applicable.

(c) For a reconciliation of net interest income on a reported and managed basis, see reconciliation from the Firm's reported U.S. GAAP results to managed basis on page 76.

#### 2012 compared with 2011

Core net interest income decreased by \$1.0 billion to \$39.9 billion for 2012 and core average interest-earning assets increased by \$101.4 billion in 2012 to \$1,343.1 billion. The decline in net interest income in 2012 reflected the impact of the runoff of higher-yielding loans, faster prepayment of mortgage-backed securities, limited reinvestment opportunities, as well as the impact of lower interest rates across the Firm's interest-earning assets. The decrease in net interest income was partially offset by lower deposit and other borrowing costs. The increase in average interest-earning assets was driven by higher deposits with banks and other short-term investments, increased levels of loans, and an increase in investment securities. The core net interest yield decreased by 32 basis points to 2.97% in

2012, primarily driven by the runoff of higher-yielding loans as well as lower customer loan rates, higher financing costs associated with mortgage-backed securities, limited reinvestment opportunities, and was slightly offset by lower customer deposit rates.

2011 compared with 2010

Core net interest income decreased by \$3.4 billion to \$40.9 billion for 2011. The decrease was primarily driven by lower loan levels and yields in CCB compared with 2010 levels. Core average interest-earning assets increased by \$35.1 billion in 2011 to \$1,241.7 billion. The increase was driven by higher levels of deposits with banks and securities borrowed due to wholesale and retail client deposit growth. The core net interest yield decreased by 38 basis points in 2011 driven by lower loan yields and higher deposit balances, and lower yields on investment securities due to portfolio mix and lower long-term interest rates.

Other financial measures

The Firm also discloses the allowance for loan losses to total retained loans, excluding residential real estate purchased credit-impaired loans. For a further discussion of this credit metric, see Allowance for Credit Losses on pages 159–162 of this Annual Report.

Management's discussion and analysis

**BUSINESS SEGMENT RESULTS**

The Firm is managed on a line of business basis. There are four major reportable business segments – Consumer & Community Banking, Corporate & Investment Bank, Commercial Banking and Asset Management. In addition, there is a Corporate/Private Equity segment.

The business segments are determined based on the products and services provided, or the type of customer served, and they reflect the manner in which financial information is currently evaluated by management. Results of these lines of business are presented on a managed basis. For a definition of managed basis, see Explanation and Reconciliation of the Firm's use of non-GAAP financial measures, on pages 76–77 of this Annual Report.

**Business segment changes**

Commencing with the fourth quarter of 2012, the Firm's business segments have been reorganized as follows:

Retail Financial Services and Card Services & Auto (“Card”) business segments were combined to form one business segment called Consumer & Community Banking (“CCB”), and Investment Bank and Treasury & Securities Services business segments were combined to form one business segment called Corporate & Investment Bank (“CIB”).

Commercial Banking (“CB”) and Asset Management (“AM”) were not affected by the aforementioned changes. A technology function supporting online and mobile banking was transferred from Corporate/Private Equity to the CCB business segment. This transfer did not materially affect the results of either the CCB business segment or Corporate/Private Equity.

The business segment information that follows has been revised to reflect the business reorganization retroactive to January 1, 2010.

**Description of business segment reporting methodology**

Results of the business segments are intended to reflect each segment as if it were essentially a stand-alone business. The management reporting process that derives business segment results allocates income and expense using market-based methodologies. The Firm continues to assess the assumptions, methodologies and reporting classifications used for segment reporting, and further refinements may be implemented in future periods.

**Revenue sharing**

When business segments join efforts to sell products and services to the Firm's clients, the participating business segments agree to share revenue from those transactions. The segment results reflect these revenue-sharing agreements.

**Funds transfer pricing**

Funds transfer pricing is used to allocate interest income and expense to each business and transfer the primary interest rate risk exposures to the Treasury group within Corporate/Private Equity. The allocation process is unique to each business segment and considers the interest rate risk, liquidity risk and regulatory requirements of that segment as if it were operating independently, and as compared with its stand-alone peers. This process is overseen by senior management and reviewed by the Firm's Asset-Liability Committee (“ALCO”). Business segments may be permitted to retain certain interest rate exposures subject to management approval.

### Capital allocation

Each business segment is allocated capital, taking into consideration the capital the business segment would require if it were operating independently, incorporating sufficient capital to address regulatory capital requirements (including Basel III Tier 1 common capital requirements), economic risk measures and capital levels for similarly rated peers. The amount of capital assigned to each business is referred to as equity. Effective January 1, 2012, the Firm revised the capital allocated to certain businesses, reflecting additional refinement of each segment's estimated Basel III Tier 1 common capital requirements and balance sheet trends. For a further discussion of capital allocation, including refinements to the capital allocations that became effective on January 1, 2013, see Capital Management – Line of business equity on page 121 of this Annual Report.

### Expense allocation

Where business segments use services provided by support units within the Firm, or another business segment, the costs of those services are allocated to the respective business segments. The expense is generally allocated based on actual cost and upon usage of the services provided. In contrast, certain other expense related to certain corporate functions, or to certain technology and operations, are not allocated to the business segments and are retained in Corporate. Retained expense includes: parent company costs that would not be incurred if the segments were stand-alone businesses; adjustments to align certain corporate staff, technology and operations allocations with market prices; and other one-time items not aligned with a particular business segment.

### Segment Results – Managed Basis

The following table summarizes the business segment results for the periods indicated.

Year ended December 31, (in millions)	Total net revenue			Noninterest expense			Pre-provision profit		
	2012	2011	2010	2012	2011	2010	2012	2011	2010
Consumer & Community Banking	\$49,945	\$45,687	\$48,927	\$28,790	\$27,544	\$23,706	\$21,155	\$18,143	\$25,221
Corporate & Investment Bank	34,326	33,984	33,477	21,850	21,979	22,869	12,476	12,005	10,608
Commercial Banking	6,825	6,418	6,040	2,389	2,278	2,199	4,436	4,140	3,841
Asset Management	9,946	9,543	8,984	7,104	7,002	6,112	2,842	2,541	2,872
Corporate/Private Equity	(1,152)	4,135	7,414	4,596	4,108	6,310	(5,748)	27	1,104
Total	\$99,890	\$99,767	\$104,842	\$64,729	\$62,911	\$61,196	\$35,161	\$36,856	\$43,646

Year ended December 31, (in millions, except ratios)	Provision for credit losses			Net income/(loss)			Return on equity			
	2012	2011	2010	2012	2011	2010	2012	2011	2010	
Consumer & Community Banking	\$3,774	\$7,620	\$17,489	\$10,611	\$6,202	\$4,578	25	% 15	% 11	%
Corporate & Investment Bank	(479)	(285)	(1,247)	8,406	7,993	7,718	18	17	17	
Commercial Banking	41	208	297	2,646	2,367	2,084	28	30	26	
Asset Management	86	67	86	1,703	1,592	1,710	24	25	26	
Corporate/Private Equity	(37)	(36)	14	(2,082)	822	1,280	NM	NM	NM	
Total	\$3,385	\$7,574	\$16,639	\$21,284	\$18,976	\$17,370	11	% 11	% 10	%





## Management's discussion and analysis

## CONSUMER &amp; COMMUNITY BANKING

Consumer & Community Banking ("CCB") serves consumers and businesses through personal service at bank branches and through ATMs, online, mobile and telephone banking. CCB is organized into Consumer & Business Banking, Mortgage Banking (including Mortgage Production, Mortgage Servicing and Real Estate Portfolios) and Card, Merchant Services & Auto ("Card"). Consumer & Business Banking offers deposit and investment products and services to consumers, and lending, deposit, and cash management and payment solutions to small businesses. Mortgage Banking includes mortgage origination and servicing activities, as well as portfolios comprised of residential mortgages and home equity loans, including the PCI portfolio acquired in the Washington Mutual transaction. Card issues credit cards to consumers and small businesses, provides payment services to corporate and public sector clients through its commercial card products, offers payment processing services to merchants, and provides auto and student loan services.

## Selected income statement data

Year ended December 31,

(in millions, except ratios)

	2012	2011	2010
Revenue			
Lending- and deposit-related fees	\$3,121	\$3,219	\$3,117
Asset management, administration and commissions	2,092	2,044	1,831
Mortgage fees and related income	8,680	2,714	3,855
Card income	5,446	6,152	5,469
All other income	1,456	1,177	1,241
Noninterest revenue	20,795	15,306	15,513
Net interest income	29,150	30,381	33,414
Total net revenue	49,945	45,687	48,927
Provision for credit losses	3,774	7,620	17,489
Noninterest expense			
Compensation expense	11,231	9,971	8,804
Noncompensation expense	16,784	16,934	14,159
Amortization of intangibles	775	639	743
Total noninterest expense	28,790	27,544	23,706
Income before income tax expense	17,381	10,523	7,732
Income tax expense	6,770	4,321	3,154
Net income	\$10,611	\$6,202	\$4,578
Financial ratios			
Return on common equity	25	% 15	% 11
Overhead ratio	58	60	48

## 2012 compared with 2011

Consumer & Community Banking net income was \$10.6 billion, up 71% when compared with the prior year. The increase was driven by higher net revenue and lower provision for credit losses, partially offset by higher noninterest expense.

Net revenue was \$49.9 billion, up \$4.3 billion, or 9%, compared with the prior year. Net interest income was \$29.2 billion, down \$1.2 billion, or 4%, driven by lower deposit margins and lower loan balances due to portfolio runoff, largely offset by higher deposit balances. Noninterest revenue was \$20.8 billion, up \$5.5 billion, or 36%, driven by higher mortgage fees and related income, partially offset by lower debit card revenue, reflecting the impact of the Durbin Amendment.

The provision for credit losses was \$3.8 billion compared with \$7.6 billion in the prior year. The current-year provision reflected a \$5.5 billion reduction in the allowance for loan losses due to improved delinquency trends and reduced estimated losses in the real estate and credit card loan portfolios. Current-year total net charge-offs were \$9.3 billion, including \$800 million of charge-offs related to regulatory guidance. Excluding these charge-offs, net charge-offs during the year would have been \$8.5 billion compared with \$11.8 billion in the prior year. For more information, including net charge-off amounts and rates, see Consumer Credit Portfolio on pages 138–149 of this Annual Report.

Noninterest expense was \$28.8 billion, an increase of \$1.2 billion, or 5%, compared with the prior year, driven by higher production expense reflecting higher volumes, and investments in sales force, partially offset by lower costs related to mortgage-related matters and lower marketing expense in Card.

2011 compared with 2010

Consumer & Community Banking net income was \$6.2 billion, up 35% when compared with the prior year. The increase was driven by lower provision for credit losses, largely offset by higher noninterest expense and lower net revenue.

Net revenue was \$45.7 billion, down \$3.2 billion, or 7%, compared with the prior year. Net interest income was \$30.4 billion, down \$3.0 billion, or 9%, reflecting the impact of lower loan balances, the impact of legislative changes in Card and a decreased level of fees in Card, largely offset by lower revenue reversals associated with lower net charge-offs in Card. Noninterest revenue was \$15.3 billion, down \$207 million, or 1%, driven by lower mortgage fees and related income, largely offset by the transfer of the Commercial Card business to Card from CIB in the first quarter of 2011 and higher net interchange income in Card.

The provision for credit losses was \$7.6 billion, a decrease of \$9.9 billion from the prior year. The current year provision included a \$4.2 billion net reduction in the allowance for loan losses due to improved delinquency trends and lower estimated losses primarily in Card. The prior year provision reflected a reduction in the allowance for loan losses of \$4.3 billion due to lower estimated losses primarily in Card.

Noninterest expense was \$27.5 billion, up \$3.8 billion, or 16%, from the prior year driven by elevated foreclosure- and default-related costs, including \$1.7 billion for fees and assessments, as well as other costs of foreclosure-related matters during 2011, compared with \$350 million in 2010 in Mortgage Banking, as well as higher marketing expense in Card.

#### Selected metrics

As of or for the year ended December 31,  
(in millions, except headcount and ratios)

	2012	2011	2010
Selected balance sheet data (period-end)			
Total assets	\$463,608	\$483,307	\$508,775
Loans:			
Loans retained	402,963	425,581	452,249
Loans held-for-sale and loans at fair value <sup>(a)</sup>	18,801	12,796	17,015
Total loans	421,764	438,377	469,264
Deposits	438,484	397,825	371,861
Equity	43,000	41,000	43,000
Selected balance sheet data (average)			
Total assets	\$464,197	\$487,923	\$527,101
Loans:			
Loans retained	408,559	429,975	475,549
Loans held-for-sale and loans at fair value <sup>(a)</sup>	18,006	17,187	16,663
Total loans	426,565	447,162	492,212
Deposits	413,911	382,678	363,645
Equity	43,000	41,000	43,000
Headcount	159,467	161,443	143,226

#### Selected metrics

As of or for the year ended December 31,  
(in millions, except headcount and ratios)

	2012	2011	2010
Credit data and quality statistics			
Net charge-offs <sup>(b)</sup>	\$9,280	\$11,815	\$21,943
Nonaccrual loans:			
Nonaccrual loans retained	9,114	7,354	8,770
Nonaccrual loans held-for-sale and loans at fair value	39	103	145
Total nonaccrual loans <sup>(c)(d)(e)(f)</sup>	9,153	7,457	8,915
Nonperforming assets <sup>(c)(d)(e)(f)</sup>	9,830	8,292	10,268
Allowance for loan losses	17,752	23,256	27,487
Net charge-off rate <sup>(b)(g)</sup>	2.27	% 2.75	% 4.61
Net charge-off rate, excluding PCI loans <sup>(b)(g)</sup>	2.68	3.27	5.50
Allowance for loan losses to period-end loans retained	4.41	5.46	6.08
Allowance for loan losses to period-end loans retained, excluding PCI loans <sup>(h)</sup>	3.51	4.87	5.94
	72	143	131

Allowance for loan losses to nonaccrual loans retained, excluding credit card<sup>(c)(f)(h)</sup>

Nonaccrual loans to total period-end loans, excluding credit card <sup>(f)</sup>	3.12	2.44	2.69
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Nonaccrual loans to total period-end loans, excluding credit card and PCI loans <sup>(c)(f)</sup>	3.91	3.10	3.44
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Business metrics

Number of:

Branches	5,614	5,508	5,268
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ATMs	18,699	17,235	16,145
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Active online customers (in thousands)	31,114	29,749	28,708
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Active mobile customers (in thousands)	12,359	8,203	4,873
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(a) Predominantly consists of prime mortgages originated with the intent to sell that are accounted for at fair value and classified as trading assets on the Consolidated Balance Sheets.

(b) Net charge-offs and net charge-off rates for the year ended December 31, 2012, included \$800 million of charge-offs, recorded in accordance with regulatory guidance. Excluding these charges-offs, net charge-offs for the year ended December 31, 2012, would have been \$8.5 billion and excluding these charge-offs and PCI loans, the net charge-off rate for the year ended December 31, 2012, would have been 2.45%. For further information, see Consumer Credit Portfolio on pages 138–149 of this Annual Report.

(c) Excludes PCI loans. Because the Firm is recognizing interest income on each pool of PCI loans, they are all considered to be performing.

(d) Certain mortgages originated with the intent to sell are classified as trading assets on the Consolidated Balance Sheets.

(e) At December 31, 2012, 2011 and 2010, nonperforming assets excluded: (1) mortgage loans insured by U.S. government agencies of \$10.6 billion, \$11.5 billion, and \$9.4 billion, respectively, that are 90 or more days past due; (2) real estate owned insured by U.S. government agencies of \$1.6 billion, \$954 million, and \$1.9 billion, respectively; and (3) student loans insured by U.S. government agencies under the Federal Family Education Loan Program (“FFELP”) of \$525 million, \$551 million, and \$625 million, respectively, that are 90 or more days past due.

(f) These amounts were excluded from nonaccrual loans as reimbursement of insured amounts is proceeding normally. Nonaccrual loans included \$3.0 billion of loans at December 31, 2012, based upon regulatory guidance. For further information, see Consumer Credit Portfolio on pages 138–149 of this Annual Report.

(g) Loans held-for-sale and loans accounted for at fair value were excluded when calculating the net charge-off rate.

(h) An allowance for loan losses of \$5.7 billion at December 31, 2012 and 2011, and \$4.9 billion at December 31, 2010 was recorded for PCI loans; these amounts were also excluded from the applicable ratios.

## Management's discussion and analysis

## Consumer &amp; Business Banking

## Selected income statement data

Year ended December 31,

(in millions, except ratios)

	2012	2011	2010
Revenue			
Lending- and deposit-related fees	\$3,068	\$3,160	\$3,025
Asset management, administration and commissions	1,637	1,559	1,390
Card income	1,353	2,024	1,953
All other income	481	467	484
Noninterest revenue	6,539	7,210	6,852
Net interest income	10,673	10,808	10,884
Total net revenue	17,212	18,018	17,736
Provision for credit losses	311	419	630
Noninterest expense	11,453	11,243	10,762
Income before income tax expense	5,448	6,356	6,344
Net income	\$3,263	\$3,796	\$3,630
Overhead ratio	67	% 62	% 61
Overhead ratio, excluding core deposit intangibles <sup>(a)</sup>	65	61	59

Consumer & Business Banking ("CBB") uses the overhead ratio (excluding the amortization of core deposit intangibles ("CDI")), a non-GAAP financial measure, to evaluate the underlying expense trends of the business.

Including CDI amortization expense in the overhead ratio calculation would result in a higher overhead ratio in the (a) earlier years and a lower overhead ratio in later years; this method would therefore result in an improving overhead ratio over time, all things remaining equal. This non-GAAP ratio excluded CBB's CDI amortization expense related to prior business combination transactions of \$200 million, \$238 million, and \$276 million for the years ended December 31, 2012, 2011 and 2010, respectively.

## 2012 compared with 2011

Consumer & Business Banking net income was \$3.3 billion, a decrease of \$533 million, or 14%, compared with the prior year. The decrease was driven by lower net revenue and higher noninterest expense, partially offset by lower provision for credit losses.

Net revenue was \$17.2 billion, down 4% from the prior year. Net interest income was \$10.7 billion, down 1% from the prior year, driven by the impact of lower deposit margins, predominantly offset by higher deposit balances. Noninterest revenue was \$6.5 billion, down 9% from the prior year, driven by lower debit card revenue, reflecting the impact of the Durbin Amendment.

The provision for credit losses was \$311 million, compared with \$419 million in the prior year. The current-year provision reflected a \$100 million reduction in the allowance for loan losses. Net charge-offs were \$411 million compared with \$494 million in the prior year.

Noninterest expense was \$11.5 billion, up 2% from the prior year, resulting from investment in the sales force and new branch builds.

## 2011 compared with 2010

Consumer & Business Banking net income was \$3.8 billion, an increase of \$166 million, or 5%, compared with the prior year. The increase was driven by higher net revenue and lower provision for credit losses, offset by higher noninterest expense.

Net revenue was \$18.0 billion, up 2% from the prior year. Net interest income was \$10.8 billion, relatively flat compared with the prior year, as the impact from higher deposit balances was predominantly offset by the effect of

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lower deposit margins. Noninterest revenue was \$7.2 billion, up 5% from the prior year, driven by higher investment sales revenue and higher deposit-related fees.

The provision for credit losses was \$419 million, compared with \$630 million in the prior year. Net charge-offs were \$494 million, compared with \$730 million in the prior year.

Noninterest expense was \$11.2 billion, up 4% from the prior year, resulting from investment in sales force and new branch builds.

Selected metrics

As of or for the year ended

December 31,

(in millions, except ratios)

	2012	2011	2010
Business metrics			
Business banking origination volume	\$6,542	\$5,827	\$4,688
Period-end loans	18,883	17,652	16,812
Period-end deposits:			
Checking	170,322	147,779	131,702
Savings	216,422	191,891	170,604
Time and other	31,752	36,745	45,967
Total period-end deposits	418,496	376,415	348,273
Average loans:			
Average loans	18,104	17,121	16,863
Average deposits:			
Checking	153,385	136,579	123,490
Savings	204,449	182,587	166,112
Time and other	34,224	41,576	51,152
Total average deposits	392,058	360,742	340,754
Deposit margin	2.57	% 2.82	% 3.00
Average assets	\$30,987	\$29,774	\$29,321

## Selected metrics

As of or for the year ended December 31,

(in millions, except ratios and where otherwise noted)

	2012		2011		2010	
Credit data and quality statistics						
Net charge-offs	\$411		\$494		\$730	
Net charge-off rate	2.27	%	2.89	%	4.32	%
Allowance for loan losses	\$698		\$798		\$875	
Nonperforming assets	488		710		846	
Retail branch business metrics						
Investment sales volume	\$26,036		\$22,716		\$23,579	
Client investment assets	158,502		137,853		133,114	
% managed accounts	29	%	24	%	20	%
Number of:						
Chase Private Client branch locations	1,218		262		16	
Personal bankers	23,674		24,308		21,735	
Sales specialists	6,076		6,017		4,876	
Client advisors	2,963		3,201		3,066	
Chase Private Clients	105,700		21,723		4,242	
Accounts (in thousands) <sup>(a)</sup>	28,073		26,626		27,252	

(a) Includes checking accounts and Chase Liquid<sup>SM</sup> cards (launched in the second quarter of 2012).

## Mortgage Banking

Selected income statement data

Year ended December 31,

(in millions, except ratios)

	2012		2011		2010	
Revenue						
Mortgage fees and related income	\$8,680		\$2,714		\$3,855	
All other income	475		490		528	
Noninterest revenue	9,155		3,204		4,383	
Net interest income	4,808		5,324		6,336	
Total net revenue	13,963		8,528		10,719	
Provision for credit losses	(490	)	3,580		8,289	
Noninterest expense	9,121		8,256		5,766	
Income/(loss) before income tax expense/(benefit)	5,332		(3,308	)	(3,336	)
Net income/(loss)	\$3,341		\$(2,138	)	\$(1,924	)
Overhead ratio	65	%	97	%	54	%

## 2012 compared with 2011

Mortgage Banking net income was \$3.3 billion, compared with a net loss of \$2.1 billion in the prior year. The increase was driven by higher net revenue and lower provision for credit losses, partially offset by higher noninterest expense. Net revenue was \$14.0 billion, up \$5.4 billion, or 64%, compared with the prior year. Net interest income was \$4.8 billion, down \$516 million, or 10%, resulting from lower loan balances due to portfolio runoff. Noninterest revenue was \$9.2 billion, up \$6.0 billion compared with the prior year, driven by higher mortgage fees and related income. The provision for credit losses was a benefit of \$490 million, compared with a provision expense of \$3.6 billion in the prior year. The current year reflected a \$3.85 billion reduction in the allowance for loan losses due to improved

delinquency trends and lower estimated losses.

Noninterest expense was \$9.1 billion, an increase of \$865 million, or 10%, compared with the prior year, driven by higher production expense reflecting higher volumes, partially offset by lower costs related to mortgage-related matters.

2011 compared with 2010

Mortgage Banking reported a net loss of \$2.1 billion, compared with a net loss of \$1.9 billion in the prior year. The increase in net loss was driven by higher noninterest expense and lower net revenue, offset by lower provision for credit losses.

Net revenue was \$8.5 billion, down \$2.2 billion, or 20%, compared with the prior year. Net interest income was \$5.3 billion, down \$1.0 billion, or 16%, from the prior year, resulting from lower loan balances due to portfolio runoff. Noninterest revenue was \$3.2 billion, down \$1.2 billion, or 27%, from the prior year, driven by lower mortgage fees and related income.

The provision for credit losses was \$3.6 billion, down \$4.7 billion, or 57% compared with the prior year due to lower estimated losses as delinquency trends and charge-offs continued to improve. The current year provision also included a \$230 million net reduction in the allowance for loan losses which reflects a reduction of \$1.0 billion in the allowance related to the non-credit-impaired portfolio, as estimated losses in the portfolio have declined, predominantly offset by an increase of \$770 million reflecting additional impairment of the Washington Mutual PCI portfolio due to higher-than-expected default frequency relative to modeled lifetime loss estimates. The prior-year provision reflected a higher impairment of the PCI portfolio and higher net charge-offs.

Noninterest expense was \$8.3 billion, an increase of \$2.5 billion, or 43%, compared with the prior year, driven by elevated foreclosure- and default-related costs in Mortgage Servicing.



## Management's discussion and analysis

## Functional results

Year ended December 31,  
(in millions, except ratios)

	2012		2011		2010
<b>Mortgage Production</b>					
Production revenue	\$5,783		\$3,395		\$3,440
Production-related net interest & other income	787		840		869
Production-related revenue, excluding repurchase losses	6,570		4,235		4,309
Production expense <sup>(a)</sup>	2,747		1,895		1,613
Income, excluding repurchase losses	3,823		2,340		2,696
Repurchase losses	(272	)	(1,347	)	(2,912
Income/(loss) before income tax expense/(benefit)	3,551		993		(216
					)
<b>Mortgage Servicing</b>					
Loan servicing revenue	3,772		4,134		4,575
Servicing-related net interest & other income	407		390		433
Servicing-related revenue	4,179		4,524		5,008
MSR asset modeled amortization	(1,222	)	(1,904	)	(2,384
Default servicing expense	3,707		3,814		1,747
Core servicing expense	1,033		1,031		837
Income/(loss), excluding MSR risk management	(1,783	)	(2,225	)	40
MSR risk management, including related net interest income/(expense)	616		(1,572	)	1,151
Income/(loss) before income tax expense/(benefit)	(1,167	)	(3,797	)	1,191
<b>Real Estate Portfolios</b>					
Noninterest revenue	43		38		115
Net interest income	4,049		4,554		5,432
Total net revenue	4,092		4,592		5,547
Provision for credit losses	(509	)	3,575		8,231
Noninterest expense	1,653		1,521		1,627
Income/(loss) before income tax expense/(benefit)	2,948		(504	)	(4,311
					)
Mortgage Banking income/(loss) before income tax expense/(benefit)	\$5,332		\$(3,308	)	\$(3,336
					)
Mortgage Banking net income/(loss)	\$3,341		\$(2,138	)	\$(1,924
					)
<b>Overhead ratios</b>					
Mortgage Production	43	%	65	%	111
Mortgage Servicing	133		462		68
Real Estate Portfolios	40		33		29

(a) Includes credit costs associated with Production.

## Selected income statement data

Year ended December 31,  
(in millions)

	2012		2011		2010
<b>Supplemental mortgage fees and related income details</b>					

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Net production revenue:			
Production revenue	\$5,783	\$3,395	\$3,440
Repurchase losses	(272)	) (1,347	) (2,912 )
Net production revenue	5,511	2,048	528
Net mortgage servicing revenue:			
Operating revenue:			
Loan servicing revenue	3,772	4,134	4,575
Changes in MSR asset fair value due to modeled amortization	(1,222)	) (1,904	) (2,384 )
Total operating revenue	2,550	2,230	2,191
Risk management:			
Changes in MSR asset fair value due to market interest rates	(587)	) (5,390	) (2,224 )
Other changes in MSR asset fair value due to inputs or assumptions in model <sup>(a)</sup>	(46)	) (1,727	) (44 )
Changes in derivative fair value and other	1,252	5,553	3,404
Total risk management	619	(1,564	) 1,136
Total net mortgage servicing revenue	3,169	666	3,327
Mortgage fees and related income	\$8,680	\$2,714	\$3,855

Represents the aggregate impact of changes in model inputs and assumptions such as costs to service, home prices, (a) mortgage spreads, ancillary income, and assumptions used to derive prepayment speeds, as well as changes to the valuation models themselves.

Net production revenue includes net gains or losses on originations and sales of prime and subprime mortgage loans, other production-related fees and losses related to the repurchase of previously-sold loans.

Net mortgage servicing revenue includes the following components:

(a) Operating revenue comprises:

– gross income earned from servicing third-party mortgage loans including stated service fees, excess service fees and other ancillary fees; and

– modeled MSR asset amortization (or time decay).

(b) Risk management comprises:

– changes in MSR asset fair value due to market-based inputs such as interest rates, as well as updates to assumptions used in the MSR valuation model; and

– changes in derivative fair value and other, which represents changes in the fair value of derivative instruments used to offset the impact of changes in interest rates to the MSR valuation model.

Mortgage origination channels comprise the following:

Retail – Borrowers who buy or refinance a home through direct contact with a mortgage banker employed by the Firm using a branch office, the Internet or by phone. Borrowers are frequently referred to a mortgage banker by a banker in a Chase branch, real estate brokers, home builders or other third parties.

Wholesale – Third-party mortgage brokers refer loan application packages to the Firm. The Firm then underwrites and funds the loan. Brokers are independent loan originators that specialize in counseling applicants on available home financing options, but do not provide funding for loans. Chase materially eliminated broker-originated loans in 2008, with the exception of a small number of loans guaranteed by the U.S. Department of Agriculture under its Section 502 Guaranteed Loan program that serves low-and-moderate income families in small rural communities.

Correspondent – Banks, thrifts, other mortgage banks and other financial institutions that sell closed loans to the Firm. Correspondent negotiated transactions (“CNTs”) – Mid-to-large-sized mortgage lenders, banks and bank-owned mortgage companies sell servicing to the Firm on an as-originated basis (excluding sales of bulk servicing transactions). These transactions supplement traditional production channels and provide growth opportunities in the servicing portfolio in periods of stable and rising interest rates.

2012 compared with 2011

Mortgage Production pretax income was \$3.6 billion, an increase of \$2.6 billion compared with the prior year.

Mortgage production-related revenue, excluding repurchase losses, was \$6.6 billion, an increase of \$2.3 billion, or 55%, from the prior year. These results reflected wider margins, driven by favorable market conditions, and higher volumes due to historically low interest rates and the Home Affordable Refinance Programs (“HARP”). Production expense, including credit costs, was \$2.7 billion, an increase of \$852 million, or 45%, reflecting higher volumes and additional litigation costs. Repurchase losses were \$272 million, compared with \$1.3 billion in the prior year.

The current-year reflected a reduction in the repurchase liability of \$683 million compared with a build of \$213 million in the prior year, primarily driven by improved cure rates on Agency repurchase demands and lower outstanding repurchase demand pipeline. For further information, see Mortgage repurchase liability on pages 111–115 of this Annual Report.

Mortgage Servicing reported a pretax loss of \$1.2 billion, compared with a pretax loss of \$3.8 billion in the prior year. Mortgage servicing revenue, including amortization, was \$3.0 billion, an increase of \$337 million, or 13%, from the prior year, driven by lower mortgage servicing rights (“MSR”) asset amortization expense as a result of lower MSR asset value, partially offset by lower loan servicing revenue due to the decline in the third-party loans serviced. MSR risk management income was \$616 million, compared with a loss of \$1.6 billion in the prior year. The prior year MSR risk management loss was driven by refinements to the valuation model and related inputs. See Note 17 on pages 291–295 of this Annual Report for further information regarding changes in value of the MSR asset and related hedges. Servicing expense was \$4.7 billion, down 2% from the prior year, but elevated in both the current and prior year primarily due to higher default servicing costs.

Real Estate Portfolios pretax income was \$2.9 billion, compared with a pretax loss of \$504 million in the prior year. The improvement was driven by a benefit from the provision for credit losses, reflecting the continued improvement in credit trends, partially offset by lower net revenue. Net revenue was \$4.1 billion, down \$500 million, or 11%, from the prior year. The decrease was driven by a decline in net interest income as a result of lower loan balances due to portfolio runoff. The provision for credit losses reflected a benefit of \$509 million, compared with a provision expense of \$3.6 billion in the prior year. The current-year provision reflected a \$3.9 billion reduction in the allowance for loan losses due to improved delinquency trends and lower estimated losses. Current-year net charge-offs totaled \$3.3 billion, including \$744 million of charge-offs, related to regulatory guidance, compared with \$3.8 billion in the prior year. See Consumer Credit Portfolio on pages 138–149 of this Annual Report for the net charge-off amounts and rates. Nonaccrual loans were \$7.9 billion, compared with \$5.9 billion in the prior year. Excluding the impact of certain regulatory guidance, nonaccrual loans would have been \$4.9 billion at December 31, 2012. For more information on the reporting of Chapter 7 loans and performing junior liens that are subordinate to senior liens that are 90 days or more past due as nonaccrual, see Consumer Credit Portfolio on pages 138–149 of this Annual Report. Noninterest expense was \$1.7 billion, up \$132 million, or 9%, compared with the prior year due to an increase in servicing costs.

## Management's discussion and analysis

## 2011 compared with 2010

Mortgage Production pretax income was \$993 million, compared with a pretax loss of \$216 million in the prior year. Production-related revenue, excluding repurchase losses, was \$4.2 billion, a decrease of 2% from the prior year, reflecting lower volumes and narrower margins compared with the prior year. Production expense was \$1.9 billion, an increase of \$282 million, or 17%, reflecting a strategic shift to higher-cost retail originations both through the branch network and direct to the consumer. Repurchase losses were \$1.3 billion, compared with prior-year repurchase losses of \$2.9 billion, which included a \$1.6 billion increase in the repurchase reserve.

Mortgage Servicing reported a pretax loss of \$3.8 billion, compared with pretax income of \$1.2 billion in the prior year. Mortgage servicing revenue, including amortization was \$2.6 billion, or flat compared with the prior year. MSR risk management was a loss of \$1.6 billion, compared with income of \$1.2 billion in the prior year, driven by refinements to the valuation model and related inputs. Servicing expense was \$4.8 billion, an increase of \$2.3 billion, driven by \$1.7 billion recorded for fees and assessments, and other costs of foreclosure-related matters, as well as higher core and default servicing costs. See Note 17 on pages 291–295 of this Annual Report for further information regarding changes in value of the MSR asset and related hedges.

Real Estate Portfolios reported a pretax loss of \$504 million, compared with a pretax loss of \$4.3 billion in the prior year. The improvement was driven by lower provision for credit losses, partially offset by lower net revenue. Net revenue was \$4.6 billion, down by \$955 million, or 17%, from the prior year. The decrease was driven by a decline in net interest income as a result of lower loan balances due to portfolio runoff and narrower loan spreads. The provision for credit losses was \$3.6 billion, compared with \$8.2 billion in the prior year, reflecting an improvement in charge-off trends and a net reduction of the allowance for loan losses of \$230 million. The net change in the allowance reflected a \$1.0 billion reduction related to the non-credit-impaired portfolios as estimated losses declined, predominately offset by an increase of \$770 million reflecting additional impairment of the Washington Mutual PCI portfolio due to higher-than-expected default frequency relative to modeled lifetime loss estimates. The prior-year provision reflected a higher impairment of the PCI portfolio and higher net charge-offs. See Consumer Credit Portfolio on pages 138–149 of this Annual Report for the net charge-off amounts and rates. Noninterest expense was \$1.5 billion, down by \$106 million, or 7%, from the prior year, reflecting a decrease in foreclosed asset expense due to temporary delays in foreclosure activity.

## PCI Loans

Included within Real Estate Portfolios are PCI loans that the Firm acquired in the Washington Mutual transaction. For PCI loans, the excess of the undiscounted gross cash flows expected to be collected over the carrying value of the loans (the “accretable yield”) is accreted into interest income at a level rate of return over the expected life of the loans. The net spread between the PCI loans and the related liabilities are expected to be relatively constant over time, except for any basis risk or other residual interest rate risk that remains and for certain changes in the accretable yield percentage (e.g., from extended loan liquidation periods and from prepayments). As of December 31, 2012, the remaining weighted-average life of the PCI loan portfolio is expected to be 8 years. The loan balances are expected to decline more rapidly over the next three to four years as the most troubled loans are liquidated, and more slowly thereafter as the remaining troubled borrowers have limited refinancing opportunities. Similarly, default and servicing expense are expected to be higher in the earlier years and decline over time as liquidations slow down.

To date the impact of the PCI loans on Real Estate Portfolios' net income has been negative. This is largely due to the provision for loan losses recognized subsequent to its acquisition, and the higher level of default and servicing expense associated with the portfolio. Over time, the Firm expects that this portfolio will contribute positively to net income.

For further information, see Note 14, PCI loans, on pages 266–268 of this Annual Report.

## Mortgage Production and Servicing

## Selected metrics

As of or for the year ended December 31,  
(in millions, except ratios)

## Selected balance sheet data

## Period-end loans:

	2012	2011	2010
Prime mortgage, including option ARMs <sup>(a)</sup>	\$17,290	\$16,891	\$14,186
Loans held-for-sale and loans at fair value <sup>(b)</sup>	18,801	12,694	14,863

## Average loans:

Prime mortgage, including option ARMs <sup>(a)</sup>	17,335	14,580	13,422
Loans held-for-sale and loans at fair value <sup>(b)</sup>	17,573	16,354	15,395

Average assets	59,837	59,891	57,778
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Repurchase liability (period-end)	2,530	3,213	3,000
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## Credit data and quality statistics

## Net charge-offs:

Prime mortgage, including option ARMs	19	5	41
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## Net charge-off rate:

Prime mortgage, including option ARMs	0.11	% 0.03	% 0.31	%
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30+ day delinquency rate <sup>(c)</sup>	3.05	3.15	3.44
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Nonperforming assets <sup>(d)</sup>	\$638	\$716	\$729
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Predominantly represents prime loans repurchased from Government National Mortgage Association (“Ginnie Mae”) (a) pools, which are insured by U.S. government agencies. See further discussion of loans repurchased from Ginnie Mae pools in Mortgage repurchase liability on pages 111–115 of this Annual Report.

(b) Predominantly consists of prime mortgages originated with the intent to sell that are accounted for at fair value and classified as trading assets on the Consolidated Balance Sheets.

At December 31, 2012, 2011 and 2010, excluded mortgage loans insured by U.S. government agencies of \$11.8 billion, \$12.6 billion, and \$10.3 billion, respectively, that are 30 or more days past due. These amounts were (c) excluded as reimbursement of insured amounts is proceeding normally. For further discussion, see Note 14 on pages 250–275 of this Annual Report which summarizes loan delinquency information.

At December 31, 2012, 2011 and 2010, nonperforming assets excluded: (1) mortgage loans insured by U.S. government agencies of \$10.6 billion, \$11.5 billion, and \$9.4 billion, respectively, that are 90 or more days past due; and (2) real estate owned insured by U.S. government agencies of \$1.6 billion, \$954 million, and \$1.9 billion, (d) respectively. These amounts were excluded from nonaccrual loans as reimbursement of insured amounts is proceeding normally. For further discussion, see Note 14 on pages 250–275 of this Annual Report which summarizes loan delinquency information.

## Selected metrics

As of or for the year ended  
December 31,

(in millions, except ratios and where otherwise noted) 2012

## Business metrics (in billions)

## Origination volume by channel

	2012	2011	2010
Retail	\$101.4	\$87.2	\$68.8
Wholesale <sup>(a)</sup>	0.3	0.5	1.3
Correspondent <sup>(a)</sup>	73.1	52.1	75.3
CNT (negotiated transactions)	6.0	5.8	10.2
Total origination volume	\$180.8	\$145.6	\$155.6

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Application volume by channel						
Retail	\$ 164.5		\$ 137.2		\$ 115.1	
Wholesale <sup>(a)</sup>	0.7		1.0		2.4	
Correspondent <sup>(a)</sup>	100.5		66.5		97.3	
Total application volume	\$265.7		\$204.7		\$214.8	
Third-party mortgage loans serviced (period-end)	\$859.4		\$902.2		\$967.5	
Third-party mortgage loans serviced (average)	847.0		937.6		1,037.6	
MSR net carrying value (period-end)	7.6		7.2		13.6	
Ratio of MSR net carrying value (period-end) to third-party mortgage loans serviced (period-end)	0.88	%	0.80	%	1.41	%
Ratio of loan servicing-related revenue to third-party mortgage loans serviced (average)	0.46		0.44		0.44	
MSR revenue multiple <sup>(b)</sup>	1.91x		1.82x		3.20x	

Includes rural housing loans sourced through brokers and correspondents, which are underwritten and closed with (a) pre-funding loan approval from the U.S. Department of Agriculture Rural Development, which acts as the guarantor in the transaction.

(b) Represents the ratio of MSR net carrying value (period-end) to third-party mortgage loans serviced (period-end) divided by the ratio of loan servicing-related revenue to third-party mortgage loans serviced (average).

## Management's discussion and analysis

## Real Estate Portfolios

## Selected metrics

As of or for the year ended December 31, (in millions)	2012	2011	2010
Loans, excluding PCI			
Period-end loans owned:			
Home equity	\$67,385	\$77,800	\$88,385
Prime mortgage, including option ARMs	41,316	44,284	49,768
Subprime mortgage	8,255	9,664	11,287
Other	633	718	857
Total period-end loans owned	\$117,589	\$132,466	\$150,297
Average loans owned:			
Home equity	\$72,674	\$82,886	\$94,835
Prime mortgage, including option ARMs	42,311	46,971	53,431
Subprime mortgage	8,947	10,471	12,729
Other	675	773	954
Total average loans owned	\$124,607	\$141,101	\$161,949
PCI loans			
Period-end loans owned:			
Home equity	\$20,971	\$22,697	\$24,459
Prime mortgage	13,674	15,180	17,322
Subprime mortgage	4,626	4,976	5,398
Option ARMs	20,466	22,693	25,584
Total period-end loans owned	\$59,737	\$65,546	\$72,763
Average loans owned:			
Home equity	\$21,840	\$23,514	\$25,455
Prime mortgage	14,400	16,181	18,526
Subprime mortgage	4,777	5,170	5,671
Option ARMs	21,545	24,045	27,220
Total average loans owned	\$62,562	\$68,910	\$76,872
Total Real Estate Portfolios			
Period-end loans owned:			
Home equity	\$88,356	\$100,497	\$112,844
Prime mortgage, including option ARMs	75,456	82,157	92,674
Subprime mortgage	12,881	14,640	16,685
Other	633	718	857
Total period-end loans owned	\$177,326	\$198,012	\$223,060
Average loans owned:			
Home equity	\$94,514	\$106,400	\$120,290
Prime mortgage, including option ARMs	78,256	87,197	99,177
Subprime mortgage	13,724	15,641	18,400
Other	675	773	954
Total average loans owned	\$187,169	\$210,011	\$238,821
Average assets	\$175,712	\$197,096	\$226,961
Home equity origination volume	1,420	1,127	1,203

## Credit data and quality statistics

As of or for the year ended December 31, (in millions, except ratios)	2012	2011	2010
Net charge-offs, excluding PCI loans <sup>(a)</sup>			



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Home equity	\$2,385		\$2,472		\$3,444	
Prime mortgage, including option ARMs	454		682		1,573	
Subprime mortgage	486		626		1,374	
Other	16		25		59	
Total net charge-offs	\$3,341		\$3,805		\$6,450	
Net charge-off rate, excluding PCI loans: <sup>(a)</sup>						
Home equity	3.28	%	2.98	%	3.63	%
Prime mortgage, including option ARMs	1.07		1.45		2.95	
Subprime mortgage	5.43		5.98		10.82	
Other	2.37		3.23		5.90	
Total net charge-off rate, excluding PCI loans	2.68		2.70		3.98	
Net charge-off rate – reported <sup>a)</sup>						
Home equity	2.52	%	2.32	%	2.86	%
Prime mortgage, including option ARMs	0.58		0.78		1.59	
Subprime mortgage	3.54		4.00		7.47	
Other	2.37		3.23		5.90	
Total net charge-off rate – reported	1.79		1.81		2.70	
30+ day delinquency rate, excluding PCI loans <sup>(b)</sup>	5.03	%	5.69	%	6.45	%
Allowance for loan losses, excluding PCI loans	\$4,868		\$8,718		\$9,718	
Allowance for PCI loans	5,711		5,711		4,941	
Allowance for loan losses	\$10,579		\$14,429		\$14,659	
Nonperforming assets <sup>(c)(d)</sup>	8,439		6,638		8,424	
Allowance for loan losses to period-end loans retained	5.97	%	7.29	%	6.57	%
Allowance for loan losses to period-end loans retained, excluding PCI loans	4.14		6.58		6.47	

Net charge-offs and net charge-off rates for the year ended December 31, 2012, included \$744 million of charge-offs related to regulatory guidance. Excluding these charges-offs, net charge-offs for the year ended December 31, 2012, would have been \$1.8 billion, \$410 million and \$416 million for the home equity, prime mortgage, including option ARMs, and subprime mortgage portfolios, respectively. Net charge-off rates for the same period, excluding these charge-offs and PCI loans, would have been 2.41%, 0.97% and 4.65% for the home equity, prime mortgage, including option ARMs, and subprime mortgage portfolios, respectively. For further information, see Consumer Credit Portfolio on pages 138–149 of this Annual Report.

<sup>(b)</sup> The delinquency rate for PCI loans was 20.14%, 23.30%, and 28.20% at December 31, 2012, 2011 and 2010, respectively.

<sup>(c)</sup> Excludes PCI loans. Because the Firm is recognizing interest income on each pool of PCI loans, they are all considered to be performing.

<sup>(d)</sup> Nonperforming assets at December 31, 2012, included loans based upon regulatory guidance. For further information, see Consumer Credit Portfolio on pages 138–149 of this Annual Report.

## Card, Merchant Services &amp; Auto

## Selected income statement data

Year ended December 31,  
(in millions, except ratios)

	2012	2011	2010
Revenue			
Card income	\$4,092	\$4,127	\$3,514
All other income	1,009	765	764
Noninterest revenue	5,101	4,892	4,278
Net interest income	13,669	14,249	16,194
Total net revenue	18,770	19,141	20,472
Provision for credit losses	3,953	3,621	8,570
Noninterest expense	8,216	8,045	7,178
Income before income tax expense	6,601	7,475	4,724
Net income	\$4,007	\$4,544	\$2,872
Overhead ratio	44	% 42	% 35

2012 compared with 2011

Card, Merchant Services & Auto net income was \$4.0 billion, a decrease of \$537 million, or 12%, compared with the prior year. The decrease was driven by lower net revenue and higher provision for credit losses.

Net revenue was \$18.8 billion, a decrease of \$371 million, or 2%, from the prior year. Net interest income was \$13.7 billion, down \$580 million, or 4%, from the prior year. The decrease was driven by narrower loan spreads and lower average loan balances, partially offset by lower revenue reversals associated with lower net charge-offs.

Noninterest revenue was \$5.1 billion, an increase of \$209 million, or 4%, from the prior year. The increase was driven by higher net interchange income, including lower partner revenue-sharing due to the impact of the Kohl's portfolio sale on April 1, 2011, and higher merchant servicing revenue, partially offset by higher amortization of loan origination costs.

The provision for credit losses was \$4.0 billion, compared with \$3.6 billion in the prior year. The current-year provision reflected lower net charge-offs and a \$1.6 billion reduction in the allowance for loan losses due to lower estimated losses. The prior-year provision included a \$3.9 billion reduction in the allowance for loan losses. The Credit Card net charge-off rate<sup>1</sup> was 3.94%, down from 5.40% in the prior year; and the 30+ day delinquency rate<sup>1</sup> was 2.10%, down from 2.81% in the prior year. The net charge-off rate would have been 3.87% absent a policy change on restructured loans that do not comply with their modified payment terms. The Auto net charge-off rate was 0.39%, up from 0.32% in the prior year, including \$53 million of charge-offs related to regulatory guidance. Excluding these charge-offs, the net charge-off rate would have been 0.28%.

Noninterest expense was \$8.2 billion, an increase of \$171 million, or 2%, from the prior year, driven by expenses related to a non-core product that is being exited and the write-off of intangible assets associated with a non-strategic relationship, partially offset by lower marketing expense.

2011 compared with 2010

Card, Merchant Services & Auto net income was \$4.5 billion, compared with \$2.9 billion in the prior year. The increase was driven primarily by lower net charge-offs, partially offset by a lower reduction in the allowance for loan losses compared with the prior year.

Net revenue was \$19.1 billion, a decrease of \$1.3 billion, or 7%, from the prior year. Net interest income was \$14.2 billion, down by \$1.9 billion, or 12%. The decrease was driven by lower average loan balances, the impact of legislative changes, and a decreased level of fees. These decreases were largely offset by lower revenue reversals associated with lower charge-offs. Noninterest revenue was \$4.9 billion, an increase of \$614 million, or 14%, from the prior year. The increase was driven by the transfer of the Commercial Card business to Card from CIB in the first

quarter of 2011, higher net interchange income, and lower partner revenue-sharing due to the impact of the Kohl's portfolio sale. These increases were partially offset by lower revenue from fee-based products. Excluding the impact of the Commercial Card business, noninterest revenue increased 8%.

The provision for credit losses was \$3.6 billion, compared with \$8.6 billion in the prior year. The current-year provision reflected lower net charge-offs and an improvement in delinquency rates, as well as a reduction of \$3.9 billion to the allowance for loan losses due to lower estimated losses. The prior-year provision included a reduction of \$6.2 billion to the allowance for loan losses. The Credit Card net charge-off rate<sup>1</sup> was 5.40%, down from 9.72% in the prior year; and the 30+ day delinquency rate<sup>1</sup> was 2.81%, down from 4.07% in the prior year. The Auto net charge-off rate was 0.32%, down from 0.63% in the prior year.

Noninterest expense was \$8.0 billion, an increase of \$867 million, or 12%, from the prior year, due to higher marketing expense and the inclusion of the Commercial Card business. Excluding the impact of the Commercial Card business, noninterest expense increased 8%.

In May 2009, the CARD Act was enacted. The changes required by the CARD Act were fully implemented by the end of the fourth quarter of 2010. The total estimated reduction in net income resulting from the CARD Act was approximately \$750 million and \$300 million in 2011 and 2010, respectively.

<sup>1</sup> The net charge-off and 30+ day delinquency rates presented for credit card loans, which include loans held-for-sale, are non-GAAP financial measures. Management uses this as an additional measure to assess the performance of the portfolio.

## Management's discussion and analysis

## Selected metrics

As of or for the year ended December 31,  
(in millions, except ratios and where otherwise  
noted)

## Selected balance sheet data (period-end)

## Loans:

	2012	2011	2010
Credit Card	\$ 127,993	\$ 132,277	\$ 137,676
Auto	49,913	47,426	48,367
Student	11,558	13,425	14,454
Total loans	\$ 189,464	\$ 193,128	\$ 200,497

## Selected balance sheet data (average)

Total assets	\$ 197,661	\$ 201,162	\$ 213,041
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## Loans:

Credit Card	125,464	128,167	144,367
Auto	48,413	47,034	47,603
Student	12,507	13,986	15,945
Total loans	\$ 186,384	\$ 189,187	\$ 207,915

## Business metrics

## Credit Card, excluding Commercial Card

Sales volume (in billions)	\$ 381.1	\$ 343.7	\$ 313.0
New accounts opened	6.7	8.8	11.3
Open accounts	64.5	65.2	90.7
Accounts with sales activity	30.6	30.7	39.9
% of accounts acquired online	51	% 32	% 15

## Merchant Services

Merchant processing volume (in billions)	\$ 655.2	\$ 553.7	\$ 469.3
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Total transactions (in billions)	29.5	24.4	20.5
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## Auto &amp; Student

Origination volume  
(in billions)

Auto	\$ 23.4	\$ 21.0	\$ 23.0
Student	0.2	0.3	1.9

The following are brief descriptions of selected business metrics within Card, Merchant Services & Auto.

Card Services includes the Credit Card and Merchant Services businesses.

Merchant Services is a business that processes transactions for merchants.

Total transactions – Number of transactions and authorizations processed for merchants.

Commercial Card provides a wide range of payment services to corporate and public sector clients worldwide through the commercial card products. Services include procurement, corporate travel and entertainment, expense management services and business-to-business payment solutions.

Sales volume - Dollar amount of cardmember purchases, net of returns.

Open accounts – Cardmember accounts with charging privileges.

Auto origination volume - Dollar amount of auto loans and leases originated.



## Selected metrics

As of or for the year ended December 31,  
(in millions, except ratios)

## Credit data and quality statistics

## Net charge-offs:

	2012	2011	2010
Credit Card	\$4,944	\$6,925	\$14,037
Auto <sup>(a)</sup>	188	152	298
Student	377	434	387
Total net charge-offs	\$5,509	\$7,511	\$14,722

## Net charge-off rate:

Credit Card <sup>(b)</sup>	3.95	% 5.44	% 9.73	%
Auto <sup>(a)</sup>	0.39	0.32	0.63	
Student <sup>(c)</sup>	3.01	3.10	2.61	
Total net charge-off rate	2.96	3.99	7.12	

## Delinquency rates

## 30+ day delinquency rate:

Credit Card <sup>(d)</sup>	2.10	2.81	4.14
Auto	1.25	1.13	1.22
Student <sup>(e)</sup>	2.13	1.78	1.53
Total 30+ day delinquency rate	1.87	2.32	3.23

90+ day delinquency rate – Credit Card<sup>(f)</sup>

	1.02	1.44	2.25
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Nonperforming assets<sup>(a)(f)</sup>

	\$265	\$228	\$269
Allowance for loan losses:			
Credit Card	\$5,501	\$6,999	\$11,034
Auto & Student	954	1,010	899
Total allowance for loan losses	\$6,455	\$8,009	\$11,933

Allowance for loan losses to period-end  
loans:

Credit Card <sup>(d)</sup>	4.30	% 5.30	% 8.14	%
Auto & Student	1.55	1.66	1.43	
Total allowance for loan losses to period-end loans	3.41	4.15	6.02	

Net charge-offs and net charge-off rates for the year ended December 31, 2012, included \$53 million of charge-offs related to regulatory guidance. Excluding these charge-offs, net charge-offs for the year ended December 31, 2012, <sup>(a)</sup>would have been \$135 million, and the net charge-off rate would have been 0.28%. Nonperforming assets at December 31, 2012, included \$51 million of loans based upon regulatory guidance.

Average credit card loans included loans held-for-sale of \$433 million, \$833 million and \$148 million for the years <sup>(b)</sup>ended December 31, 2012, 2011 and 2010, respectively. These amounts are excluded when calculating the net charge-off rate.

Average student loans included loans held-for-sale of \$1.1 billion for the year ended December 31, 2010. There <sup>(c)</sup>were no loans held-for-sale for all other periods. This amount is excluded when calculating the net charge-off rate.

Period-end credit card loans included loans held-for-sale of \$102 million and \$2.2 billion at December 31, <sup>(d)</sup>2011 and 2010, respectively. These amounts are excluded when calculating delinquency rates and the allowance for loan losses to period-end loans. There were no loans held-for-sale at December 31, 2012. No allowance for loan losses was recorded for these loans.

Excluded student loans insured by U.S. government agencies under the FFELP of \$894 million, \$989 million and <sup>(e)</sup>\$1.1 billion at December 31, 2012, 2011 and 2010, respectively, that are 30 or more days past

due. These amounts are excluded as reimbursement of insured amounts is proceeding normally.

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Nonperforming assets excluded student loans insured by U.S. government agencies under the FFELP of \$525 (f) million, \$551 million and \$625 million at December 31, 2012, 2011 and 2010, respectively, that are 90 or more days past due. These amounts are excluded as reimbursement of insured amounts is proceeding normally.

Card Services supplemental information

Year ended December 31, (in millions, except ratios)	2012		2011		2010	
Revenue						
Noninterest revenue	\$3,887		\$3,740		\$3,277	
Net interest income	11,611		12,084		13,886	
Total net revenue	15,498		15,824		17,163	
Provision for credit losses	3,444		2,925		8,037	
Noninterest expense	6,566		6,544		5,797	
Income before income tax expense	5,488		6,355		3,329	
Net income	\$3,344		\$3,876		\$2,074	
Percentage of average loans:						
Noninterest revenue	3.10	%	2.92	%	2.27	%
Net interest income	9.25		9.43		9.62	
Total net revenue	12.35		12.35		11.89	

## Management's discussion and analysis

## CORPORATE &amp; INVESTMENT BANK

The Corporate & Investment Bank ("CIB") offers a broad suite of investment banking, market-making, prime brokerage, and treasury and securities products and services to a global client base of corporations, investors, financial institutions, government and municipal entities. Within Banking, the CIB offers a full range of investment banking products and services in all major capital markets, including advising on corporate strategy and structure, capital-raising in equity and debt markets, as well as loan origination and syndication. Also included in Banking is Treasury Services, which includes transaction services, comprised primarily of cash management and liquidity solutions, and trade finance products. The Markets & Investor Services segment of the CIB is a global market-maker in cash securities and derivative instruments, and also offers sophisticated risk management solutions, prime brokerage, and research. Markets & Investor Services also includes the Securities Services business, a leading global custodian which holds, values, clears and services securities, cash and alternative investments for investors and broker-dealers, and manages depositary receipt programs globally.

## Selected income statement data

Year ended December 31,

(in millions)	2012	2011	2010
Revenue			
Investment banking fees	\$5,769	\$5,859	\$6,186
Principal transactions <sup>(a)</sup>	9,510	8,347	8,474
Lending- and deposit-related fees	1,948	2,098	2,075
Asset management, administration and commissions	4,693	4,955	5,110
All other income	1,184	1,264	1,044
Noninterest revenue	23,104	22,523	22,889
Net interest income	11,222	11,461	10,588
Total net revenue <sup>(b)</sup>	34,326	33,984	33,477
Provision for credit losses	(479)	(285)	(1,247)
Noninterest expense			
Compensation expense	11,313	11,654	12,418
Noncompensation expense	10,537	10,325	10,451
Total noninterest expense	21,850	21,979	22,869
Income before income tax expense	12,955	12,290	11,855
Income tax expense	4,549	4,297	4,137
Net income	\$8,406	\$7,993	\$7,718

(a) Included DVA on structured notes and derivative liabilities measured at fair value. DVA gains/(losses) were \$(930) million, \$1.4 billion and \$509 million for the years ended December 31, 2012, 2011 and 2010, respectively.

(b) Included tax-equivalent adjustments, predominantly due to income tax credits related to affordable housing and alternative energy investments, as well as tax-exempt income from municipal bond investments of \$2.0 billion, \$1.9 billion and \$1.7 billion for the years ended December 31, 2012, 2011 and 2010, respectively.

## Selected income statement data

Year ended December 31,

(in millions, except ratios)	2012	2011	2010
Financial ratios			
Return on common equity <sup>(a)</sup>	18	% 17	% 17
Overhead ratio	64	65	68
Compensation expense as a percentage of total net revenue <sup>(b)</sup>	33	34	37



Revenue by business			
Advisory	\$1,491	\$1,792	\$1,469
Equity underwriting	1,026	1,181	1,589
Debt underwriting	3,252	2,886	3,128
Total investment banking fees	5,769	5,859	6,186
Treasury Services	4,249	3,841	3,698
Lending	1,331	1,054	811
Total Banking	11,349	10,754	10,695
Fixed Income Markets <sup>(c)</sup>	15,412	14,784	14,738
Equity Markets	4,406	4,476	4,582
Securities Services	4,000	3,861	3,683
Credit Adjustments & Other <sup>(d)(e)</sup>	(841	) 109	(221
Total Markets & Investor Services	22,977	23,230	22,782
Total net revenue	\$34,326	\$33,984	\$33,477

(a) Return on equity excluding DVA, a non-GAAP financial measure, was 19%, 15% and 16% for the years ended December 31, 2012, 2011 and 2010, respectively.

Compensation expense as a percentage of total net revenue excluding DVA, a non-GAAP financial measure, was 32%, 36% and 38% for the years ended December 31, 2012, 2011 and 2010, respectively. In addition, compensation expense as a percent of total net revenue for the year ended December 31, 2010, excluding both DVA and the payroll tax expense related to the U.K. Bank Payroll Tax on certain compensation awarded from December 9, 2009, to April 5, 2010, to relevant banking employees, which is a non-GAAP financial measure, was 36%.

(c) Includes results of the synthetic credit portfolio that was transferred from the CIO effective July 2, 2012.

Primarily includes credit portfolio credit valuation adjustments (“CVA”) net of associated hedging activities; DVA on structured notes and derivative liabilities; and nonperforming derivative receivable results effective in the first quarter of 2012 and thereafter.

(d) Included DVA on structured notes and derivative liabilities measured at fair value. DVA gains/(losses) were \$(930) million, \$1.4 billion and \$509 million for the years ended December 31, 2012, 2011 and 2010, respectively.

CIB provides several non-GAAP financial measures which exclude the impact of DVA on: net revenue, net income, compensation ratio, and return on equity. The ratio for the allowance for loan losses to end-of-period loans is calculated excluding the impact of consolidated Firm-administered multi-seller conduits and trade finance, to provide a more meaningful assessment of CIB's allowance coverage ratio. These measures are used by management to assess the underlying performance of the business and for comparability with peers.

2012 compared with 2011

Net income was \$8.4 billion, up 5% compared with the prior year. These results primarily reflected slightly higher net revenue compared with 2011, lower noninterest expense and a larger benefit from the provision for credit losses. Net revenue included a \$930 million loss from DVA on structured notes and derivative liabilities resulting from the tightening of the Firm's credit spreads. Excluding the impact of DVA, net revenue was \$35.3 billion and net income was \$9.0 billion, compared with \$32.5 billion and \$7.1 billion in the prior year, respectively.

Net revenue was \$34.3 billion, compared with \$34.0 billion in the prior year. Banking revenues were \$11.3 billion, compared with \$10.8 billion in the prior year. Investment banking fees were \$5.8 billion, down 2% from the prior year; these consisted of record debt underwriting fees of \$3.3 billion (up 13%), advisory fees of \$1.5 billion (down 17%) and equity underwriting fees of \$1.0 billion (down 13%). Industry-wide debt capital markets volumes were at their second highest annual level since 2006, as the low rate environment continued to fuel issuance and refinancing activity. In contrast there was lower industry-wide announced mergers and acquisitions activity, while industry-wide equity underwriting volumes remained steady. Treasury Services revenue was a record \$4.2 billion compared with \$3.8 billion in the prior year driven by continued deposit balance growth and higher average trade loans outstanding during the year. Lending revenue was \$1.3 billion, compared with \$1.1 billion in the prior year due to higher net interest income on increased average retained loans as well as higher fees on lending-related commitments. This was partially offset by higher fair value losses on credit risk-related hedges of the retained loan portfolio.

Markets and Investor Services revenue was \$23.0 billion compared to \$23.2 billion in the prior year. Combined Fixed Income and Equity Markets revenue was \$19.8 billion, up from \$19.3 billion the prior year as client revenue remained strong across most products, with particular strength in rates-related products, which improved from the prior year.

2012 generally saw credit spread tightening and lower volatility in both the credit and equity markets compared with the prior year, during which macroeconomic concerns, including those in the Eurozone, caused credit spread widening and generally more volatile market conditions, particularly in the second half of the year. Securities Services revenue was \$4.0 billion compared with \$3.9

billion the prior year primarily driven by higher deposit balances. Assets under custody grew to a record \$18.8 trillion by the end of 2012, driven by both market appreciation as well as net inflows. Credit Adjustments & Other was a loss of \$841 million, driven predominantly by DVA, which was a loss of \$930 million due to the tightening of the Firm's credit spreads.

The provision for credit losses was a benefit of \$479 million, compared with a benefit of \$285 million in the prior year, as credit trends remained stable. The current-year benefit reflected recoveries and a net reduction in the allowance for credit losses, both related to the restructuring of certain nonperforming loans, current credit trends and other portfolio activities. Net recoveries were \$284 million, compared with net charge-offs of \$161 million in the prior year. Nonperforming loans were down 49% from the prior year.

Noninterest expense was \$21.9 billion, down 1%, driven primarily by lower compensation expense.

Return on equity was 18% on \$47.5 billion of average allocated capital.

2011 compared with 2010

Net income was \$8.0 billion, up 4% compared with the prior year. These results primarily reflected higher net revenue compared with 2010, and lower noninterest expense, largely offset by a reduced benefit from the provision for credit losses. Net revenue included a \$1.4 billion gain from DVA on structured notes and derivative liabilities resulting from the widening of the Firm's credit spreads. Excluding the impact of DVA, net revenue was \$32.5 billion and net income was \$7.1 billion, compared with \$33.0 billion and \$7.4 billion in the prior year, respectively.

Net revenue was \$34.0 billion, compared with \$33.5 billion in the prior year. Banking revenues were \$10.8 billion, compared with \$10.7 billion in the prior year. Investment banking fees were \$5.9 billion, down 5% from the prior

year; these consisted of debt underwriting fees of \$2.9 billion (down 8%), advisory fees of \$1.8 billion (up 22%) and equity underwriting fees of \$1.2 billion (down 26%). Treasury Services revenue was \$3.8 billion compared with \$3.7 billion in the prior year driven by higher deposit balances as well as higher trade loan volumes, partially offset by the transfer of the Commercial Card business to Card in the first quarter of 2011. Lending revenue was \$1.1 billion, compared with \$811 million in the prior year, driven by lower fair value losses on hedges of the retained loan portfolio.

Markets and Investor Services revenue was \$23.2 billion compared with \$22.8 billion the year prior. Fixed Income Markets revenue was \$14.8 billion, compared with \$14.7 billion in the prior year, with continued solid client revenue. Equity Markets revenue was \$4.5 billion compared with \$4.6 billion the prior year on slightly lower performance. Securities Services revenue was \$3.9 billion compared with \$3.7 billion the prior year driven by higher

## Management's discussion and analysis

net interest income due to higher deposit balances and net inflows of assets under custody. Credit Adjustments & Other was a gain of \$109 million compared with a loss of \$221 million in the prior year.

The provision for credit losses was a benefit of \$285 million, compared with a benefit of \$1.2 billion in the prior year. The benefit in 2011 reflected a net reduction in the allowance for loan losses largely driven by portfolio activity, partially offset by new loan growth. Net charge-offs were \$161 million, compared with \$736 million in the prior year. Noninterest expense was \$22.0 billion, down 4% driven primarily by lower compensation expense compared with the prior period which included the impact of the U.K. Bank Payroll Tax. Noncompensation expense was also lower compared with the prior year, which included higher litigation reserves. This decrease was partially offset by additional operating expense related to business growth as well as expenses related to exiting unprofitable business. Return on equity was 17% on \$47.0 billion of average allocated capital.

## Selected metrics

As of or for the year ended December 31,  
(in millions, except headcount)

Selected balance sheet data (period-end)	2012	2011	2010
Assets	\$876,107	\$845,095	\$870,631
Loans:			
Loans retained <sup>(a)</sup>	109,501	111,099	80,208
Loans held-for-sale and loans at fair value	5,749	3,016	3,851
Total loans	115,250	114,115	84,059
Equity	47,500	47,000	46,500
Selected balance sheet data (average)			
Assets	\$854,670	\$868,930	\$774,295
Trading assets-debt and equity instruments	312,944	348,234	309,383
Trading assets-derivative receivables	74,874	73,200	70,286
Loans:			
Loans retained <sup>(a)</sup>	110,100	91,173	77,620
Loans held-for-sale and loans at fair value	3,502	3,221	3,268
Total loans	113,602	94,394	80,888
Equity	47,500	47,000	46,500
Headcount	52,151	53,557	55,142

(a)Loans retained includes credit portfolio loans, trade finance loans, other held-for-investment loans and overdrafts.

## Selected metrics

As of or for the year ended December 31,  
(in millions, except ratios and where  
otherwise noted)

Credit data and quality statistics	2012	2011	2010
Net charge-offs/(recoveries)	\$(284)	\$161	\$736
Nonperforming assets:			
Nonaccrual loans:			
Nonaccrual loans retained <sup>(a)(b)</sup>	535	1,039	3,171
Nonaccrual loans held-for-sale and loans at fair value	82	166	460
Total nonaccrual loans	617	1,205	3,631
Derivative receivables <sup>(c)</sup>	239	293	159
Assets acquired in loan satisfactions	64	79	117

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Total nonperforming assets	920	1,577	3,907		
Allowance for credit losses:					
Allowance for loan losses	1,300	1,501	1,928		
Allowance for lending-related commitments	473	467	498		
Total allowance for credit losses	1,773	1,968	2,426		
Net charge-off/(recovery) rate <sup>(a)</sup>	(0.26	)% 0.18	% 0.95		%
Allowance for loan losses to period-end loans retained <sup>(a)</sup>	1.19	1.35	2.40		
Allowance for loan losses to period-end loans retained, excluding trade finance and conduits <sup>(d)</sup>	2.52	3.06	4.90		
Allowance for loan losses to nonaccrual loans retained <sup>(a)(b)</sup>	243	144	61		
Nonaccrual loans to total period-end loans	0.54	1.06	4.32		
Business metrics					
Assets under custody (“AUC”) by asset class (period-end) in billions:					
Fixed Income	\$ 11,745	\$ 10,926	\$ 10,364		
Equity	5,637	4,878	4,850		
Other <sup>(e)</sup>	1,453	1,066	906		
Total AUC	\$ 18,835	\$ 16,870	\$ 16,120		
Client deposits and other third party liabilities (average) <sup>(f)</sup>	\$ 355,766	\$ 318,802	\$ 248,451		
Trade finance loans (period-end)	35,783	36,696	21,156		

(a) Loans retained includes credit portfolio loans, trade finance loans, other held-for-investment loans and overdrafts.

(b) Allowance for loan losses of \$153 million, \$263 million and \$1.1 billion were held against these nonaccrual loans at December 31, 2012, 2011 and 2010, respectively.

Prior to 2012, reported amounts had only included defaulted derivatives; effective in the first quarter of 2012,

(c) reported amounts included both defaulted derivatives as well as derivatives that have been risk rated as nonperforming.

Management uses allowance for loan losses to period-end loans retained, excluding trade finance and conduits, a

(d) non-GAAP financial measure, as a more relevant metric to reflect the allowance coverage of the retained lending portfolio.

(e) Consists of mutual funds, unit investment trusts, currencies, annuities, insurance contracts, options and nonsecurities contracts.

(f) Client deposits and other third party liabilities pertain to the Treasury Services and Securities Services businesses, and include deposits, as well as deposits that are swept to on-balance sheet liabilities (e.g., commercial paper, federal funds purchased and securities loaned or sold under repurchase agreements) as part of their client cash management program.

Market shares and rankings<sup>(a)</sup>

Year ended December 31,	2012		2011		2010	
	Market Share	Rankings	Market Share	Rankings	Market Share	Rankings
Global investment banking fees <sup>(b)</sup>	7.6%	#1	8.1%	#1	7.6%	#1
Debt, equity and equity-related						
Global	7.2	1	6.7	1	7.2	1
U.S.	11.5	1	11.1	1	11.1	1
Syndicated loans						
Global	9.6	1	10.8	1	8.5	2
U.S.	17.6	1	21.2	1	19.1	2
Long-term debt <sup>(c)</sup>						
Global	7.1	1	6.7	1	7.2	2
U.S.	11.6	1	11.2	1	10.9	2
Equity and equity-related						
Global <sup>(d)</sup>	7.8	4	6.8	3	7.3	3
U.S.	10.4	5	12.5	1	13.1	2
Announced M&A <sup>(e)</sup>						
Global	18.5	2	18.3	2	15.9	4
U.S.	21.5	2	26.7	2	21.9	3

(a) Source: Dealogic. Global Investment Banking fees reflects the ranking of fees and market share. The remaining rankings reflects transaction volume and market share. Global announced M&A is based on transaction value at announcement; because of joint M&A assignments, M&A market share of all participants will add up to more than 100%. All other transaction volume-based rankings are based on proceeds, with full credit to each book manager/equal if joint.

(b) Global investment banking fees rankings exclude money market, short-term debt and shelf deals.

(c) Long-term debt rankings include investment-grade, high-yield, supranationals, sovereigns, agencies, covered bonds, asset-backed securities (“ABS”) and mortgage-backed securities; and exclude money market, short-term debt, and U.S. municipal securities.

(d) Global equity and equity-related ranking includes rights offerings and Chinese A-Shares.

(e) Announced M&A reflects the removal of any withdrawn transactions. U.S. announced M&A represents any U.S. involvement ranking.

According to Dealogic, the Firm was ranked #1 in Global Investment Banking Fees generated during 2012, based on revenue; #1 in Global Debt, Equity and Equity-related; #1 in Global Syndicated Loans; #1 in Global Long-Term Debt; #4 in Global Equity and Equity-related; and #2 in Global Announced M&A, based on volume.

## International metrics

Year ended December 31,  
(in millions)

	2012	2011	2010
Total net revenue <sup>(a)</sup>			
Europe/Middle East/Africa	\$10,639	\$11,102	\$9,740
Asia/Pacific	4,100	4,589	4,775
Latin America/Caribbean	1,524	1,409	1,154
Total international net revenue	16,263	17,100	15,669
North America	18,063	16,884	17,808
Total net revenue	\$34,326	\$33,984	\$33,477

Loans (period-end)<sup>(a)</sup>

Europe/Middle East/Africa	\$30,266	\$29,484	\$21,072
Asia/Pacific	27,193	27,803	18,251
Latin America/Caribbean	10,220	9,692	5,928
Total international loans	67,679	66,979	45,251
North America	41,822	44,120	34,957
Total loans	\$109,501	\$111,099	\$80,208

## Client deposits and other third-party liabilities

(average)<sup>(a)(b)</sup>

Europe/Middle East/Africa	\$127,326	\$123,920	\$102,014
Asia/Pacific	51,180	43,524	32,862
Latin America/Caribbean	11,052	12,625	11,558
Total international	\$189,558	\$180,069	\$146,434
North America	166,208	138,733	102,017
Total client deposits and other third-party liabilities	\$355,766	\$318,802	\$248,451

AUC (period-end) (in billions)<sup>(a)</sup>

North America	\$10,504	\$9,735	\$9,836
All other regions	8,331	7,135	6,284
Total AUC	\$18,835	\$16,870	\$16,120

Total net revenue is based primarily on the domicile of the client or location of the trading desk, as applicable.

(a) Loans outstanding (excluding loans-held-for-sale and loans carried at fair value), client deposits and AUC are based predominantly on the domicile of the client.

Client deposits and other third-party liabilities pertain to the Treasury Services and Securities Services businesses,

(b) and include deposits, as well as deposits that are swept to on-balance sheet liabilities (e.g., commercial paper, federal funds purchased and securities loaned or sold under repurchase agreements) as part of their client cash management program.

## Management's discussion and analysis

## COMMERCIAL BANKING

Commercial Banking delivers extensive industry knowledge, local expertise and dedicated service to U.S. and U.S. multinational clients, including corporations, municipalities, financial institutions and non-profit entities with annual revenue generally ranging from \$20 million to \$2 billion. CB provides financing to real estate investors and owners. Partnering with the Firm's other businesses, CB provides comprehensive financial solutions, including lending, treasury services, investment banking and asset management to meet its clients' domestic and international financial needs.

## Selected income statement data

Year ended December 31, (in millions, except ratios)	2012	2011	2010
<b>Revenue</b>			
Lending- and deposit-related fees	\$1,072	\$1,081	\$1,099
Asset management, administration and commissions	130	136	144
All other income <sup>(a)</sup>	1,081	978	957
Noninterest revenue	2,283	2,195	2,200
Net interest income	4,542	4,223	3,840
Total net revenue <sup>(b)</sup>	6,825	6,418	6,040
Provision for credit losses	41	208	297
<b>Noninterest expense</b>			
Compensation expense <sup>(c)</sup>	1,014	936	863
Noncompensation expense <sup>(c)</sup>	1,348	1,311	1,301
Amortization of intangibles	27	31	35
Total noninterest expense	2,389	2,278	2,199
Income before income tax expense	4,395	3,932	3,544
Income tax expense	1,749	1,565	1,460
Net income	\$2,646	\$2,367	\$2,084
<b>Revenue by product</b>			
Lending <sup>(d)</sup>	\$3,675	\$3,455	\$2,749
Treasury services <sup>(d)</sup>	2,428	2,270	2,632
Investment banking	545	498	466
Other	177	195	193
Total Commercial Banking revenue	\$6,825	\$6,418	\$6,040
Investment banking revenue, gross	\$1,597	\$1,421	\$1,335
<b>Revenue by client segment</b>			
Middle Market Banking	\$3,334	\$3,145	\$3,060
Commercial Term Lending	1,194	1,168	1,023
Corporate Client Banking	1,456	1,261	1,154
Real Estate Banking	438	416	460
Other	403	428	343
Total Commercial Banking revenue	\$6,825	\$6,418	\$6,040
<b>Financial ratios</b>			
Return on common equity	28	% 30	% 26
Overhead ratio	35	35	36

(a) CB client revenue from investment banking products and commercial card transactions is included in all other income.

(b) Included tax-equivalent adjustments, predominantly due to income tax credits related to equity investments in designated community development entities that provide loans to qualified businesses in low-



income communities, as well as tax-exempt income from municipal bond activity, of \$381 million, \$345 million, and \$238 million for the years ended December 31, 2012, 2011 and 2010, respectively.

Effective July 1, 2012, certain Treasury Services product sales staff supporting CB were transferred from CIB to (c) CB. As a result, compensation expense for these sales staff is now reflected in CB's compensation expense rather than as an allocation from CIB in noncompensation expense. CB's and CIB's previously reported headcount, compensation expense and noncompensation expense have been revised to reflect this transfer.

Effective January 1, 2011, product revenue from commercial card and standby letters of credit transactions was (d) included in lending. For the years ended December 31, 2012 and 2011, the impact of the change was \$434 million and \$438 million, respectively. For the year ended December 31, 2010, it was reported in treasury services.

CB revenue comprises the following:

Lending includes a variety of financing alternatives, which are predominantly provided on a basis secured by receivables, inventory, equipment, real estate or other assets. Products include term loans, revolving lines of credit, bridge financing, asset-based structures, leases, commercial card products and standby letters of credit.

Treasury services includes revenue from a broad range of products and services that enable CB clients to manage payments and receipts, as well as invest and manage funds.

Investment banking includes revenue from a range of products providing CB clients with sophisticated capital-raising alternatives, as well as balance sheet and risk management tools through advisory, equity underwriting, and loan syndications. Revenue from Fixed income and Equity market products available to CB clients is also included.

Investment banking revenue, gross, represents total revenue related to investment banking products sold to CB clients.

Other product revenue primarily includes tax-equivalent adjustments generated from Community Development Banking activity and certain income derived from principal transactions.

Commercial Banking is divided into four primary client segments for management reporting purposes: Middle Market Banking, Commercial Term Lending, Corporate Client Banking, and Real Estate Banking.

Middle Market Banking covers corporate, municipal, financial institution and non-profit clients, with annual revenue generally ranging between \$20 million and \$500 million.

Commercial Term Lending primarily provides term financing to real estate investors/owners for multifamily properties as well as financing office, retail and industrial properties.

Corporate Client Banking covers clients with annual revenue generally ranging between \$500 million and \$2 billion and focuses on clients that have broader investment banking needs.

Real Estate Banking provides full-service banking to investors and developers of institutional-grade real estate properties.

Other primarily includes lending and investment activity within the Community Development Banking and Chase Capital businesses.

#### 2012 compared with 2011

Record net income was \$2.6 billion, an increase of \$279 million, or 12%, from the prior year. The improvement was driven by an increase in net revenue and a decrease in the provision for credit losses, partially offset by higher noninterest expense.

Net revenue was a record \$6.8 billion, an increase of \$407 million, or 6%, from the prior year. Net interest income was \$4.5 billion, up by \$319 million, or 8%, driven by growth in loans and client deposits, partially offset by spread compression. Loan growth was strong across all client segments and industries. Noninterest revenue was \$2.3 billion, up by \$88 million, or 4%, compared with the prior year, largely driven by increased investment banking revenue. Revenue from Middle Market Banking was \$3.3 billion, an increase of \$189 million, or 6%, from the prior year driven by higher loans and client deposits, partially offset by lower spreads from lending and deposit products. Revenue from Commercial Term Lending was \$1.2 billion, an increase of \$26 million, or 2%. Revenue from Corporate Client Banking was \$1.5 billion, an increase of \$195 million, or 15%, driven by growth in loans and client deposits and higher revenue from investment banking products, partially offset by lower lending spreads. Revenue from Real Estate Banking was \$438 million, an increase of \$22 million, or 5%, partially driven by higher loan balances. The provision for credit losses was \$41 million, compared with \$208 million in the prior year. Net charge-offs were \$35 million (0.03% net charge-off rate) compared with net charge-offs of \$187 million (0.18% net charge-off rate) in 2011. The decrease in the provision and net charge-offs was largely driven by improving trends in the credit quality of the portfolio. Nonaccrual loans were \$673 million, down by \$380 million or 36%, due to repayments and loan sales. The allowance for loan losses to period-end retained loans was 2.06%, down from 2.34%. Noninterest expense was \$2.4 billion, an increase of \$111 million, or 5% from the prior year, reflecting higher compensation expense driven by expansion, portfolio growth and increased regulatory requirements.

#### 2011 compared with 2010

Record net income was \$2.4 billion, an increase of \$283 million, or 14%, from the prior year. The improvement was driven by higher net revenue and a reduction in the provision for credit losses, partially offset by an increase in noninterest expense.

Net revenue was a record \$6.4 billion, up by \$378 million, or 6%, compared with the prior year. Net interest income was \$4.2 billion, up by \$383 million, or 10%, driven by growth in client deposits and loan balances partially offset by spread compression on client deposits. Noninterest revenue was \$2.2 billion, flat compared with the prior year. On a client segment basis, revenue from Middle Market Banking was \$3.1 billion, an increase of \$85 million, or 3%, from the prior year due to higher client deposits and loan balances, partially offset by spread compression on client deposits and lower lending- and deposit-related fees. Revenue from Commercial Term Lending was \$1.2 billion, an increase of \$145 million, or 14%, and includes the full year impact of the purchase of a \$3.5 billion loan portfolio during the third quarter of 2010. Revenue from Corporate Client Banking was \$1.3 billion, an increase of \$107 million, or 9% due to growth in client deposits and loan balances and higher lending- and deposit-related fees, partially offset by spread compression on client deposits. Revenue from Real Estate Banking was \$416 million, a decrease of \$44 million, or 10%, driven by a reduction in loan balances and lower gains on sales of loans and other real estate owned, partially offset by wider loan spreads.

The provision for credit losses was \$208 million, compared with \$297 million in the prior year. Net charge-offs were \$187 million (0.18% net charge-off rate) compared with \$909 million (0.94% net charge-off rate) in the prior year. The reduction was largely related to commercial real estate. The allowance for loan losses to period-end loans retained was 2.34%, down from 2.61% in the prior year. Nonaccrual loans were \$1.1 billion, down by \$947 million, or 47% from the prior year, largely as a result of commercial real estate repayments and loans sales. Noninterest expense was \$2.3 billion, an increase of \$79 million, or 4% from the prior year, reflecting higher headcount-related expense.



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Management's discussion and analysis

Selected metrics

As of or for the year ended December 31, (in millions, except headcount and ratios)	2012	2011	2010
Selected balance sheet data (period-end)			
Total assets	\$ 181,502	\$ 158,040	\$ 142,646
Loans:			
Loans retained	126,996	111,162	97,900
Loans held-for-sale and loans at fair value	1,212	840	1,018
Total loans	\$ 128,208	\$ 112,002	\$ 98,918
Equity	9,500	8,000	8,000

Period-end loans by client segment

Middle Market Banking	\$ 50,701	\$ 44,437	\$ 37,942
Commercial Term Lending	43,512	38,583	37,928
Corporate Client Banking	21,558	16,747	11,678
Real Estate Banking	8,552	8,211	7,591
Other	3,885	4,024	3,779
Total Commercial Banking loans	\$ 128,208	\$ 112,002	\$ 98,918

Selected balance sheet data (average)

Total assets	\$ 165,111	\$ 146,230	\$ 133,654
Loans:			
Loans retained	119,218	103,462	96,584
Loans held-for-sale and loans at fair value	882	745	422
Total loans	\$ 120,100	\$ 104,207	\$ 97,006
Client deposits and other third-party liabilities <sup>(a)</sup>	195,912	174,729	138,862
Equity	9,500	8,000	8,000

Average loans by client segment

Middle Market Banking	\$ 47,198	\$ 40,759	\$ 35,059
Commercial Term Lending	40,872	38,107	36,978
Corporate Client Banking	19,383	13,993	11,926
Real Estate Banking	8,562	7,619	9,344
Other	4,085	3,729	3,699
Total Commercial Banking loans	\$ 120,100	\$ 104,207	\$ 97,006

Headcount <sup>(b)</sup>	6,120	5,787	5,126
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As of or for the year ended December 31, (in millions, except headcount and ratios)	2012	2011	2010
Credit data and quality statistics			
Net charge-offs	\$ 35	\$ 187	\$ 909
Nonperforming assets			
Nonaccrual loans:			
Nonaccrual loans retained <sup>(c)</sup>	644	1,036	1,964
Nonaccrual loans held-for-sale and loans held at fair value	29	17	36
Total nonaccrual loans	673	1,053	2,000

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Assets acquired in loan satisfactions	14	85	197
Total nonperforming assets	687	1,138	2,197
Allowance for credit losses:			
Allowance for loan losses	2,610	2,603	2,552
Allowance for lending-related commitments	183	189	209
Total allowance for credit losses	2,793	2,792	2,761
Net charge-off rate <sup>(d)</sup>	0.03	% 0.18	% 0.94
Allowance for loan losses to period-end loans retained	2.06	2.34	2.61
Allowance for loan losses to nonaccrual loans retained <sup>(c)</sup>	405	251	130
Nonaccrual loans to total period-end loans	0.52	0.94	2.02

Client deposits and other third-party liabilities include deposits, as well as deposits that are swept to on-balance (a) sheet liabilities (e.g., commercial paper, federal funds purchased, and securities loaned or sold under repurchase agreements) as part of client cash management programs.

(b) Effective July 1, 2012, certain Treasury Services product sales staff supporting CB were transferred from CIB to CB. For further discussion of this transfer, see footnote (c) on page 96 of this Annual Report.

(c) Allowance for loan losses of \$107 million, \$176 million and \$340 million was held against nonaccrual loans retained at December 31, 2012, 2011 and 2010, respectively.

(d) Loans held-for-sale and loans at fair value were excluded when calculating the net charge-off rate.

## ASSET MANAGEMENT

Asset Management, with client assets of \$2.1 trillion, is a global leader in investment and wealth management. AM clients include institutions, high-net-worth individuals and retail investors in every major market throughout the world. AM offers investment management across all major asset classes including equities, fixed income, alternatives and money market funds. AM also offers multi-asset investment management, providing solutions to a broad range of clients' investment needs. For individual investors, AM also provides retirement products and services, brokerage and banking services including trust and estate, loans, mortgages and deposits. The majority of AM's client assets are in actively managed portfolios.

Selected income statement data

Year ended December 31, (in millions, except ratios)	2012	2011	2010	
<b>Revenue</b>				
Asset management, administration and commissions	\$7,041	\$6,748	\$6,374	
All other income	806	1,147	1,111	
Noninterest revenue	7,847	7,895	7,485	
Net interest income	2,099	1,648	1,499	
Total net revenue	9,946	9,543	8,984	
Provision for credit losses	86	67	86	
<b>Noninterest expense</b>				
Compensation expense	4,405	4,152	3,763	
Noncompensation expense	2,608	2,752	2,277	
Amortization of intangibles	91	98	72	
Total noninterest expense	7,104	7,002	6,112	
Income before income tax expense	2,756	2,474	2,786	
Income tax expense	1,053	882	1,076	
Net income	\$1,703	\$1,592	\$1,710	
<b>Revenue by client segment</b>				
Private Banking	\$5,426	\$5,116	\$4,860	
Institutional	2,386	2,273	2,180	
Retail	2,134	2,154	1,944	
Total net revenue	\$9,946	\$9,543	\$8,984	
<b>Financial ratios</b>				
Return on common equity	24	% 25	% 26	%
Overhead ratio	71	73	68	
Pretax margin ratio	28	26	31	

2012 compared with 2011

Net income was \$1.7 billion, an increase of \$111 million, or 7%, from the prior year. These results reflected higher net revenue, partially offset by higher noninterest expense and a higher provision for credit losses.

Net revenue was \$9.9 billion, an increase of \$403 million, or 4%, from the prior year. Noninterest revenue was \$7.8 billion, down \$48 million, or 1%, due to lower loan-related revenue and the absence of a prior-year gain on the sale of

an investment. These decreases were predominantly offset by net client inflows, higher valuations of seed capital investments, the effect of higher market levels, higher brokerage revenue and higher performance fees. Net interest income was \$2.1 billion, up \$451 million, or 27%, due to higher loan and deposit balances.

Revenue from Private Banking was \$5.4 billion, up 6% from the prior year due to higher net interest income from loan and deposit balances and higher brokerage revenue, partially offset by lower loan-related fee revenue. Revenue from Institutional was \$2.4 billion, up 5% due to net client inflows and the effect of higher market levels. Revenue

from Retail was \$2.1 billion, down 1% due to the absence of a prior-year gain on the sale of an investment, predominantly offset by higher valuations of seed capital investments and higher performance fees.

The provision for credit losses was \$86 million, compared with \$67 million in the prior year.

Noninterest expense was \$7.1 billion, an increase of \$102 million, or 1%, from the prior year, due to higher performance-based compensation and higher headcount-related expense, partially offset by the absence of non-client-related litigation expense.

2011 compared with 2010

Net income was \$1.6 billion, a decrease of \$118 million, or 7%, from the prior year. These results reflected higher noninterest expense, largely offset by higher net revenue and a lower provision for credit losses.

Net revenue was \$9.5 billion, an increase of \$559 million, or 6%, from the prior year. Noninterest revenue was \$7.9 billion, up \$410 million, or 5%, due to net inflows to products with higher margins and the effect of higher market levels, partially offset by lower performance fees and lower loan-related revenue. Net interest income was \$1.6 billion, up \$149 million, or 10%, due to higher deposit and loan balances, partially offset by narrower deposit spreads.

Revenue from Private Banking was \$5.1 billion, up 5% from the prior year due to higher deposit and loan balances and higher brokerage revenue, partially offset by narrower deposit spreads and lower loan-related revenue. Revenue from Institutional was \$2.3 billion, up 4% due to net inflows to products with higher margins and the effect of higher market levels. Revenue from Retail was \$2.2 billion, up 11% due to net inflows to products with higher margins and the effect of higher market levels.

The provision for credit losses was \$67 million, compared with \$86 million in the prior year.

Noninterest expense was \$7.0 billion, an increase of \$890 million, or 15%, from the prior year, due to higher headcount-related expense and non-client-related litigation, partially offset by lower performance-based compensation.

## Management's discussion and analysis

## Selected metrics

## Business metrics

As of or for the year ended December 31, (in millions, except headcount, ranking data, ratios and where otherwise noted)	2012	2011	2010		
Number of:					
Client advisors <sup>(a)</sup>	2,821	2,883	2,696		
Retirement planning services participants (in thousands)	1,961	1,798	1,580		
% of customer assets in 4 & 5 Star Funds <sup>(b)</sup>	47	% 43	% 49		%
% of AUM in 1 <sup>st</sup> and 2 <sup>nd</sup> quartiles: <sup>(c)</sup>					
1 year	67	48	67		
3 years	74	72	72		
5 years	76	78	80		
Selected balance sheet data (period-end)					
Total assets	\$108,999	\$86,242	\$68,997		
Loans <sup>(d)</sup>	80,216	57,573	44,084		
Equity	7,000	6,500	6,500		
Selected balance sheet data (average)					
Total assets	\$97,447	\$76,141	\$65,056		
Loans	68,719	50,315	38,948		
Deposits	129,208	106,421	86,096		
Equity	7,000	6,500	6,500		
Headcount	18,480	18,036	16,918		
Credit data and quality statistics					
Net charge-offs	\$64	\$92	\$76		
Nonaccrual loans	250	317	375		
Allowance for credit losses:					
Allowance for loan losses	248	209	267		
Allowance for lending-related commitments	5	10	4		
Total allowance for credit losses	253	219	271		
Net charge-off rate	0.09	% 0.18	% 0.20		%
Allowance for loan losses to period-end loans	0.31	0.36	0.61		
Allowance for loan losses to nonaccrual loans	99	66	71		
Nonaccrual loans to period-end loans	0.31	0.55	0.85		
(a) Effective January 1, 2012, the previously disclosed separate metric for client advisors and JPMorgan Securities brokers were combined into one metric that reflects the number of Private Banking client-facing representatives.					
(b) Derived from Morningstar for the U.S., the U.K., Luxembourg, France, Hong Kong and Taiwan; and Nomura for Japan.					
(c) Quartile ranking sourced from: Lipper for the U.S. and Taiwan; Morningstar for the U.K., Luxembourg, France and Hong Kong; and Nomura for Japan.					
(d) Included \$10.9 billion of prime mortgage loans reported in the Consumer, excluding credit card, loan portfolio at December 31, 2012.					

AM's client segments comprise the following:



Private Banking offers investment advice and wealth management services to high- and ultra-high-net-worth individuals, families, money managers, business owners and small corporations worldwide, including investment management, capital markets and risk management, tax and estate planning, banking, capital raising and specialty-wealth advisory services.

Institutional brings comprehensive global investment services – including asset management, pension analytics, asset-liability management and active risk-budgeting strategies – to corporate and public institutions, endowments, foundations, non-profit organizations and governments worldwide.

Retail provides worldwide investment management services and retirement planning and administration, through financial intermediaries and direct distribution of a full range of investment products.

J.P. Morgan Asset Management has two high-level measures of its overall fund performance.

- Percentage of assets under management in funds rated 4- and 5-stars (three years). Mutual fund rating services rank funds based on their risk-adjusted performance over various periods. A 5-star rating is the best and represents the top 10% of industry-wide ranked funds. A 4-star rating represents the next 22% of industry wide ranked funds. The worst rating is a 1-star rating.
- Percentage of assets under management in first- or second- quartile funds (one, three and five years). Mutual fund rating services rank funds according to a peer-based performance system, which measures returns according to specific time and fund classification (small-, mid-, multi- and large-cap).

## Assets under supervision

## 2012 compared with 2011

Assets under supervision were \$2.1 trillion at December 31, 2012, an increase of \$174 billion, or 9%, from the prior year. Assets under management were \$1.4 trillion, an increase of \$90 billion, or 7%, due to the effect of higher market levels and net inflows to long-term products, partially offset by net outflows from liquidity products. Custody, brokerage, administration and deposit balances were \$669 billion, up \$84 billion, or 14%, due to the effect of higher market levels and custody and brokerage inflows.

## 2011 compared with 2010

Assets under supervision were \$1.9 trillion at December 31, 2011, an increase of \$81 billion, or 4%, from the prior year. Assets under management were \$1.3 trillion, an increase of \$38 billion, or 3%. Both increases were due to net inflows to long-term and liquidity products, partially offset by the impact of lower market levels. Custody, brokerage, administration and deposit balances were \$585 billion, up by \$43 billion, or 8%, due to deposit and custody inflows.

## Assets under supervision

December 31, (in billions)	2012	2011	2010
Assets by asset class			
Liquidity	\$475	\$515	\$497
Fixed income	386	336	289
Equity and multi-asset	447	372	404
Alternatives	118	113	108
Total assets under management	1,426	1,336	1,298
Custody/brokerage/administration/deposits	669	585	542
Total assets under supervision	\$2,095	\$1,921	\$1,840
Assets by client segment			
Private Banking	\$318	\$291	\$284
Institutional	741	722	703
Retail	367	323	311
Total assets under management	\$1,426	\$1,336	\$1,298
Private Banking	\$877	\$781	\$731
Institutional	741	723	703
Retail	477	417	406
Total assets under supervision	\$2,095	\$1,921	\$1,840
Mutual fund assets by asset class			
Liquidity	\$410	\$458	\$446
Fixed income	136	107	92
Equity and multi-asset	180	147	169
Alternatives	5	8	7
Total mutual fund assets	\$731	\$720	\$714

## Year ended December 31,

## (in billions)

## Assets under management rollforward

	2012	2011	2010	
Beginning balance	\$1,336	\$1,298	\$1,249	
Net asset flows:				
Liquidity	(43	) 18	(89	)
Fixed income	30	40	50	
Equity, multi-asset and alternatives	30	13	19	
Market/performance/other impacts	73	(33	) 69	

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Ending balance, December 31	\$1,426	\$1,336	\$1,298
Assets under supervision rollforward			
Beginning balance	\$1,921	\$1,840	\$1,701
Net asset flows	60	123	28
Market/performance/other impacts	114	(42	) 111
Ending balance, December 31	\$2,095	\$1,921	\$1,840
International metrics			
Year ended December 31, (in billions, except where otherwise noted)	2012	2011	2010
Total net revenue (in millions) <sup>(a)</sup>			
Europe/Middle East/Africa	\$1,641	\$1,704	\$1,642
Asia/Pacific	967	971	925
Latin America/Caribbean	772	808	541
North America	6,566	6,060	5,876
Total net revenue	\$9,946	\$9,543	\$8,984
Assets under management			
Europe/Middle East/Africa	\$258	\$278	\$282
Asia/Pacific	114	105	111
Latin America/Caribbean	45	34	35
North America	1,009	919	870
Total assets under management	\$1,426	\$1,336	\$1,298
Assets under supervision			
Europe/Middle East/Africa	\$317	\$329	\$331
Asia/Pacific	160	139	147
Latin America/Caribbean	110	89	84
North America	1,508	1,364	1,278
Total assets under supervision	\$2,095	\$1,921	\$1,840

(a) Regional revenue is based on the domicile of the client.

## Management's discussion and analysis

## CORPORATE/PRIVATE EQUITY

The Corporate/Private Equity segment comprises Private Equity, Treasury, Chief Investment Office ("CIO"), and Other Corporate, which includes corporate staff units and expense that is centrally managed. Treasury and CIO are predominantly responsible for measuring, monitoring, reporting and managing the Firm's liquidity, funding, capital and structural interest rate and foreign exchange risks. The corporate staff units include Central Technology and Operations, Internal Audit, Executive, Finance, Human Resources, Legal & Compliance, Global Real Estate, General Services, Operational Control, Risk Management, and Corporate Responsibility & Public Policy. Other centrally managed expense includes the Firm's occupancy and pension-related expense that are subject to allocation to the businesses.

## Selected income statement data

Year ended December 31, (in millions, except headcount)	2012	2011	2010	
Revenue				
Principal transactions	\$(4,268	) \$1,434	\$2,208	
Securities gains	2,024	1,600	2,898	
All other income	2,452	595	245	
Noninterest revenue	208	3,629	5,351	
Net interest income	(1,360	) 506	2,063	
Total net revenue <sup>(a)</sup>	(1,152	) 4,135	7,414	
Provision for credit losses	(37	) (36	) 14	
Noninterest expense				
Compensation expense	2,622	2,324	2,276	
Noncompensation expense <sup>(b)</sup>	7,353	6,693	8,641	
Subtotal	9,975	9,017	10,917	
Net expense allocated to other businesses	(5,379	) (4,909	) (4,607	)
Total noninterest expense	4,596	4,108	6,310	
Income before income tax expense/(benefit)	(5,711	) 63	1,090	
Income tax expense/(benefit) <sup>(c)</sup>	(3,629	) (759	) (190	)
Net income	\$(2,082	) \$822	\$1,280	
Total net revenue				
Private equity	\$601	\$836	\$1,239	
Treasury and CIO	(3,064	) 3,196	6,642	
Other Corporate	1,311	103	(467	)
Total net revenue	\$(1,152	) \$4,135	\$7,414	
Net income				
Private equity	\$292	\$391	\$588	
Treasury and CIO	(2,093	) 1,349	3,576	
Other Corporate	(281	) (918	) (2,884	)
Total net income	\$(2,082	) \$822	\$1,280	
Total assets (period-end)	\$728,925	\$693,108	\$526,556	
Headcount	22,747	21,334	19,419	

(a) Included tax-equivalent adjustments, predominantly due to tax-exempt income from municipal bond investments of \$443 million, \$298 million and \$226 million for the years ended December 31, 2012, 2011 and 2010, respectively.

(b) Included litigation expense of \$3.7 billion, \$3.2 billion and \$5.7 billion for the years ended December 31, 2012, 2011 and 2010, respectively.

(c) Includes tax benefits recognized upon the resolution of tax audits.

2012 compared with 2011

Net loss was \$2.1 billion, compared with a net income of \$822 million in the prior year.

Private Equity reported net income of \$292 million, compared with net income of \$391 million in the prior year. Net revenue was \$601 million, compared with \$836 million in the prior year, due to lower unrealized and realized gains on private investments, partially offset by higher unrealized gains on public securities. Noninterest expense was \$145 million, down from \$238 million in the prior year.

Treasury and CIO reported a net loss of \$2.1 billion, compared with net income of \$1.3 billion in the prior year. Net revenue was a loss of \$3.1 billion, compared with net revenue of \$3.2 billion in the prior year. The current year loss reflected \$5.8 billion of losses incurred by CIO from the synthetic credit portfolio for the six months ended June 30, 2012, and \$449 million of losses from the retained index credit derivative positions for the three months ended September 30, 2012. These losses were partially offset by securities gains of \$2.0 billion. The current year revenue reflected \$888 million of extinguishment gains related to the redemption of trust preferred securities, which are included in all other income in the above table. The extinguishment gains were related to adjustments applied to the cost basis of the trust preferred securities during the period they were in a qualified hedge accounting relationship. Net interest income was negative \$683 million, compared with \$1.4 billion in the prior year, primarily reflecting the impact of lower portfolio yields and higher deposit balances across the Firm.

Other Corporate reported a net loss of \$281 million, compared with a net loss of \$918 million in the prior year. Noninterest revenue of \$1.8 billion was driven by a \$1.1 billion benefit for the Washington Mutual bankruptcy settlement, which is included in all other income in the above table, and a \$665 million gain from the recovery on a Bear Stearns-related subordinated loan. Noninterest expense of \$3.9 billion was up \$943 million compared with the prior year. The current year included expense of \$3.7 billion for additional litigation reserves, largely for mortgage-related matters. The prior year included expense of \$3.2 billion for additional litigation reserves.

2011 compared with 2010

Net income was \$822 million, compared with \$1.3 billion in the prior year.

Private Equity reported net income of \$391 million, compared with \$588 million in the prior year. Net revenue was \$836 million, a decrease of \$403 million, primarily related to net write-downs on private investments and the absence of prior year gains on sales. Noninterest expense was \$238 million, a decrease of \$85 million from the prior year. Treasury and CIO reported net income of \$1.3 billion, compared with net income of \$3.6 billion in the prior year. Net revenue was \$3.2 billion, including \$1.4 billion of security gains. Net interest income in 2011 was lower compared with 2010, primarily driven by repositioning of the investment securities portfolio and lower funding benefits from financing the portfolio.

Other Corporate reported a net loss of \$918 million, compared with a net loss of \$2.9 billion in the prior year. Net revenue was \$103 million, compared with a net loss of \$467 million in the prior year. Noninterest expense was \$2.9 billion which included \$3.2 billion of additional litigation reserves, predominantly for mortgage-related matters. Noninterest expense in the prior year was \$5.5 billion which included \$5.7 billion of additional litigation reserves.

Treasury and CIO overview

Treasury and CIO are predominantly responsible for measuring, monitoring, reporting and managing the Firm's liquidity, funding, capital and structural interest rate and foreign exchange risks. The risks managed by Treasury and CIO arise from the activities undertaken by the Firm's four major reportable business segments to serve their respective client bases, which generate both on- and off-balance sheet assets and liabilities.

Treasury is responsible for, among other functions, funds transfer pricing. Funds transfer pricing is used to transfer structural interest rate risk and foreign exchange risk of the Firm to Treasury and CIO and allocate interest income and expense to each business based on market rates. CIO, through its management of the investment portfolio, generates net interest income to pay the lines of business market rates. Any variance (whether positive or negative) between amounts generated by CIO through its investment portfolio activities and amounts paid to or received by the lines of business are retained by CIO, and are not reflected in line of business segment results. Treasury and CIO activities operate in support of the overall Firm.

CIO achieves the Firm's asset-liability management objectives generally by investing in high-quality securities that are managed for the longer-term as part of the Firm's AFS investment portfolio. Unrealized gains and losses on securities held in the AFS portfolio are recorded in other comprehensive income. For further information about securities in the AFS portfolio, see Note 3 and Note 12 on

pages 196–214 and 244–248, respectively, of this Annual Report. CIO also uses securities that are not classified within the AFS portfolio, as well as derivatives, to meet the Firm's asset-liability management objectives. Securities not classified within the AFS portfolio are recorded in trading assets and liabilities; realized and unrealized gains and losses on such securities are recorded in the principal transactions revenue line in the Consolidated Statements of Income. For further information about securities included in trading assets and liabilities, see Note 3 on pages 196–214 of this Annual Report. Derivatives used by CIO are also classified as trading assets and liabilities. For further information on derivatives, including the classification of realized and unrealized gains and losses, see Note 6 on pages 218–227 of this Annual Report.

CIO's AFS portfolio consists of U.S. and non-U.S. government securities, agency and non-agency mortgage-backed securities, other asset-backed securities and corporate and municipal debt securities. Treasury's AFS portfolio consists of U.S. and non-U.S. government securities and corporate debt securities. At December 31, 2012, the total Treasury and CIO AFS portfolios were \$344.1 billion and \$21.3 billion, respectively; the average credit rating of the securities comprising the Treasury and CIO AFS portfolios was AA+ (based upon external ratings where available and where not available, based primarily upon internal ratings that correspond to ratings as defined by S&P and Moody's). See Note 12 on pages 244–248 of this Annual Report for further information on the details of the Firm's AFS portfolio. For further information on liquidity and funding risk, see Liquidity Risk Management on pages 127–133 of this Annual Report. For information on interest rate, foreign exchange and other risks, and CIO VaR and the Firm's nontrading interest rate-sensitive revenue at risk, see Market Risk Management on pages 163–169 of this Annual Report.

Selected income statement and balance sheet data

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As of or for the year ended December 31, (in millions)	2012	2011	2010
Securities gains <sup>(a)</sup>	\$2,028	\$1,385	\$2,897
Investment securities portfolio (average)	358,029	330,885	323,673
Investment securities portfolio (period-end)	365,421	355,605	310,801
Mortgage loans (average)	10,241	13,006	9,004
Mortgage loans (period-end)	7,037	13,375	10,739

(a) Reflects repositioning of the investment securities portfolio.

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## Management's discussion and analysis

## Private Equity portfolio

## Selected income statement and balance sheet data

Year ended December 31, (in millions)	2012	2011	2010
Private equity gains/(losses)			
Realized gains	\$17	\$1,842	\$1,409
Unrealized gains/(losses) <sup>(a)</sup>	639	(1,305)	(302)
Total direct investments	656	537	1,107
Third-party fund investments	134	417	241
Total private equity gains/(losses) <sup>(b)</sup>	\$790	\$954	\$1,348

(a) Unrealized gains/(losses) contain reversals of unrealized gains and losses that were recognized in prior periods and have now been realized.

(b) Included in principal transactions revenue in the Consolidated Statements of Income.

Private equity portfolio information<sup>(a)</sup>

## Direct investments

December 31, (in millions)	2012	2011	2010
Publicly held securities			
Carrying value	\$578	\$805	\$875
Cost	350	573	732
Quoted public value	578	896	935
Privately held direct securities			
Carrying value	5,379	4,597	5,882
Cost	6,584	6,793	6,887
Third-party fund investments <sup>(b)</sup>			
Carrying value	2,117	2,283	1,980
Cost	1,963	2,452	2,404
Total private equity portfolio			
Carrying value	\$8,074	\$7,685	\$8,737
Cost	\$8,897	\$9,818	\$10,023

(a) For more information on the Firm's policies regarding the valuation of the private equity portfolio, see Note 3 on pages 196–214 of this Annual Report.

(b) Unfunded commitments to third-party private equity funds were \$370 million, \$789 million and \$1.0 billion at December 31, 2012, 2011 and 2010, respectively.

## 2012 compared with 2011

The carrying value of the private equity portfolio at December 31, 2012, was \$8.1 billion, up from \$7.7 billion at December 31, 2011. The increase in the portfolio was predominantly driven by new investments and unrealized gains, partially offset by sales of investments. The portfolio represented 5.2% of the Firm's stockholders' equity less goodwill at December 31, 2012, down from 5.7% at December 31, 2011.

## 2011 compared with 2010

The carrying value of the private equity portfolio at December 31, 2011, was \$7.7 billion, down from \$8.7 billion at December 31, 2010. The decrease in the portfolio was predominantly driven by sales of investments, partially offset by new investments. The portfolio represented 5.7% of the Firm's stockholders' equity less goodwill at December 31, 2011, down from 6.9% at December 31, 2010.





## INTERNATIONAL OPERATIONS

During the years ended December 31, 2012, 2011 and 2010, the Firm recorded approximately \$18.5 billion, \$24.5 billion and \$22.0 billion, respectively, of managed revenue derived from clients, customers and counterparties domiciled outside of North America. Of those amounts, approximately 57%, 66% and 64%, respectively, were derived from Europe/Middle East/Africa (“EMEA”); approximately 30%, 25% and 28%, respectively, from Asia/Pacific; and approximately 13%, 9% and 8%, respectively, from Latin America/Caribbean. For additional information regarding international operations, see Note 32 on page 326 of this Annual Report.

## International wholesale activities

The Firm is committed to further expanding its wholesale business activities outside of the United States, and it continues to add additional client-serving bankers, as well as product and sales support personnel, to address the needs of the Firm’s clients located in these regions. With a comprehensive and coordinated international business strategy and growth plan, efforts and investments for growth outside of the United States will continue to be accelerated and prioritized.

Set forth below are certain key metrics related to the Firm’s wholesale international operations, including, for each of EMEA, Asia/Pacific and Latin America/Caribbean, the number of countries in each such region in which they operate, front-office headcount, number of clients, revenue and selected balance-sheet data.

As of or for the year ended December 31, (in millions, except headcount and where otherwise noted)	EMEA			Asia/Pacific			Latin America/Caribbean		
	2012	2011	2010	2012	2011	2010	2012	2011	2010
Revenue <sup>(a)</sup>	\$ 10,398	\$ 16,141	\$ 14,149	\$ 5,590	\$ 5,971	\$ 6,082	\$ 2,327	\$ 2,232	\$ 1,697
Countries of operation	33	33	33	17	16	16	9	9	8
New offices	—	1	6	2	2	7	—	4	2
Total headcount <sup>(b)</sup>	15,533	16,178	16,122	20,548	20,172	19,153	1,436	1,378	1,201
Front-office headcount	5,917	5,993	5,872	4,195	4,253	4,168	644	569	486
Significant clients <sup>(c)</sup>	992	938	900	492	479	451	164	140	126
Deposits (average) <sup>(d)</sup>	\$ 169,693	\$ 168,882	\$ 142,859	\$ 57,329	\$ 57,684	\$ 53,268	\$ 4,823	\$ 5,318	\$ 6,263
Loans (period-end) <sup>(e)</sup>	40,760	36,637	27,934	30,287	31,119	20,552	30,322	25,141	16,480
Assets under management (in billions)	258	278	282	114	105	111	45	34	35
Assets under supervision (in billions)	317	329	331	160	139	147	110	89	84
Assets under custody (in billions)	6,502	5,430	4,810	1,577	1,426	1,321	252	279	153

Note: International wholesale operations is comprised of CIB, AM, CB and Treasury and CIO, and prior-period amounts have been revised to conform with current allocation methodologies.

(a) Revenue is based predominantly on the domicile of the client, the location from which the client relationship is managed, or the location of the trading desk.

(b) Total headcount includes all employees, including those in service centers, located in the region.

(c) Significant clients are defined as companies with over \$1 million in revenue over a trailing 12-month period in the region (excludes private banking clients).

(d) Deposits are based on the location from which the client relationship is managed.

(e) Loans outstanding are based predominantly on the domicile of the borrower and exclude loans held-for-sale and loans carried at fair value.

## Management's discussion and analysis

## BALANCE SHEET ANALYSIS

## Selected Consolidated Balance Sheets data

December 31, (in millions)	2012	2011
Assets		
Cash and due from banks	\$53,723	\$59,602
Deposits with banks	121,814	85,279
Federal funds sold and securities purchased under resale agreements	296,296	235,314
Securities borrowed	119,017	142,462
Trading assets:		
Debt and equity instruments	375,045	351,486
Derivative receivables	74,983	92,477
Securities	371,152	364,793
Loans	733,796	723,720
Allowance for loan losses	(21,936)	(27,609)
Loans, net of allowance for loan losses	711,860	696,111
Accrued interest and accounts receivable	60,933	61,478
Premises and equipment	14,519	14,041
Goodwill	48,175	48,188
Mortgage servicing rights	7,614	7,223
Other intangible assets	2,235	3,207
Other assets	101,775	104,131
Total assets	\$2,359,141	\$2,265,792
Liabilities		
Deposits	\$1,193,593	\$1,127,806
Federal funds purchased and securities loaned or sold under repurchase agreements	240,103	213,532
Commercial paper	55,367	51,631
Other borrowed funds	26,636	21,908
Trading liabilities:		
Debt and equity instruments	61,262	66,718
Derivative payables	70,656	74,977
Accounts payable and other liabilities	195,240	202,895
Beneficial interests issued by consolidated VIEs	63,191	65,977
Long-term debt	249,024	256,775
Total liabilities	2,155,072	2,082,219
Stockholders' equity	204,069	183,573
Total liabilities and stockholders' equity	\$2,359,141	\$2,265,792

## Consolidated Balance Sheets overview

JPMorgan Chase's total assets increased 4% and total liabilities increased 3% from December 31, 2011. The increase in total assets was predominantly due to higher securities purchased under resale agreements and deposits with banks, reflecting the deployment of the Firm's excess cash. The increase in total liabilities was predominantly due to higher deposits, reflecting a higher level of consumer and wholesale balances; and higher securities sold under repurchase agreements associated with financing the Firm's assets. The increase in stockholders' equity was predominantly due to net income.

The following paragraphs provide a description of specific line captions on the Consolidated Balance Sheets. For the line captions that had significant changes from December 31, 2011, a discussion of the changes is also included.

Cash and due from banks and deposits with banks

The Firm uses these instruments as part of its cash and liquidity management activities. The net increase reflected the placement of the Firm's excess funds with various central banks, primarily Federal Reserve Banks. For additional information, refer to the Liquidity Risk Management discussion on pages 127–133 of this Annual Report.

Federal funds sold and securities purchased under resale agreements; and securities borrowed

The Firm uses these instruments to support its client-driven market-making and risk management activities and to manage its cash positions. In particular, securities purchased under resale agreements and securities borrowed are used to provide funding or liquidity to clients through short-term purchases and borrowings of their securities by the Firm. The increase in securities purchased under resale agreements was due primarily to deployment of the Firm's excess cash by Treasury; the decrease in securities borrowed reflects a shift in deployment of excess cash to resale agreements as well as lower client activity in CIB.

Trading assets and liabilities – debt and equity instruments

Debt and equity trading instruments are used primarily for client-driven market-making activities. These instruments consist predominantly of fixed income securities, including government and corporate debt; equity securities, including convertible securities; loans, including prime mortgages and other loans warehoused by CCB and CIB for sale or securitization purposes and accounted for at fair value; and physical commodities inventories generally carried at the lower of cost or market (market approximates fair value). The increase in trading assets in 2012 was driven by client-driven market-making activity in CIB, which resulted in higher levels of non-U.S. government debt securities, partially offset by a decrease in physical commodities inventories. For additional information, refer to Note 3 on pages 196–214 of this Annual Report.

Trading assets and liabilities – derivative receivables and payables

The Firm uses derivative instruments predominantly for market-making activities. Derivatives enable customers and the Firm to manage their exposure to fluctuations in interest rates, currencies and other markets. The Firm also uses derivative instruments to manage its credit exposure.

Derivative receivables decreased primarily related to the decline in the U.S. dollar, and tightening of credit spreads;

these changes resulted in reductions to interest rate, credit derivative, and foreign exchange balances. Derivative payables decreased primarily related to the decline in the U.S. dollar, and tightening of credit spreads; these changes resulted in reductions to interest rate, and credit derivative balances. For additional information, refer to Derivative contracts on pages 156–159, and Note 3 and Note 6 on pages 196–214 and 218–227, respectively, of this Annual Report.

#### Securities

Substantially all of the securities portfolio is classified as AFS and used primarily to manage the Firm's exposure to interest rate movements and to invest cash resulting from excess liquidity. Securities increased largely due to reinvestment and repositioning of the CIO AFS portfolio, which increased the levels of non-U.S. government debt and residential mortgage-backed securities ("MBS") as well as obligations of U.S. states and municipalities; the increase was mainly offset by decreases in corporate debt securities and U.S. government agency-issued MBS. For additional information related to securities, refer to the discussion in the Corporate/Private Equity segment on pages 102–104, and Note 3 and Note 12 on pages 196–214 and 244–248, respectively, of this Annual Report.

#### Loans and allowance for loan losses

The Firm provides loans to a variety of customers, ranging from large corporate and institutional clients, to individual customers and small businesses. Loan balances increased throughout 2012 due to higher levels of wholesale loans, primarily in CB and AM, partially offset by lower balances of consumer loans. The increase in wholesale loans was driven by higher wholesale activity across most of the Firm's regions and businesses. The decline in consumer, excluding credit card, loans was predominantly due to mortgage-related paydowns, portfolio run-off, and net charge-offs. The decline in credit card loans was due to higher repayment rates.

The allowance for loan losses decreased across all portfolio segments, but the most significant portion of the reduction occurred in the consumer allowances, predominantly related to the continuing trend of improved delinquencies across most portfolios, notably non-PCI residential real estate and credit card. The wholesale allowance also decreased, driven by recoveries, the restructuring of certain nonperforming loans, current credit trends and other portfolio activity.

For a more detailed discussion of the loan portfolio and the allowance for loan losses, refer to Credit Risk Management on pages 134–162, and Notes 3, 4, 14 and 15 on pages 196–214, 214–216, 250–275 and 276–279, respectively, of this Annual Report.

#### Premises and Equipment

The Firm's premises and equipment consist of land, buildings, leasehold improvements, furniture and fixtures, hardware and software, and other equipment. The increase

in premises and equipment was largely due to retail branch expansion in the U.S. and other investments in facilities globally.

#### Mortgage servicing rights

MSRs represent the fair value of net cash flows expected to be received for performing specified mortgage-servicing activities for third parties. The increase in the MSR asset was predominantly due to originations and purchases, partially offset by dispositions and amortization. These net additions were partially offset by changes due to market interest rates and, to a lesser extent, other changes in valuation due to inputs and assumptions. For additional information on MSRs, see Note 17 on pages 291–295 of this Annual Report.

#### Other assets

Other assets consist of private equity and other instruments, cash collateral pledged, corporate- and bank-owned life insurance policies, assets acquired in loan satisfactions (including real estate owned), and all other assets. Other assets remained relatively flat compared to the prior year.

#### Deposits

Deposits represent a liability to both retail and wholesale customers related to non-brokerage accounts held on their behalf. Deposits provide a stable and consistent source of funding for the Firm. The increase in deposits was due to growth in both consumer and wholesale deposits. Consumer deposit balances increased throughout the year, largely

driven by a focus on sales activity, lower attrition due to initiatives to improve customer experience and the impact of network expansion. The increase in wholesale client balances was due to higher client operating balances in CIB; a higher level of seasonal inflows at year-end in both CIB and AM; and in AM, clients realizing capital gains in anticipation of changes in U.S. tax rates; these increases were partially offset by lower balances related to changes in FDIC insurance coverage. For more information on deposits, refer to the CCB and AM segment discussions on pages 80–91 and 99–101, respectively; the Liquidity Risk Management discussion on pages 127–133; and Notes 3 and 19 on pages 196–214 and 296, respectively, of this Annual Report. For more information on wholesale client deposits, refer to the CB and CIB segment discussions on pages 96–98 and 92–95, respectively, of this Annual Report.

Federal funds purchased and securities loaned or sold under repurchase agreements

The Firm uses these instruments as part of its liquidity management activities and to support its client-driven market-making activities. In particular, federal funds purchased and securities loaned or sold under repurchase agreements are used by the Firm as short-term funding sources and to provide securities to clients for their short-term liquidity purposes. The increase was due to higher secured financing of the Firm's assets. For additional

## Management's discussion and analysis

information on the Firm's Liquidity Risk Management, see pages 127–133 of this Annual Report.

### Commercial paper and other borrowed funds

The Firm uses commercial paper and other borrowed funds in its liquidity management activities to meet short-term funding needs, and in connection with a CIB liquidity management product, whereby clients choose to sweep their deposits into commercial paper. Commercial paper increased due to higher commercial paper issuance from wholesale funding markets to meet short-term funding needs, partially offset by a decline in the volume of liability balances related to CIB's liquidity management product. Other borrowed funds increased due to higher secured short-term borrowings and unsecured short-term borrowings to meet short-term funding needs. For additional information on the Firm's Liquidity Risk Management and other borrowed funds, see pages 127–133 of this Annual Report.

### Accounts payable and other liabilities

Accounts payable and other liabilities consist of payables to customers; payables to brokers, dealers and clearing organizations; payables from failed securities purchases; income taxes payable; accrued expense, including interest-bearing liabilities; and all other liabilities, including litigation reserves and obligations to return securities received as collateral. Accounts payable and other liabilities decreased predominantly due to lower CIB client balances, partially offset by increases in income taxes payables and litigation reserves related to mortgage foreclosure-related matters. For additional information on the Firm's accounts payable and other liabilities, see Note 20 on page 296 of this Annual Report.

### Beneficial interests issued by consolidated VIEs

Beneficial interests issued by consolidated VIEs represent interest-bearing beneficial-interest liabilities, which decreased primarily due to credit card maturities and a reduction in outstanding conduit commercial paper held by third parties, partially offset by new credit card issuances and new consolidated municipal bond vehicles. For additional information on Firm-sponsored VIEs and loan securitization trusts, see Off-Balance Sheet Arrangements, and Note 16 on pages 280–291 of this Annual Report.

### Long-term debt

The Firm uses long-term debt (including TruPS and long-term FHLB advances) to provide cost-effective and diversified sources of funds and as critical components of the Firm's liquidity and capital management activities. Long-term debt decreased, primarily due to the redemption of TruPS. For additional information on the Firm's long-term debt activities, see the Liquidity Risk Management discussion on pages 127–133 of this Annual Report.

### Stockholders' equity

Total stockholders' equity increased, predominantly due to net income; a net increase in AOCI driven by net unrealized market value increases on AFS securities, predominantly non-U.S. residential MBS and corporate debt securities, and obligations of U.S. states and municipalities, partially offset by realized gains; issuances and commitments to issue under the Firm's employee stock-based compensation plans; and the issuance of preferred stock. The increase was partially offset by the repurchases of common equity, and the declaration of cash dividends on common and preferred stock.



## OFF-BALANCE SHEET ARRANGEMENTS AND CONTRACTUAL CASH OBLIGATIONS

JPMorgan Chase is involved with several types of off-balance sheet arrangements, including through nonconsolidated special-purpose entities (“SPEs”), which are a type of VIE, and through lending-related financial instruments (e.g., commitments and guarantees).

### Special-purpose entities

The most common type of VIE is an SPE. SPEs are commonly used in securitization transactions in order to isolate certain assets and distribute the cash flows from those assets to investors. SPEs are an important part of the financial markets, including the mortgage- and asset-backed securities and commercial paper markets, as they provide market liquidity by facilitating investors’ access to specific portfolios of assets and risks. SPEs may be organized as trusts, partnerships or corporations and are typically established for a single, discrete purpose. SPEs are not typically operating entities and usually have a limited life and no employees. The basic SPE structure involves a company selling assets to the SPE; the SPE funds the purchase of those assets by issuing securities to investors.

JPMorgan Chase uses SPEs as a source of liquidity for itself and its clients by securitizing financial assets, and by creating investment products for clients. The Firm is involved with SPEs through multi-seller conduits, investor intermediation activities, and loan securitizations. See Note 16 on pages 280–291 for further information on these types of SPEs.

The Firm holds capital, as deemed appropriate, against all SPE-related transactions and related exposures, such as derivative transactions and lending-related commitments and guarantees.

The Firm has no commitments to issue its own stock to support any SPE transaction, and its policies require that transactions with SPEs be conducted at arm’s length and reflect market pricing. Consistent with this policy, no JPMorgan Chase employee is permitted to invest in SPEs with which the Firm is involved where such investment would violate the Firm’s Code of Conduct. These rules prohibit employees from self-dealing and acting on behalf of the Firm in transactions with which they or their family have any significant financial interest.

### Implications of a credit rating downgrade to JPMorgan Chase Bank, N.A.

For certain liquidity commitments to SPEs, JPMorgan Chase Bank, N.A., could be required to provide funding if its short-term credit rating were downgraded below specific levels, primarily “P-1”, “A-1” and “F1” for Moody’s, Standard & Poor’s and Fitch, respectively. These liquidity commitments support the issuance of asset-backed commercial paper by both Firm-administered consolidated and third-party sponsored nonconsolidated SPEs. In the event of such a short-term credit rating downgrade, JPMorgan Chase Bank, N.A., absent other solutions, would be required to provide funding to the SPE, if the commercial paper could not be

reissued as it matured. The aggregate amounts of commercial paper outstanding, issued by both Firm-administered and third-party sponsored SPEs, that are held by third parties as of December 31, 2012 and 2011, was \$18.1 billion and \$19.7 billion, respectively. The aggregate amounts of commercial paper outstanding could increase in future periods should clients of the Firm-administered consolidated or third-party sponsored nonconsolidated SPEs draw down on certain unfunded lending-related commitments. These unfunded lending-related commitments were \$10.9 billion and \$11.0 billion at December 31, 2012 and 2011, respectively. The Firm could facilitate the refinancing of some of the clients’ assets in order to reduce the funding obligation. For further information, see the discussion of Firm-administered multi-seller conduits in Note 16 on pages 284–285 of this Annual Report.

The Firm also acts as liquidity provider for certain municipal bond vehicles. The Firm’s obligation to perform as liquidity provider is conditional and is limited by certain termination events, which include bankruptcy or failure to pay by the municipal bond issuer or credit enhancement provider, an event of taxability on the municipal bonds or the immediate downgrade of the municipal bond to below investment grade. See Note 16 on pages 280–291 of this Annual Report for additional information.

### Off-balance sheet lending-related financial instruments, guarantees, and other commitments

JPMorgan Chase provides lending-related financial instruments (e.g., commitments and guarantees) to meet the financing needs of its customers. The contractual amount of these financial instruments represents the maximum possible credit risk to the Firm should the counterparty draw upon the commitment or the Firm be required to fulfill its

obligation under the guarantee, and should the counterparty subsequently fail to perform according to the terms of the contract. Most of these commitments and guarantees expire without being drawn or a default occurring. As a result, the total contractual amount of these instruments is not, in the Firm's view, representative of its actual future credit exposure or funding requirements. For further discussion of lending-related commitments and guarantees and the Firm's accounting for them, see Lending-related commitments on page 156, and Note 29 (including a table that presents, as of December 31, 2012, the amounts, by contractual maturity, of off-balance sheet lending-related financial instruments, guarantees and other commitments) on pages 308–315, of this Annual Report. For a discussion of loan repurchase liabilities, see Mortgage repurchase liability on pages 111–115 and Note 29 on pages 308–315, respectively, of this Annual Report.

## Management's discussion and analysis

## Contractual cash obligations

In the normal course of business, the Firm enters into various contractual obligations that may require future cash payments. Certain obligations are recognized on-balance sheet, while others are off-balance sheet under U.S. GAAP. The accompanying table summarizes, by remaining maturity, JPMorgan Chase's significant contractual cash obligations at December 31, 2012. The contractual cash obligations included in the table below reflect the minimum contractual obligation under legally enforceable contracts

with terms that are both fixed and determinable. The carrying amount of on-balance sheet obligations on the Consolidated Balance Sheets may differ from the minimum contractual amount of the obligations reported below. For a discussion of mortgage loan repurchase liabilities, see Mortgage repurchase liability on pages 111–115 of this Annual Report. For further discussion of other obligations, see the Notes to Consolidated Financial Statements in this Annual Report.

## Contractual cash obligations

By remaining maturity at December 31, (in millions)	2012				2011	
	2013	2014-2015	2016-2017	After 2017	Total	Total
<b>On-balance sheet obligations</b>						
Deposits <sup>(a)</sup>	\$1,175,886	\$7,440	\$5,434	\$3,016	\$1,191,776	\$1,125,470
Federal funds purchased and securities loaned or sold under repurchase agreements	236,875	1,464	500	1,264	240,103	213,532
Commercial paper	55,367	—	—	—	55,367	51,631
Other borrowed funds <sup>(a)</sup>	15,357	—	—	—	15,357	12,450
Beneficial interests issued by consolidated VIEs <sup>(a)</sup>	40,071	11,310	4,710	5,930	62,021	65,977
Long-term debt <sup>(a)</sup>	26,256	63,515	57,998	83,454	231,223	236,905
Other <sup>(b)</sup>	1,120	1,025	915	2,647	5,707	6,032
<b>Total on-balance sheet obligations</b>	<b>1,550,932</b>	<b>84,754</b>	<b>69,557</b>	<b>96,311</b>	<b>1,801,554</b>	<b>1,711,997</b>
<b>Off-balance sheet obligations</b>						
Unsettled reverse repurchase and securities borrowing agreements <sup>(c)</sup>	34,871	—	—	—	34,871	39,939
Contractual interest payments <sup>(d)</sup>	7,703	11,137	8,195	29,245	56,280	76,418
Operating leases <sup>(e)</sup>	1,788	3,282	2,749	6,536	14,355	15,014
Equity investment commitments <sup>(f)</sup>	449	6	2	1,452	1,909	2,290
Contractual purchases and capital expenditures	1,232	634	382	497	2,745	2,660
Obligations under affinity and co-brand programs	980	1,924	1,336	66	4,306	5,393
Other	32	2	—	—	34	284
<b>Total off-balance sheet obligations</b>	<b>47,055</b>	<b>16,985</b>	<b>12,664</b>	<b>37,796</b>	<b>114,500</b>	<b>141,998</b>
<b>Total contractual cash obligations</b>	<b>\$1,597,987</b>	<b>\$101,739</b>	<b>\$82,221</b>	<b>\$134,107</b>	<b>\$1,916,054</b>	<b>\$1,853,995</b>

(a) Excludes structured notes where the Firm is not obligated to return a stated amount of principal at the maturity of the notes, but is obligated to return an amount based on the performance of the structured notes.

(b) Primarily includes deferred annuity contracts, pension and postretirement obligations and insurance liabilities.

(c) For further information, refer to unsettled reverse repurchase and securities borrowing agreements in Note 29 on page 312 of this Annual Report.

(d) Includes accrued interest and future contractual interest obligations. Excludes interest related to structured notes where the Firm's payment obligation is based on the performance of certain benchmarks.

Includes noncancelable operating leases for premises and equipment used primarily for banking purposes and for (e) energy-related tolling service agreements. Excludes the benefit of noncancelable sublease rentals of \$1.7 billion and \$1.5 billion at December 31, 2012 and 2011, respectively.

At December 31, 2012 and 2011, included unfunded commitments of \$370 million and \$789 million, respectively, (f) to third-party private equity funds that are generally valued as discussed in Note 3 on pages 196–214 of this Annual Report; and \$1.5 billion and \$1.5 billion of unfunded commitments, respectively, to other equity investments.

### Mortgage repurchase liability

In connection with the Firm's mortgage loan sale and securitization activities with Fannie Mae and Freddie Mac (the "GSEs") and other mortgage loan sale and private-label securitization transactions, the Firm has made representations and warranties that the loans sold meet certain requirements. For transactions with the GSEs, these representations relate to type of collateral, underwriting standards, validity of certain borrower representations made in connection with the loan, primary mortgage insurance being in force for any mortgage loan with a loan-to-value ("LTV") ratio greater than 80% at the loan's origination date, and the use of the GSEs' standard legal documentation. The Firm may be, and has been, required to repurchase loans and/or indemnify the GSEs and other investors for losses due to material breaches of these representations and warranties. To the extent that repurchase demands that are received relate to loans that the Firm purchased from third parties that remain viable, the Firm typically will have the right to seek a recovery of related repurchase losses from the related third party.

To date, the repurchase demands the Firm has received from the GSEs primarily relate to loans originated from 2005 to 2008. Repurchases resulting from demands against pre-2005 and post-2008 vintages have not been significant; the Firm attributes this to the comparatively favorable credit performance of these vintages and to the enhanced underwriting and loan qualification standards implemented progressively during 2007 and 2008. From 2005 to 2008, excluding Washington Mutual, the principal amount of loans sold to the GSEs subject to certain representations and warranties for which the Firm may be liable was approximately \$380 billion (this amount has not been adjusted for subsequent activity, such as borrower repayments of principal or repurchases completed to date). See the discussion below for information concerning the process the Firm uses to evaluate repurchase demands for breaches of representations and warranties, and the Firm's estimate of probable losses related to such exposure.

From 2005 to 2008, Washington Mutual sold approximately \$150 billion principal amount of loans to the GSEs subject to certain representations and warranties. Subsequent to the Firm's acquisition of certain assets and liabilities of Washington Mutual from the FDIC in September 2008, the Firm resolved and/or limited certain current and future repurchase demands for loans sold to the GSEs by Washington Mutual, although it remains the Firm's position that such obligations remain with the FDIC receivership. As of December 31, 2012, the Firm believes that it has no remaining exposure related to loans sold by Washington Mutual to the GSEs.

The Firm also sells loans in securitization transactions with Ginnie Mae; these loans are typically insured or guaranteed by another government agency. The Firm, in its role as servicer, may elect, but is typically not required, to repurchase delinquent loans securitized by Ginnie Mae, including those that have been sold back to Ginnie Mae

subsequent to modification. Because principal amounts due under the terms of these repurchased loans continue to be insured and the reimbursement of insured amounts continues to proceed normally, the Firm has not recorded any mortgage repurchase liability related to these loans. However, the Civil Division of the United States Attorney's Office for the Southern District of New York is conducting an investigation concerning the Firm's compliance with the requirements of the Federal Housing Administration's Direct Endorsement Program. The Firm is cooperating in that investigation.

From 2005 to 2008, the Firm and certain acquired entities made certain loan level representations and warranties in connection with approximately \$450 billion of residential mortgage loans that were sold or deposited into private-label securitizations. While the terms of the securitization transactions vary, they generally differ from loan sales to the GSEs in that, among other things: (i) in order to direct the trustee to investigate potential claims, the security holders must make a formal request for the trustee to do so, and typically, this requires agreement of the holders of a specified percentage of the outstanding securities; (ii) generally, the mortgage loans are not required to meet all GSE eligibility criteria; and (iii) in many cases, the party demanding repurchase is required to demonstrate that a loan-level breach of a representation or warranty has materially and adversely affected the value of the loan. Of the \$450 billion originally sold or deposited (including \$165 billion by Washington Mutual, as to which the Firm maintains that certain of the repurchase obligations remain with the FDIC receivership), approximately \$197 billion of principal has been repaid (including \$72 billion related to Washington Mutual). In addition, approximately \$118 billion of the principal amount of such loans has been liquidated (including \$43 billion related to Washington Mutual), with an average loss severity of 60%. Accordingly, the remaining outstanding principal balance of these loans

(including Washington Mutual) was, as of December 31, 2012, approximately \$135 billion, of which \$39 billion was 60 days or more past due. The remaining outstanding principal balance of loans related to Washington Mutual was approximately \$50 billion, of which \$14 billion were 60 days or more past due.

There have been generalized allegations, as well as specific demands, that the Firm repurchase loans sold or deposited into private-label securitizations (including claims from insurers that have guaranteed certain obligations of the securitization trusts). Although the Firm encourages parties to use the contractual repurchase process established in the governing agreements, these private-label repurchase claims have generally manifested themselves through threatened or pending litigation. Accordingly, the liability related to repurchase demands associated with all of the private-label securitizations described above is separately evaluated by the Firm in establishing its litigation reserves. For additional information regarding litigation, see Note 31 on pages 316–325 of this Annual Report.

Management's discussion and analysis

Repurchase demand process - GSEs

The Firm first becomes aware that a GSE is evaluating a particular loan for repurchase when the Firm receives a file request from the GSE. Upon completing its review, the GSE may submit a repurchase demand to the Firm; historically, most file requests have not resulted in repurchase demands.

The primary reasons for repurchase demands from the GSEs relate to alleged misrepresentations primarily arising from: (i) credit quality and/or undisclosed debt of the borrower; (ii) income level and/or employment status of the borrower; and (iii) appraised value of collateral. Ineligibility of the borrower for the particular product, mortgage insurance rescissions and missing documentation are other reasons for repurchase demands. The successful rescission of mortgage insurance typically results in a violation of representations and warranties made to the GSEs and, therefore, has been a significant cause of repurchase demands from the GSEs. The Firm actively reviews all rescission notices from mortgage insurers and contests them when appropriate.

As soon as practicable after receiving a repurchase demand from a GSE, the Firm evaluates the request and takes appropriate actions based on the nature of the repurchase demand. Loan-level appeals with the GSEs are typical and the Firm seeks to resolve the repurchase demand (i.e., either repurchase the loan or have the repurchase demand rescinded) within three to four months of the date of receipt. In many cases, the Firm ultimately is not required to repurchase a loan because it is able to resolve the purported defect. Although repurchase demands may be made until the loan is paid in full, the majority of repurchase demands from the GSEs have historically related to loans that became delinquent in the first 24 months following origination. More recently, the Firm has observed an increase in repurchase demands from the GSEs with respect to loans to borrowers who have made more than 24 months of payments before defaulting.

When the Firm accepts a repurchase demand from one of the GSEs, the Firm may either (i) repurchase the loan or the underlying collateral from the GSE at the unpaid principal balance of the loan plus accrued interest, or (ii) reimburse the GSE for its realized loss on a liquidated property (a "make-whole" payment).

Estimated mortgage repurchase liability

To estimate the Firm's mortgage repurchase liability arising from breaches of representations and warranties, the Firm considers the following factors, which are predominantly based on the Firm's historical repurchase experience with the GSEs:

- (i) the level of outstanding unresolved repurchase demands, estimated probable future repurchase demands, considering information about file requests, delinquent and
- (ii) liquidated loans, resolved and unresolved mortgage insurance rescission notices and the Firm's historical experience,
- (iii) the potential ability of the Firm to cure the defects identified in the repurchase demands ("cure rate"),
- (iv) the estimated severity of loss upon repurchase of the loan or collateral, make-whole settlement, or indemnification,
- (v) the Firm's potential ability to recover its losses from third-party originators, and
- (vi) the terms of agreements with certain mortgage insurers and other parties.

Based on these factors, the Firm has recognized a mortgage repurchase liability of \$2.8 billion and \$3.6 billion as of December 31, 2012 and 2011, respectively. The Firm's mortgage repurchase liability is intended to cover repurchase losses associated with all loans previously sold in connection with loan sale and securitization transactions with the GSEs, regardless of when those losses occur or how they are ultimately resolved (e.g., repurchase, make-whole payment). While uncertainties continue to exist with respect to both GSE behavior and the economic environment, the Firm believes that the model inputs and assumptions that it uses to estimate its mortgage repurchase liability are becoming increasingly seasoned and stable. Based on these model inputs, which take into account all available information, and also considering projections regarding future uncertainty, including the GSEs' current behavior, the Firm has become increasingly confident in its ability to estimate reliably its mortgage repurchase liability. For these reasons, the Firm believes that its mortgage repurchase liability at December 31, 2012, is sufficient to cover probable future repurchase losses arising from loan sale and securitization transactions with the GSEs.





The following table provides information about outstanding repurchase demands and unresolved mortgage insurance rescission notices, excluding those related to Washington Mutual, by counterparty type, at each of the past five quarter-end dates. The table includes repurchase demands received from the GSEs as well as repurchase demands that have been presented to the Firm by trustees who assert authority to present such claims under the terms of the underlying sale or securitization agreement (but excludes repurchase demands asserted in or in connection with pending repurchase litigation). However, all mortgage repurchase demands associated with private-label securitizations (however asserted) are evaluated by the Firm in establishing its litigation reserves and are not considered in the Firm's mortgage repurchase liability.

Outstanding repurchase demands and unresolved mortgage insurance rescission notices by counterparty type

(in millions)	Dec 31, 2012	Sep 30, 2012	Jun 30, 2012	Mar 31, 2012	Dec 31, 2011
GSEs	\$1,166	\$1,533	\$1,646	\$1,868	\$1,682
Mortgage insurers	1,014	1,036	1,004	1,000	1,034
Other <sup>(a)</sup>	887	1,697	981	756	663
Overlapping population <sup>(b)</sup>	(86	)(150	)(125	)(116	)(113
Total	\$2,981	\$4,116	\$3,506	\$3,508	\$3,266

(a) The decrease from September 30, 2012 predominantly relates to repurchase demands from private-label securitizations that had been presented in this table as of September 30, 2012 but that subsequently became subject to repurchase litigation in the fourth quarter of 2012; such repurchase demands are excluded from this table.

(b) Because the GSEs and others may make repurchase demands based on mortgage insurance rescission notices that remain unresolved, certain loans may be subject to both an unresolved mortgage insurance rescission notice and an outstanding repurchase demand.

The following tables provide information about repurchase demands and mortgage insurance rescission notices received by loan origination vintage, excluding those related to Washington Mutual, for the past five quarters. The Firm expects repurchase demands to remain at elevated levels or to increase if there is a significant increase in private-label repurchase demands outside of pending repurchase litigation. Additionally, repurchase demands from the GSEs may continue to fluctuate from period to period. The Firm considers future repurchase demands, including this potential volatility, in estimating its mortgage repurchase liability.

Quarterly mortgage repurchase demands received by loan origination vintage<sup>(a)</sup>

(in millions)	Dec 31, 2012	Sep 30, 2012	Jun 30, 2012	Mar 31, 2012	Dec 31, 2011
Pre-2005	\$42	\$33	\$28	\$41	\$39
2005	42	103	65	95	55
2006	292	963	506	375	315
2007	241	371	420	645	804
2008	114	196	311	361	291
Post-2008	87	124	191	124	81
Total repurchase demands received	\$818	\$1,790	\$1,521	\$1,641	\$1,585

(a) All mortgage repurchase demands associated with private-label securitizations are separately evaluated by the Firm in establishing its litigation reserves. This table excludes repurchase demands asserted in or in connection with pending repurchase litigation.

Quarterly mortgage insurance rescission notices received by loan origination vintage<sup>(a)</sup>

(in millions)	Dec 31, 2012	Sep 30, 2012	Jun 30, 2012	Mar 31, 2012	Dec 31, 2011
Pre-2005	\$6	\$6	\$9	\$13	\$4
2005	18	14	13	19	12

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2006	35	46	26	36	19
2007	83	139	121	78	48
2008	26	37	51	32	26
Post-2008	7	8	6	4	2
Total mortgage insurance rescissions received <sup>(a)</sup>	\$175	\$250	\$226	\$182	\$111

(a) Mortgage insurance rescissions typically result in a repurchase demand from the GSEs. This table includes mortgage insurance rescission notices for which the GSEs also have issued a repurchase demand.

## Management's discussion and analysis

Since the beginning of 2011, the Firm's cumulative cure rate (excluding loans originated by Washington Mutual) has been approximately 60%. A significant portion of repurchase demands now relate to loans with a longer pay history, which historically have had higher cure rates. Repurchases that have resulted from mortgage insurance rescissions are reflected in the Firm's overall cure rate. While the actual cure rate may vary from quarter to quarter, the Firm expects that the cumulative cure rate will remain in the 55-65% range for the foreseeable future.

The Firm has not observed a direct relationship between the type of defect that allegedly causes the breach of representations and warranties and the severity of the realized loss. Therefore, the loss severity assumption is estimated using the Firm's historical experience and projections regarding changes in home prices. Actual principal loss severities on finalized repurchases and "make-whole" settlements to date (excluding loans originated by Washington Mutual) currently average approximately 50%, but may vary from quarter to quarter based on the characteristics of the underlying loans and changes in home prices.

When a loan was originated by a third-party originator, the Firm typically has the right to seek a recovery of related repurchase losses from the third-party originator. Estimated and actual third-party recovery rates may vary from quarter to quarter based upon the underlying mix of third-party originators (e.g., active, inactive, out-of-business originators) from which recoveries are being sought.

The Firm has entered into agreements with two mortgage insurers to resolve their claims on certain portfolios for which the Firm is a servicer. These two agreements cover and have resolved approximately one-third of the Firm's total mortgage insurance rescission risk exposure, both in terms of the unpaid principal balance of serviced loans covered by mortgage insurance and the amount of mortgage insurance coverage. The impact of these agreements is reflected in the mortgage repurchase liability and the outstanding mortgage insurance rescission notices as of December 31, 2012, disclosed on the prior page. The Firm has considered its remaining unresolved mortgage insurance rescission risk exposure in estimating the mortgage repurchase liability as of December 31, 2012. Substantially all of the estimates and assumptions underlying the Firm's established methodology for computing its recorded mortgage repurchase liability — including the amount of probable future demands from the GSEs (based on both historical experience and the Firm's expectations about the GSEs' future behavior), the ability of the Firm to cure identified defects, the severity of loss upon repurchase or foreclosure and recoveries from third parties — require application of a significant level of management judgment. While the Firm uses the best information available to it in estimating its mortgage repurchase liability, this estimate is inherently uncertain and imprecise.

The following table summarizes the change in the mortgage repurchase liability for each of the periods presented.

Summary of changes in mortgage repurchase liability<sup>(a)</sup>

Year ended December 31, (in millions)	2012	2011	2010
Repurchase liability at beginning of period	\$3,557	\$3,285	\$1,705
Realized losses <sup>(b)</sup>	(1,158	) (1,263	) (1,423
Provision for repurchase losses <sup>(c)</sup>	412	1,535	3,003
Repurchase liability at end of period	\$2,811	\$3,557	3,285

(a) All mortgage repurchase demands associated with private-label securitizations are separately evaluated by the Firm in establishing its litigation reserves.

(b) Includes principal losses and accrued interest on repurchased loans, “make-whole” settlements, settlements with claimants, and certain related expense. Make-whole settlements were \$524 million, \$640 million and \$632 million, for the years ended December 31, 2012, 2011 and 2010, respectively.

(c) Includes \$112 million, \$52 million and \$47 million of provision related to new loan sales for the years ended December 31, 2012, 2011 and 2010, respectively.

The following table summarizes the unpaid principal balance of certain repurchases during the periods indicated.

Unpaid principal balance of mortgage loan repurchases<sup>(a)</sup>

Year ended December 31, (in millions)	2012	2011	2010
Ginnie Mae <sup>(b)</sup>	\$5,539	\$5,981	\$8,717
GSEs <sup>(c)</sup>	1,204	1,208	1,498
Other <sup>(c)(d)</sup>	209	126	275
Total	\$6,952	\$7,315	\$10,490

(a) This table includes: (i) repurchases of mortgage loans due to breaches of representations and warranties, and (ii) loans repurchased from Ginnie Mae loan pools as described in (b) below. This table does not include mortgage insurance rescissions; while the rescission of mortgage insurance typically results in a repurchase demand from the GSEs, the mortgage insurers themselves do not present repurchase demands to the Firm. This table also excludes mortgage loan repurchases associated with repurchase demands asserted in or in connection with pending litigation.

(b) In substantially all cases, these repurchases represent the Firm’s voluntary repurchase of certain delinquent loans from loan pools as permitted by Ginnie Mae guidelines (i.e., they do not result from repurchase demands due to breaches of representations and warranties). The Firm typically elects to repurchase these delinquent loans as it continues to service them and/or manage the foreclosure process in accordance with applicable requirements of Ginnie Mae, the Federal Housing Administration (“FHA”), Rural Housing Services (“RHS”) and/or the U.S. Department of Veterans Affairs (“VA”).

(c) Nonaccrual loans held-for-investment included \$465 million, \$477 million and \$354 million at December 31, 2012, 2011 and 2010, respectively, of loans repurchased as a result of breaches of representations and warranties.

(d) Represents loans repurchased from parties other than the GSEs, excluding those repurchased in connection with pending repurchase litigation.

For additional information regarding the mortgage repurchase liability, see Note 29 on pages 308–315 of this Annual Report.

The Firm also faces a variety of exposures resulting from repurchase demands and litigation arising out of its various roles as issuer and/or sponsor of mortgage-backed securities (“MBS”) offerings in private-label securitizations. For further information, see Note 31 on pages 316–325 of this Annual Report.



## Management's discussion and analysis

## CAPITAL MANAGEMENT

A strong capital position is essential to the Firm's business strategy and competitive position. The Firm's capital strategy focuses on long-term stability, which enables the Firm to build and invest in market-leading businesses, even in a highly stressed environment. Prior to making any decisions on future business activities, senior management considers the implications on the Firm's capital strength. In addition to considering the Firm's earnings outlook, senior management evaluates all sources and uses of capital with a view to preserving the Firm's capital strength. Maintaining a strong balance sheet to manage through economic volatility is considered a strategic imperative by the Firm's Board of Directors, CEO and Operating Committee. The Firm's balance sheet philosophy focuses on risk-adjusted returns, strong capital and reserves, and robust liquidity.

The Firm's capital management objectives are to hold capital sufficient to:

- Cover all material risks underlying the Firm's business activities;
- Maintain "well-capitalized" status under regulatory requirements;
- Maintain debt ratings that enable the Firm to optimize its funding mix and liquidity sources while minimizing costs;
- Retain flexibility to take advantage of future investment opportunities; and
- Build and invest in businesses, even in a highly stressed environment.

These objectives are achieved through ongoing monitoring of the Firm's capital position, regular stress testing, and a capital governance framework. Capital management is intended to be flexible in order to react to a range of potential events. JPMorgan Chase has frequent firmwide and LOB processes for ongoing monitoring and active management of its capital position.

## Capital governance

The Firm's senior management recognizes the importance of a capital management function that supports strategic decision-making. The Firm has established the Regulatory Capital Management Office ("RCMO") which is responsible for measuring, monitoring and reporting the Firm's capital and related risks. The RCMO is an integral component of the Firm's overall capital governance framework and is responsible for reviewing, approving and monitoring the implementation of the Firm's capital policies and strategies, as well as its capital adequacy assessment process. The Board's Risk Policy Committee assesses the capital adequacy assessment process and its components. This review encompasses evaluating the effectiveness of the capital adequacy process, the appropriateness of the risk tolerance levels, and the strength of the control infrastructure. For additional discussion on the Board's Risk Policy Committee, see Risk Management on pages 123–126 of this Annual Report.

## Internal Capital Adequacy Assessment Process

Semiannually, the Firm completes the Internal Capital Adequacy Assessment Process ("ICAAP"), which provides management with a view of the impact of severe and unexpected events on earnings, balance sheet positions, reserves and capital. The Firm's ICAAP integrates stress testing protocols with capital planning.

The process assesses the potential impact of alternative economic and business scenarios on the Firm's earnings and capital. Economic scenarios, and the parameters underlying those scenarios, are defined centrally and applied uniformly across the businesses. These scenarios are articulated in terms of macroeconomic factors, which are key drivers of business results; global market shocks, which generate short-term but severe trading losses; and idiosyncratic operational risk events. The scenarios are intended to capture and stress key vulnerabilities and idiosyncratic risks facing the Firm. However, when defining a broad range of scenarios, realized events can always be worse. Accordingly, management considers additional stresses outside these scenarios, as necessary. ICAAP results are reviewed by management and the Board of Directors.

## Comprehensive Capital Analysis and Review ("CCAR")

The Federal Reserve requires large bank holding companies, including the Firm, to submit a capital plan on an annual basis. The Federal Reserve uses the CCAR and Dodd-Frank Act Wall Street Reform and Consumer Protection Act (the "Dodd-Frank Act") stress test processes to ensure that large bank holding companies have sufficient capital during periods of economic and financial stress, and have robust, forward-looking capital assessment and planning processes in place that address each bank holding company's unique risks to enable them to have the ability to absorb losses under certain stress scenarios. Through the CCAR, the Federal Reserve evaluates each bank holding company's capital

adequacy and internal capital adequacy assessment processes, as well as its plans to make capital distributions, such as dividend payments or stock repurchases.

The Firm's CCAR process is integrated into and employs the same methodologies utilized in the Firm's ICAAP process described above. The Firm submitted its 2012 capital plan on January 9, 2012, and received notice of the Federal Reserve's non-objection on March 13, 2012. The Firm increased the quarterly dividend on its common equity to \$0.30 per share commencing in the first quarter of 2012, and during 2012 repurchased (on a trade-date basis) 31 million shares of common stock and 18 million warrants for \$1.3 billion and \$238 million, respectively. Following the voluntary cessation of its common equity repurchase program in May 2012, the Firm resubmitted its capital plan to the Federal Reserve under the 2012 CCAR process in August 2012. Pursuant to a non-objection received from the Federal Reserve on November 5, 2012, with respect to the resubmitted capital plan, the Firm is authorized to

repurchase up to \$3.0 billion of common equity in the first quarter of 2013. The timing and exact amount of any common equity to be repurchased under the program will depend on various factors, including market conditions; the Firm's capital position; organic and other investment opportunities; and legal and regulatory considerations, among other factors.

On January 7, 2013, the Firm submitted its capital plan to the Federal Reserve under the Federal Reserve's 2013 CCAR process. The Firm's plan relates to the last three quarters of 2013 and the first quarter of 2014 (that is, the 2013 CCAR capital plan relates to dividends to be declared commencing in June 2013, and to common equity repurchases and other capital actions commencing April 1, 2013). The Firm expects to receive the Federal Reserve's response to its plan no later than March 14, 2013. The Firm expects that its Board of Directors will declare the regular quarterly common stock dividend of \$0.30 per share for the 2013 first quarter at its Board meeting to be held on March 19, 2013. For additional information on the Firm's capital actions, see Capital actions on page 122, and Notes 22 and 23 on pages 300 and 300–301, respectively, of this Annual Report.

#### Capital Disciplines

The Firm assesses capital based on:

- Regulatory capital requirements
- Economic risk capital assessment
- Line of business equity attribution

Regulatory capital is the capital required to be held by the Firm pursuant to the standards stipulated by U.S. bank regulatory agencies. Regulatory capital is the primary measure used to assess capital adequacy at JPMorgan Chase, as regulatory capital measures are the basis upon which the Federal Reserve objects or does not object to the Firm's planned capital actions as set forth in the Firm's CCAR submission.

Economic risk capital is assessed by evaluating the underlying risks of JPMorgan Chase's business activities using internal risk evaluation methods. These methods result in capital allocations for both individual and aggregated LOB transactions and can be grouped into four main categories:

- Credit risk
- Market risk
- Operational risk
- Private equity risk

These internal calculations result in the capital needed to cover JPMorgan Chase's business activities in the event of unexpected losses.

In determining line of business equity the Firm evaluates the amount of capital the line of business would require if it were operating independently, incorporating sufficient capital to address regulatory capital requirements (including Basel III Tier 1 common capital requirements as

discussed below), economic risk measures and capital levels for similarly rated peers.

#### Regulatory capital

The Federal Reserve establishes capital requirements, including well-capitalized standards, for the consolidated financial holding company. The Office of the Comptroller of the Currency ("OCC") establishes similar capital requirements and standards for the Firm's national banks, including JPMorgan Chase Bank, N.A. and Chase Bank USA, N.A.

#### Basel

The minimum risk-based capital requirements adopted by the U.S. federal banking agencies follow the Capital Accord ("Basel I") of the Basel Committee on Banking Supervision ("Basel Committee"). In 2004, the Basel Committee published a revision to the Capital Accord ("Basel II"). The goal of the Basel II framework is to provide more risk-sensitive regulatory capital calculations and promote enhanced risk management practices among large, internationally active banking organizations. U.S. banking regulators published a final Basel II rule in December 2007, which requires JPMorgan Chase to implement Basel II at the holding company level, as well as at certain of its key U.S. bank subsidiaries.



Prior to full implementation of the Basel II framework, JPMorgan Chase is required to complete a qualification period of at least four consecutive quarters during which it needs to demonstrate that it meets the requirements of the rule to the satisfaction of its U.S. banking regulators. JPMorgan Chase is currently in the qualification period and expects to be in compliance with all relevant Basel II rules within the established timelines. In addition, the Firm has adopted, and will continue to adopt, based on various established timelines, Basel II rules in certain non-U.S. jurisdictions, as required.

In connection with the U.S. Government's Supervisory Capital Assessment Program in 2009 ("SCAP"), U.S. banking regulators developed an additional measure of capital, Tier 1 common, which is defined as Tier 1 capital less elements of Tier 1 capital not in the form of common equity, such as perpetual preferred stock, noncontrolling interests in subsidiaries and trust preferred securities. The Federal Reserve employs a minimum 5% Tier 1 common ratio standard for CCAR purposes, in addition to the other minimum capital requirements under Basel I.

The following table presents the regulatory capital, assets and risk-based capital ratios for JPMorgan Chase at December 31, 2012 and 2011, under Basel I. As of December 31, 2012 and 2011, JPMorgan Chase and all of its banking subsidiaries were well-capitalized and each met all capital requirements to which it was subject.

## Management's discussion and analysis

## Risk-based capital ratios

December 31,	2012		2011	
Capital ratios				
Tier 1 capital	12.6	%	12.3	%
Total capital	15.3		15.4	
Tier 1 leverage	7.1		6.8	
Tier 1 common <sup>(a)</sup>	11.0		10.1	

(a) The Tier 1 common ratio is Tier 1 common capital divided by RWA.

At December 31, 2012 and 2011, JPMorgan Chase maintained Tier 1 and Total capital ratios in excess of the well-capitalized standards established by the Federal Reserve, as indicated in the above tables. In addition, at December 31, 2012 and 2011, the Firm's Tier 1 common ratio was significantly above the 5% CCAR standard. For more information, see Note 28 on pages 306–308 of this Annual Report.

A reconciliation of total stockholders' equity to Tier 1 common, Tier 1 capital and Total qualifying capital is presented in the table below.

## Risk-based capital components and assets

December 31, (in millions)	2012		2011	
Total stockholders' equity	\$204,069		\$183,573	
Less: Preferred stock	9,058		7,800	
Common stockholders' equity	195,011		175,773	
Effect of certain items in accumulated other comprehensive income/(loss) excluded from Tier 1 common	(4,198	)	(970	)
Less: Goodwill <sup>(a)</sup>	45,663		45,873	
Fair value DVA on structured notes and derivative liabilities related to the Firm's credit quality	1,577		2,150	
Investments in certain subsidiaries and other	920		993	
Other intangible assets <sup>(a)</sup>	2,311		2,871	
Tier 1 common	140,342		122,916	
Preferred stock	9,058		7,800	
Qualifying hybrid securities and noncontrolling interests <sup>(b)</sup>	10,608		19,668	
Adjustment for investments in certain subsidiaries and other	(6	)	—	
Total Tier 1 capital	160,002		150,384	
Long-term debt and other instruments qualifying as Tier 2	18,061		22,275	
Qualifying allowance for credit losses	15,995		15,504	
Adjustment for investments in certain subsidiaries and other	(22	)	(75	)
Total Tier 2 capital	34,034		37,704	
Total qualifying capital	\$194,036		\$188,088	
Risk-weighted assets	\$1,270,378		\$1,221,198	
Total adjusted average assets	\$2,243,242		\$2,202,087	

(a) Goodwill and other intangible assets are net of any associated deferred tax liabilities.

(b) Primarily includes trust preferred securities of certain business trusts.

The following table presents the changes in Tier 1 common, Tier 1 capital and Tier 2 capital for the year ended December 31, 2012.

## Capital rollforward

Year ended December 31, (in millions)	2012	
Tier 1 common at December 31, 2011	\$122,916	
Net income	21,284	
Dividends declared	(5,376	)
Net issuance of treasury stock	1,153	

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Changes in capital surplus	(998)	)
Effect of certain items in accumulated other comprehensive income/(loss) excluded from Tier 1 common	(69)	)
Qualifying non-controlling minority interests in consolidated subsidiaries	309	
DVA on structured notes and derivative liabilities	573	
Goodwill and other nonqualifying intangibles (net of deferred tax liabilities)	770	
Other	(220)	)
Increase in Tier 1 common	17,426	
Tier 1 common at December 31, 2012	\$140,342	
Tier 1 capital at December 31, 2011	\$150,384	
Change in Tier 1 common	17,426	
Issuance of noncumulative perpetual preferred stock	1,258	
Net redemption of qualifying trust preferred securities	(9,369)	)
Other	303	
Increase in Tier 1 capital	9,618	
Tier 1 capital at December 31, 2012	\$160,002	
Tier 2 capital at December 31, 2011	\$37,704	
Change in long-term debt and other instruments qualifying as Tier 2	(4,214)	)
Change in allowance for credit losses	491	
Other	53	
Decrease in Tier 2 capital	(3,670)	)
Tier 2 capital at December 31, 2012	\$34,034	
Total capital at December 31, 2012	\$194,036	

Risk-weighted assets were \$1,270 billion at December 31, 2012, an increase of \$49 billion from December 31, 2011. In addition to the growth in the Firm's assets, the increase in risk-weighted assets also reflected an adjustment to reflect regulatory guidance regarding a limited number of market risk models used for certain positions held by the Firm during the first half of 2012, including the synthetic credit portfolio. In the fourth quarter of 2012, the adjustment to RWA decreased substantially as a result of regulatory approval of certain market risk models and a reduction in related positions.

In June 2012, U.S. federal banking agencies published final rules that went into effect on January 1, 2013, that provide for additional capital requirements for trading positions and securitizations ("Basel 2.5"). It is currently estimated that implementation of these rules could result in approximately a 100 basis point decrease from the Firm's Basel I Tier 1 common ratio at December 31, 2012 (all other factors being constant).

In June 2012, U.S. federal banking agencies also published a Notice for Proposed Rulemaking ("NPR") for

implementing further revisions to the Capital Accord in the U.S. (such further revisions are commonly referred to as “Basel III”). Basel III revised Basel II by, among other things, narrowing the definition of capital, and increasing capital requirements for specific exposures. Basel III also includes higher capital ratio requirements and provides that the Tier 1 common capital requirement will be increased to 7%, comprised of a minimum ratio of 4.5% plus a 2.5% capital conservation buffer. Implementation of the 7% Tier 1 common capital requirement is required by January 1, 2019. In addition, global systemically important banks (“GSIBs”) will be required to maintain Tier 1 common requirements above the 7% minimum in amounts ranging from an additional 1% to an additional 2.5%. In November 2012, the Financial Stability Board (“FSB”) indicated that it would require the Firm, as well as three other banks, to hold the additional 2.5% of Tier 1 common; the requirement will be phased in beginning in 2016. The Basel Committee also stated it intended to require certain GSIBs to hold an additional 1% of Tier 1 common under certain circumstances, to act as a disincentive for the GSIB from taking actions that would further increase its systemic importance. Currently, no GSIB (including the Firm) is required to hold this additional 1% of Tier 1 common.

In addition, pursuant to the requirements of the Dodd-Frank Act, U.S. federal banking agencies have proposed certain permanent Basel I floors under Basel II and Basel III capital calculations.

The following table presents a comparison of the Firm’s Tier 1 common under Basel I rules to its estimated Tier 1 common under Basel III rules, along with the Firm’s estimated risk-weighted assets. Tier 1 common under Basel III includes additional adjustments and deductions not included in Basel I Tier 1 common, such as the inclusion of AOCI related to AFS securities and defined benefit pension and other postretirement employee benefit (“OPEB”) plans.

The Firm estimates that its Tier 1 common ratio under Basel III rules would be 8.7% as of December 31, 2012. The Tier 1 common ratio under both Basel I and Basel III are non-GAAP financial measures. However, such measures are used by bank regulators, investors and analysts as a key measure to assess the Firm’s capital position and to compare the Firm’s capital to that of other financial services companies.

December 31, 2012

(in millions, except ratios)

Tier 1 common under Basel I rules	\$ 140,342	
Adjustments related to AOCI for AFS securities and defined benefit pension and OPEB plans	4,077	
All other adjustments	(453	)
Estimated Tier 1 common under Basel III rules	\$ 143,966	
Estimated risk-weighted assets under Basel III rules <sup>(a)</sup>	\$ 1,647,903	
Estimated Tier 1 common ratio under Basel III rules <sup>(b)</sup>	8.7	%

(a) Key differences in the calculation of risk-weighted assets between Basel I and Basel III include: (1) Basel III credit risk RWA is based on risk-sensitive approaches which largely rely on the use of internal

credit models and parameters, whereas Basel I RWA is based on fixed supervisory risk weightings which vary only by counterparty type and asset class; (2) Basel III market risk RWA reflects the new capital requirements related to trading assets and securitizations, which include incremental capital requirements for stress VaR, correlation trading, and re-securitization positions; and (3) Basel III includes RWA for operational risk, whereas Basel I does not. The actual impact on the Firm’s capital ratios upon implementation could differ depending on final implementation guidance from the regulators, as well as regulatory approval of certain of the Firm’s internal risk models.

(b) The Tier 1 common ratio is Tier 1 common divided by RWA.

The Firm’s estimate of its Tier 1 common ratio under Basel III reflects its current understanding of the Basel III rules based on information currently published by the Basel Committee and U.S. federal banking agencies and on the application of such rules to its businesses as currently conducted; it excludes the impact of any changes the Firm may make in the future to its businesses as a result of implementing the Basel III rules, possible enhancements to certain market risk models, and any further implementation guidance from the regulators.

The Basel III capital requirements are subject to prolonged transition periods. The transition period for banks to meet the Tier 1 common requirement under Basel III was originally scheduled to begin in 2013, with full implementation on January 1, 2019. In November 2012, the U.S. federal banking agencies announced a delay in the implementation

dates for the Basel III capital requirements. The additional capital requirements for GSIBs will be phased in starting January 1, 2016, with full implementation on January 1, 2019. Management's current objective is for the Firm to reach, by the end of 2013, an estimated Basel III Tier I common ratio of 9.5%.

Additional information regarding the Firm's capital ratios and the federal regulatory capital standards to which it is subject is presented in Supervision and regulation on pages 1–8 of the 2012 Form 10-K, and Note 28 on pages 306–308 of this Annual Report.

Broker-dealer regulatory capital

JPMorgan Chase's principal U.S. broker-dealer subsidiaries are J.P. Morgan Securities LLC ("JPMorgan Securities") and J.P. Morgan Clearing Corp. ("JPMorgan Clearing"). JPMorgan Clearing is a subsidiary of JPMorgan Securities and provides clearing and settlement services. JPMorgan Securities and JPMorgan Clearing are each subject to Rule 15c3-1 under the Securities Exchange Act of 1934 (the "Net Capital Rule"). JPMorgan Securities and JPMorgan Clearing are also each registered as futures commission merchants and subject to Rule 1.17 of the Commodity Futures Trading Commission ("CFTC").

JPMorgan Securities and JPMorgan Clearing have elected to compute their minimum net capital requirements in accordance with the "Alternative Net Capital Requirements" of the Net Capital Rule. At December 31, 2012, JPMorgan Securities' net capital, as defined by the Net Capital Rule, was \$13.5 billion, exceeding the minimum requirement by

## Management's discussion and analysis

\$12.0 billion, and JPMorgan Clearing's net capital was \$6.6 billion, exceeding the minimum requirement by \$5.0 billion.

In addition to its minimum net capital requirement, JPMorgan Securities is required to hold tentative net capital in excess of \$1.0 billion and is also required to notify the SEC in the event that tentative net capital is less than \$5.0 billion, in accordance with the market and credit risk standards of Appendix E of the Net Capital Rule. As of December 31, 2012, JPMorgan Securities had tentative net capital in excess of the minimum and notification requirements.

J.P. Morgan Securities plc (formerly J.P. Morgan Securities Ltd.) is a wholly-owned subsidiary of JPMorgan Chase Bank, N.A. and is the Firm's principal operating subsidiary in the U.K. It has authority to engage in banking, investment banking and broker-dealer activities. J.P. Morgan Securities plc is regulated by the U.K. Financial Services Authority ("FSA"). At December 31, 2012, it had total capital of \$20.8 billion, or a Total capital ratio of 15.5% which exceeded the 8% well-capitalized standard applicable to it under Basel 2.5.

## Economic risk capital

JPMorgan Chase assesses its capital adequacy relative to the risks underlying its business activities using internal risk-assessment methodologies. The Firm measures economic capital primarily based on four risk factors: credit, market, operational and private equity risk.

Year ended December 31, (in billions)	Yearly Average		
	2012	2011	2010
Credit risk	\$46.6	\$48.2	\$49.7
Market risk	17.5	14.5	15.1
Operational risk	15.9	8.5	7.4
Private equity risk	6.0	6.9	6.2
Economic risk capital	86.0	78.1	78.4
Goodwill	48.2	48.6	48.6
Other <sup>(a)</sup>	50.2	46.6	34.5
Total common stockholders' equity	\$184.4	\$173.3	\$161.5

(a) Reflects additional capital required, in the Firm's view, to meet its regulatory and debt rating objectives.

## Credit risk capital

Credit risk capital is estimated separately for the wholesale businesses (CIB, CB and AM) and consumer business (CCB).

Credit risk capital for the wholesale credit portfolio is defined in terms of unexpected credit losses, both from defaults and from declines in the value of the portfolio due to credit deterioration, measured over a one-year period at a confidence level consistent with an "AA" credit rating standard. Unexpected losses are losses in excess of those for which the allowance for credit losses is maintained. The capital methodology is based on several principal drivers of credit risk: exposure at default (or loan-equivalent amount),

default likelihood, credit spreads, loss severity and portfolio correlation.

Credit risk capital for the consumer portfolio is based on product and other relevant risk segmentation. Actual segment-level default and severity experience are used to estimate unexpected losses for a one-year horizon at a confidence level consistent with an "AA" credit rating standard. The decrease in credit risk capital in 2012 was driven by consumer portfolio runoff and continued model enhancements to better estimate future stress credit losses in the consumer portfolio. See Credit Risk Management on pages 134–135 of this Annual Report for more information about these credit risk measures.

## Market risk capital

The Firm calculates market risk capital guided by the principle that capital should reflect the risk of loss in the value of the portfolios and financial instruments caused by adverse movements in market variables, such as interest and foreign exchange rates, credit spreads, and securities and commodities prices, taking into account the liquidity of the financial instruments. Results from daily VaR, weekly stress tests, issuer credit spreads and default risk calculations,

as well as other factors, are used to determine appropriate capital levels. Market risk capital is allocated to each business segment based on its risk assessment. The increase in market risk capital in 2012 was driven by increased risk in the synthetic credit portfolio. See Market Risk Management on pages 163–169 of this Annual Report for more information about these market risk measures.

#### Operational risk capital

Operational risk is the risk of loss resulting from inadequate or failed processes or systems, human factors or external events. The operational risk capital model is based on actual losses and potential scenario-based losses, with adjustments to the capital calculation to reflect changes in the quality of the control environment. The increase in operational risk capital in 2012 was primarily due to continued model enhancements to better capture large historical loss events, including mortgage-related litigation costs. The increases that occurred during 2012 will be fully reflected in average operational risk capital in 2013. See Operational Risk Management on pages 175–176 of this Annual Report for more information about operational risk.

#### Private equity risk capital

Capital is allocated to privately- and publicly-held securities, third-party fund investments, and commitments in the private equity portfolio, within the Corporate/Private Equity segment, to cover the potential loss associated with a decline in equity markets and related asset devaluations. In addition to negative market fluctuations, potential losses in private equity investment portfolios can be magnified by liquidity risk.

## Line of business equity

The Firm's framework for allocating capital to its business segments is based on the following objectives:

• Integrate firmwide and line of business capital management activities;

• Measure performance consistently across all lines of business; and

• Provide comparability with peer firms for each of the lines of business

In determining line of business equity the Firm evaluates the amount of capital the line of business would require if it were operating independently, incorporating sufficient capital to address regulatory capital requirements (including Basel III Tier 1 common capital requirements as discussed below), economic risk measures and capital levels for similarly rated peers. Capital is also allocated to each line of business for, among other things, goodwill and other intangibles associated with acquisitions effected by the line of business. ROE is measured and internal targets for expected returns are established as key measures of a business segment's performance.

Line of business equity	Yearly Average		
Year ended December 31, (in billions)	2012	2011	2010
Consumer & Community Banking	\$43.0	\$41.0	\$43.0
Corporate & Investment Bank	47.5	47.0	46.5
Commercial Banking	9.5	8.0	8.0
Asset Management	7.0	6.5	6.5
Corporate/Private Equity	77.4	70.8	57.5
Total common stockholders' equity	\$184.4	\$173.3	\$161.5

Effective January 1, 2012, the Firm revised the capital allocated to each of its businesses, reflecting additional refinement of each segment's Basel III Tier 1 common capital requirements.

In addition, effective January 1, 2013, the Firm further refined the capital allocation framework to align it with the revised line of business structure that became effective in the fourth quarter of 2012. The increase in equity levels for the lines of businesses is largely driven by the most current regulatory guidance on Basel 2.5 and Basel III requirements (including the NPR), principally for CIB and CIO, and by anticipated business growth.

Line of business equity	January 1,	December 31,	
(in billions)	2013 <sup>(a)</sup>	2012	2011
Consumer & Community Banking	\$46.0	\$43.0	\$41.0
Corporate & Investment Bank	56.5	47.5	47.0
Commercial Banking	13.5	9.5	8.0
Asset Management	9.0	7.0	6.5
Corporate/Private Equity	70.0	88.0	73.3
Total common stockholders' equity	\$195.0	\$195.0	\$175.8

(a) Reflects refined capital allocations effective January 1, 2013 as discussed above.

The Firm will continue to assess the level of capital required for each line of business, as well as the assumptions and methodologies used to allocate capital to the business segments, and further refinements may be implemented in future periods.



## Management's discussion and analysis

## Capital actions

## Issuance of preferred stock

On August 27, 2012, the Firm issued \$1.3 billion of fixed-rate noncumulative perpetual preferred stock. For additional information on the Firm's preferred stock, see Note 22 on page 300 of this Annual Report.

## Dividends

JPMorgan Chase declared quarterly cash dividends on its common stock in the amount of \$0.05 per share for each quarter of 2010.

On March 18, 2011, the Board of Directors increased the Firm's quarterly common stock dividend from \$0.05 to \$0.25 per share, effective with the dividend paid on April 30, 2011, to shareholders of record on April 6, 2011. On March 13, 2012, the Board of Directors increased the Firm's quarterly common stock dividend from \$0.25 to \$0.30 per share, effective with the dividend paid on April 30, 2012, to shareholders of record on April 5, 2012. The Firm's common stock dividend policy reflects JPMorgan Chase's earnings outlook, desired dividend payout ratio, capital objectives, and alternative investment opportunities. The Firm's current expectation is to return to a payout ratio of approximately 30% of normalized earnings over time.

For information regarding dividend restrictions, see Note 22 and Note 27 on pages 300 and 306, respectively, of this Annual Report.

The following table shows the common dividend payout ratio based on reported net income.

Year ended December 31,	2012	2011	2010
Common dividend payout ratio	23	% 22	% 5

## Common equity repurchases

On March 18, 2011, the Board of Directors approved a \$15.0 billion common equity (i.e., common stock and warrants) repurchase program, of which \$8.95 billion was authorized for repurchase in 2011. On March 13, 2012, the Board of Directors authorized a new \$15.0 billion common equity repurchase program, of which up to \$12.0 billion was approved for repurchase in 2012 and up to an additional \$3.0 billion was approved through the end of the first quarter of 2013. Following the voluntary cessation of its common equity repurchase program in May 2012, the Firm resubmitted its capital plan to the Federal Reserve under the 2012 CCAR process in August 2012. Pursuant to a non-objection received from the Federal Reserve on November 5, 2012, with respect to the resubmitted capital plan, the Firm is authorized to repurchase up to \$3.0 billion of common equity in the first quarter of 2013. The timing and exact amount of any common equity to be repurchased under the program will depend on various factors, including market conditions; the Firm's capital position; organic and other investment opportunities; and legal and regulatory considerations, among other factors.

During 2012, 2011 and 2010, the Firm repurchased (on a trade-date basis) 31 million, 229 million, and 78 million shares of common stock, for \$1.3 billion, \$8.8 billion and \$3.0 billion, respectively. During 2012 and 2011, the Firm repurchased 18 million and 10 million warrants (originally issued to the U.S. Treasury in 2008 pursuant to its Capital Purchase Program), for \$238 million and \$122 million, respectively. The Firm did not repurchase any of the warrants during 2010.

The Firm may, from time to time, enter into written trading plans under Rule 10b5-1 of the Securities Exchange Act of 1934 to facilitate repurchases in accordance with the repurchase program. A Rule 10b5-1 repurchase plan allows the Firm to repurchase its equity during periods when it would not otherwise be repurchasing common equity — for example, during internal trading “black-out periods.” All purchases under a Rule 10b5-1 plan must be made according to a predefined plan established when the Firm is not aware of material nonpublic information.

The authorization to repurchase common equity will be utilized at management's discretion, and the timing of purchases and the exact amount of common equity that may be repurchased is subject to various factors, including market conditions; legal considerations affecting the amount and timing of repurchase activity; the Firm's capital position (taking into account goodwill and intangibles); internal capital generation; and alternative investment opportunities. The repurchase program does not include specific price targets or timetables; may be executed through open market purchases or privately negotiated transactions, or utilizing Rule 10b5-1 programs; and may be suspended at any time.

For additional information regarding repurchases of the Firm's equity securities, see Part II, Item 5: Market for registrant's common equity, related stockholder matters and issuer purchases of equity securities, on pages 22–23 of JPMorgan Chase's 2012 Form 10-K and 2013 Business Outlook, on pages 68–69 of this Annual Report.

## RISK MANAGEMENT

Risk is an inherent part of JPMorgan Chase's business activities. The Firm's risk management framework and governance structure are intended to provide comprehensive controls and ongoing management of the major risks inherent in its business activities. The Firm employs a holistic approach to risk management intended to ensure the broad spectrum of risk types are considered in managing its business activities. The Firm's risk management framework is intended to create a culture of risk awareness and personal responsibility throughout the Firm where collaboration, discussion, escalation and sharing of information are encouraged.

The Firm's overall risk appetite is established in the context of the Firm's capital, earnings power, and diversified business model. The Firm employs a formalized risk appetite framework to integrate the Firm's objectives with return targets, risk controls and capital management. The Firm's Chief Executive Officer ("CEO") is responsible for setting the overall firmwide risk appetite. The lines of business CEOs, Chief Risk Officers ("CROs") and Corporate/Private Equity senior management are responsible for setting the risk appetite for their respective lines of business or risk limits, within the Firm's limits, and these risk limits are subject to approval by the CEO and firmwide Chief Risk Officer ("CRO") or the Deputy CRO. The Risk Policy Committee of the Firm's Board of Directors approves the risk appetite policy on behalf of the entire Board of Directors.

### Risk governance

The Firm's risk governance structure is based on the principle that each line of business is responsible for managing the risks inherent in its business, albeit with appropriate corporate oversight. Each line of business risk committee is responsible for decisions regarding the business' risk strategy, policies as appropriate and controls. There are nine major risk types identified arising out of the business activities of the Firm: liquidity risk, credit risk, market risk, interest rate risk, country risk, principal risk, operational risk, legal risk, fiduciary risk and reputation risk.

Overlaying line of business risk management are corporate functions with risk management-related responsibilities: Risk Management, Treasury and CIO, the Regulatory Capital Management Office ("RCMO") the Firmwide Oversight and Control Group, Legal and Compliance and the Firmwide Valuation Governance Forum.

Risk Management reports independently of the lines of business to provide oversight of firmwide risk management and controls, and is viewed as a partner in achieving appropriate business risk and reward objectives. Risk Management coordinates and communicates with each line of business through the line of business risk committees and CROs to manage risk. The Risk Management function is headed by the Firm's Chief Risk Officer, who is a member of

the Firm's Operating Committee and who reports to the Chief Executive Officer and is accountable to the Board of Directors, primarily through the Board's Risk Policy Committee. The Chief Risk Officer is also a member of the line of business risk committees. Within the Firm's Risk Management function are units responsible for credit risk, market risk, country risk, principal risk, model risk and development, reputational risk and operational risk framework, as well as risk reporting and risk policy. Risk Management is supported by risk technology and operations functions that are responsible for building the information technology infrastructure used to monitor and manage risk.

The Risk Management organization maintains a Risk Operating Committee and the Risk Management Business Control Committees. The Risk Operating Committee focuses on risk management, including setting risk management priorities, escalation of risk issues, talent and resourcing, and other issues brought to its attention by line of business CEOs, CROs and cross-line of business risk officers (e.g., Country Risk, Market Risk and Model Risk). This committee meets bi-weekly and is led by the CRO or deputy-CRO. There are three business control committees within the Risk Management function (Wholesale Risk Business Control Committee, Consumer Risk Business Control Committee and the Corporate Risk Business Control Committee) which meet at least quarterly and focus on the control environment, including outstanding action plans, audit status, operational risk statistics (such as losses, risk indicators, etc.), compliance with critical control programs, and risk technology.

The Model Risk and Development unit, within the Risk Management function, provides oversight of the firmwide Model Risk policy, guidance with respect to a model's appropriate usage and conducts independent reviews of models. Treasury and CIO are predominantly responsible for measuring, monitoring, reporting and managing the Firm's liquidity, funding, capital and structural interest rate and foreign exchange risks. RCMO is responsible for measuring,

monitoring, and reporting the Firm's capital and related risks.

Legal and Compliance has oversight for legal risk. In January 2013, the Compliance function was moved to report to the Firm's co-COOs in order to better align the function, which is a critical component of how the Firm manages its risk, with the Firm's Oversight and Control function. Compliance will continue to work closely with Legal, given their complementary missions. The Firm's Oversight and Control group is dedicated to enhancing the Firm's control framework, and to looking within and across the lines of business and the Corporate functions (including CIO) to identify and remediate control issues.

Management's discussion and analysis

In addition, the Firm has a firm-wide Valuation Governance Forum ("VGF") comprising senior finance and risk executives to oversee the management of risks arising from valuation activities conducted across the Firm. The VGF is chaired by the firm-wide head of the valuation control function, and also includes sub-forums for the CIB, MB, and certain corporate functions including Treasury and CIO.

In addition to the risk committees of the lines of business and the above-referenced risk management functions, the Firm also has numerous management level committees focused on measuring, monitoring and managing risk. All of these committees are accountable to the CEO and Operating

Committee. The membership of these committees is composed of senior management of the Firm; membership varies across the committees and is based on the objectives of the individual committee. Typically membership includes representatives of the lines of business, CIO, Treasury, Risk Management, Finance, Legal and Compliance and other senior executives. The committees meet regularly to discuss a broad range of topics including, for example, current market conditions and other external events, risk exposures, and risk concentrations to ensure that the effects of risk issues are considered broadly across the Firm's businesses.

The Board of Directors exercises its oversight of the Firm's risk management principally through the Board's Risk Policy Committee and Audit Committee.

The Board's Risk Policy Committee oversees senior management risk-related responsibilities, including reviewing management policies and performance against these policies and related benchmarks. The Board's Risk Policy Committee also reviews firm level market risk limits at least annually. The CROs for each line of business and the heads of Country Risk, Market Risk, Model Risk and the Wholesale Chief Credit Officer meet with the Board's Risk Policy Committee on a regular basis. In addition, in

conjunction with the Firm's capital assessment process, the CEO or Chief Risk Officer is responsible for notifying the Risk Policy Committee of any results which are projected to exceed line of business or firmwide risk appetite tolerances. The CEO or CRO is required to notify the Chairman of the Board's Risk Policy Committee if certain firmwide limits are modified or exceeded.

The Audit Committee is responsible for oversight of guidelines and policies that govern the process by which risk assessment and management is undertaken. In addition, the Audit Committee reviews with management the system of internal controls that is relied upon to provide

reasonable assurance of compliance with the Firm's operational risk management processes. In addition, Internal Audit, an independent function within the Firm that provides independent and objective assessments of the control environment, reports directly to the Audit Committee of the Board of Directors and administratively to the CEO. Internal Audit conducts regular independent reviews to evaluate the Firm's internal control structure and compliance with applicable regulatory requirements and is responsible for providing the Audit Committee, senior management and regulators with an independent assessment of the Firm's ability to manage and control risk.

Among the Firm's management level committees that are primarily responsible for certain risk-related functions are: The Asset-Liability Committee, chaired by the Corporate Treasurer, monitors the Firm's overall interest rate risk and liquidity risk. ALCO is responsible for reviewing and approving the Firm's liquidity policy and contingency funding plan. ALCO also reviews the Firm's funds transfer pricing policy (through which lines of business "transfer" interest rate and foreign exchange risk to Treasury), nontrading interest rate-sensitive revenue-at-risk, overall interest rate position, funding requirements and strategy, and the Firm's securitization programs (and any required liquidity support by the Firm of such programs).

The Firmwide Risk Committee is co-chaired by the Firm's CEO and CRO or Deputy CRO. The Risk Governance Committee is chaired by the Firm's CRO and Deputy CRO. These committees meet monthly to review cross-line of business issues such as risk appetite, certain business activity and aggregate risk measures, risk policy, risk methodology regulatory capital and other regulatory issues, as referred by line of business risk committees. The Risk Governance Committee is also responsible for ensuring that line of business and firmwide risk reporting and compliance with risk appetite levels are monitored, in conjunction with the Firm's capital assessment process. Each line of business risk committee meets at least on a monthly basis and is co-chaired by the line of business CRO and CEO or equivalent. Each line of business risk committee is also attended by individuals from outside the line of business. It is the responsibility of committee members of the line of business risk committees to escalate line of business risk topics to the Firmwide Risk Committee as appropriate.

In addition to the above, there is the Investment Committee, chaired by the Firm's Chief Financial Officer that meets on an as needed basis and oversees global merger and acquisition activities undertaken by JPMorgan Chase for its own account that fall outside the scope of the Firm's private equity and other principal finance activities.

#### Risk monitoring and control

The Firm's ability to properly identify, measure, monitor and report risk is critical to both its soundness and profitability.

**Risk identification:** The Firm's exposure to risk through its daily business dealings, including lending and capital markets activities and operational services, is identified and aggregated through the Firm's risk management infrastructure. There are nine major risk types identified in the business activities of the Firm: liquidity risk, credit risk, market risk, interest rate risk, country risk, private equity risk, operational risk, legal and fiduciary risk, and reputation risk.

**Risk measurement:** The Firm measures risk using a variety of methodologies, including calculating probable loss, unexpected loss and value-at-risk, and by conducting stress tests and making comparisons to external benchmarks. Measurement models and related assumptions are subject to internal model review, empirical validation and benchmarking with the goal of ensuring that the Firm's risk estimates are reasonable and reflective of the risk of the underlying positions.

**Risk monitoring/control:** The Firm's risk management policies and procedures incorporate risk mitigation strategies and include approval limits by customer, product, industry, country and business. These limits are monitored on a daily, weekly and monthly basis, as appropriate.

**Risk reporting:** The Firm reports risk exposures on both a line of business and a consolidated basis. This information is reported to management on a daily, weekly and monthly basis, as appropriate.

#### Model risk

The Firm uses risk management models, including Value-at-Risk ("VaR") and stress models, for the measurement, monitoring and management of risk positions. Valuation models are employed by the Firm to value certain financial instruments which cannot otherwise be valued using quoted prices. These valuation models may also be employed as

inputs to risk management models, for example in VaR and economic stress models. The Firm also makes use of models for a number of other purposes, including the calculation of regulatory capital requirements and estimating the allowance for credit losses.

Models are owned by various functions within the Firm based on the specific purposes of such models. For example, VaR models and certain regulatory capital models are owned by the line-of-business aligned risk management functions. Owners of the models are responsible for the development, implementation and testing of models, as well as referral of models to the Model Risk function (within the Model Risk and Development unit) for review and approval. Once models have been approved, the model owners maintain a robust operating environment and monitor and evaluate the performance of models on an ongoing basis. Model owners enhance models in response to changes in

Management's discussion and analysis

the portfolios and for changes in product and market developments, as well as improvements in available modeling techniques and systems capabilities, and submit such enhancements to the Model Risk function for review.

The Model Risk function comprises the Model Review Group and the Model Governance Group and reports to the Model Risk and Development unit, which in turn reports to the Chief Risk Officer. The Model Risk function is independent of the model owners and reviews and approves a wide range of models, including risk management, valuation and certain regulatory capital models used by the Firm.

Models are tiered based on an internal standard according to their complexity, the exposure associated with the model and the Firm's reliance on the model. This tiering is subject to the approval of the Model Risk function. The model reviews conducted by the Model Risk function consider a number of factors about the model's suitability for valuation or risk management of a particular product, or other purposes. The factors considered include the assigned model tier, whether the model accurately reflects the characteristics of the instruments and its significant risks, the selection and reliability of model inputs, consistency with models for similar products, the appropriateness of any model-related adjustments, and sensitivity to input parameters and assumptions that cannot be observed from the market. When reviewing a model, the Model Risk function analyzes and challenges the model methodology and the reasonableness of model assumptions and may perform or require additional testing, including back-testing of model outcomes. Model reviews are approved by the appropriate level of management within the Model Risk function based on the relevant tier of the model.

Under the Firm's model risk policy, new significant models, as well as material changes to existing models, are reviewed and approved by the Model Risk function prior to implementation into the operating environment. The Model Risk function performs an annual Firmwide model risk assessment where developments in the product or market are considered in determining whether models need to be reviewed and approved again.

In the event that the Model Risk function does not approve a significant model, escalation to senior management is required and the model owner is required to remediate the model within a time period as agreed upon with the Model Risk function. The model owner is also required to resubmit the model for review to the Model Risk function and to take appropriate actions to mitigate the model risk in the interim. The actions taken will depend on the model that is disapproved and may include, for example, limitation of trading activity. The Firm may also implement other appropriate risk measurement tools in place to augment the model that is subject to remediation.

Exceptions to the Firm's model risk policy may be granted by the Model Risk function to allow a significant model to be used prior to review or approval. Such exceptions have been applied in limited circumstances, and where this is the case, compensating controls similar to those described above have been put in place.

For a summary of valuations based on models, see Critical Accounting Estimates Used by the Firm on pages 180–181 and Note 3 on pages 196–214 of this Annual Report.



## LIQUIDITY RISK MANAGEMENT

Liquidity risk management is intended to ensure that the Firm has the appropriate amount, composition and tenor of funding and liquidity in support of its assets. The primary objectives of effective liquidity management are to ensure that the Firm's core businesses are able to operate in support of client needs and meet contractual and contingent obligations through normal economic cycles as well as during market stress and maintain debt ratings that enable the Firm to optimize its funding mix and liquidity sources while minimizing costs.

The Firm manages liquidity and funding using a centralized, global approach in order to actively manage liquidity for the Firm as a whole, monitor exposures and identify constraints on the transfer of liquidity within the Firm, and maintain the appropriate amount of surplus liquidity as part of the Firm's overall balance sheet management strategy. In the context of the Firm's liquidity management, Treasury is responsible for:

- Measuring, managing, monitoring and reporting the Firm's current and projected liquidity sources and uses;
- Understanding the liquidity characteristics of the Firm's assets and liabilities;
- Defining and monitoring Firmwide and legal entity liquidity strategies, policies, guidelines, and contingency funding plans;
- Liquidity stress testing under a variety of adverse scenarios
- Managing funding mix and deployment of excess short-term cash;
- Defining and implementing funds transfer pricing ("FTP") across all lines of business and regions; and
- Defining and addressing the impact of regulatory changes on funding and liquidity.

The Firm has a liquidity risk governance framework to review, approve and monitor the implementation of liquidity risk policies and funding and capital strategies at the Firmwide, regional and line of business levels.

Specific risk committees responsible for liquidity risk governance include ALCO as well as lines of business and regional asset and liability management committees. For further discussion of the risk committees, see Risk Management on pages 123–126 of this Annual Report.

Management considers the Firm's liquidity position to be strong as of December 31, 2012, and believes that the Firm's unsecured and secured funding capacity is sufficient to meet its on- and off-balance sheet obligations.

### LCR and NSFR

In December 2010, the Basel Committee introduced two new measures of liquidity risk: the liquidity coverage ratio ("LCR") which is intended to measure the amount of "high-quality liquid assets" held by the Firm during an acute stress, in relation to the estimated net cash outflows within the 30-day period; and the net stable funding ratio

("NSFR") which is intended to measure the "available" amount of stable funding relative to the "required" amount of stable funding over a 1-year horizon. The standards require that the LCR be no lower than 100% and the NSFR be greater than 100%.

In January 2013, the Basel Committee introduced certain amendments to the formulation of the LCR, and a revised timetable to phase-in the standard. The LCR will continue to become effective on January 1, 2015, but the minimum requirement will begin at 60%, increasing in equal annual stages to reach 100% on January 1, 2019. The Firm is currently targeting to attain a 100% LCR, based on its current understanding of the requirements, by the end of 2013. The NSFR is scheduled to become effective in 2018.

### Funding

The Firm funds its global balance sheet through diverse sources of funding, including a stable deposit franchise as well as secured and unsecured funding in the capital markets. Access to funding markets is executed regionally through hubs in New York, London, Hong Kong and other locations which enables the Firm to observe and respond effectively to local market dynamics and client needs. The Firm manages and monitors its use of wholesale funding markets to maximize market access, optimize funding cost and ensure diversification of its funding profile across geographic regions, tenors, currencies, product types and counterparties, using key metrics including short-term unsecured funding as a percentage of total liabilities, and in relation to high-quality assets, and counterparty concentration.

### Sources of funds

A key strength of the Firm is its diversified deposit franchise, through each of its lines of business, which provides a stable source of funding and limits reliance on the wholesale funding markets. As of December 31, 2012, the Firm's deposits-to-loans ratio was 163%, compared with 156% at December 31, 2011.

As of December 31, 2012, total deposits for the Firm were \$1,193.6 billion, compared with \$1,127.8 billion at December 31, 2011 (55% and 54% of total liabilities at December 31, 2012 and 2011, respectively). The increase in deposits was predominantly due to growth in retail and wholesale deposits. For further information, see Balance Sheet Analysis on pages 106–108 of this Annual Report.

The Firm typically experiences higher customer deposit inflows at period-ends. Therefore, average deposit balances are more representative of deposit trends. The table below summarizes, by line of business, average deposits for the year ended December 31, 2012 and 2011, respectively.

## Management's discussion and analysis

Deposits (in millions)	December 31,		Year ended December 31, Average	
	2012	2011	2012	2011
Consumer & Community Banking	\$438,484	\$397,825	\$413,911	\$382,678
Corporate & Investment Bank	385,560	362,384	353,048	317,213
Commercial Banking	198,383	196,366	181,805	157,899
Asset Management	144,579	127,464	129,208	106,421
Corporate/Private Equity	26,587	43,767	27,911	47,779
Total Firm	\$1,193,593	\$1,127,806	\$1,105,883	\$1,011,990

A significant portion of the Firm's deposits are retail deposits (37% and 35% at December 31, 2012 and 2011, respectively), which are considered particularly stable as they are less sensitive to interest rate changes or market volatility. Additionally, the majority of the Firm's institutional deposits are also considered to be stable sources of funding since they are generated from customers that maintain operating service relationships with the Firm. For further discussions of deposit balance trends, see the discussion of the results for the Firm's business segments and the Balance Sheet Analysis on pages 80–104 and 106–108, respectively, of this Annual Report.

## Short-term funding

Short-term unsecured funding sources include federal funds and Eurodollars purchased; certificates of deposit; time deposits; commercial paper; and other borrowed funds that generally have maturities of one year or less.

The Firm's reliance on short-term unsecured funding sources is limited. A significant portion of the total commercial paper liabilities, approximately 72% as of December 31, 2012, as shown in the table below, were originated from deposits that customers choose to sweep into commercial paper liabilities as a cash management

program offered by CIB and are not sourced from wholesale funding markets.

The Firm's sources of short-term secured funding primarily consist of securities loaned or sold under agreements to repurchase. Securities loaned or sold under agreements to repurchase generally mature between one day and three months, are secured predominantly by high-quality securities collateral, including government-issued debt, agency debt and agency MBS, and constitute a significant portion of the federal funds purchased and securities loaned or sold under purchase agreements. The increase in the balance at December 31, 2012, compared with the balance at December 31, 2011 was predominantly because of higher secured financing of the Firm's assets. The balances associated with securities loaned or sold under agreements to repurchase fluctuate over time due to customers' investment and financing activities; the Firm's demand for financing; the ongoing management of the mix of the Firm's liabilities, including its secured and unsecured financing (for both the investment and market-making portfolios); and other market and portfolio factors.

At December 31, 2012, the balance of total unsecured and secured other borrowed funds increased, compared with the balance at December 31, 2011. The increase was primarily driven by an increase in term federal funds purchased and in CIB structured notes. The average balance for the year ended December 31, 2012, decreased from the prior year, predominantly driven by maturities of short-term unsecured bank notes and other unsecured borrowings, and other secured short-term borrowings.

For additional information, see the Balance Sheet Analysis on pages 106–108 and Note 13 on page 249 of this Annual Report. The following table summarizes by source select short-term unsecured and secured funding as of December 31, 2012 and 2011, and average balances for the year ended December 31, 2012 and 2011, respectively.

Select Short-term funding (in millions)	December	December	Year ended December 31, Average	
	31, 2012	31, 2011	2012	2011
Commercial paper:				
Wholesale funding	\$15,589	\$4,245	\$14,302	\$6,119

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Client cash management	39,778	47,386	36,478	36,534
Total commercial paper	\$55,367	\$51,631	\$50,780	\$42,653
Other borrowed funds	\$26,636	\$21,908	\$24,174	\$30,943
Securities loaned or sold under agreements to repurchase:				
Securities sold under agreements to repurchase	\$212,278	\$191,649	\$219,625	\$228,514
Securities loaned	23,125	14,214	20,763	19,438
Total securities loaned or sold under agreements to repurchase <sup>(a)(b)(c)</sup>	\$235,403	\$205,863	\$240,388	\$247,952

(a) Excludes federal funds purchased.

Excludes long-term structured repurchase agreements of \$3.3 billion and \$6.1 billion as of December 31, 2012 and (b) 2011, respectively, and average balance of \$7.0 billion and \$4.6 billion for the years ended December 31, 2012 and 2011, respectively.

Excludes long-term securities loaned of \$457 million as of December 31, 2012, and average balance of \$113 (c) million for the year ended December 31, 2012. There were no long-term securities loaned as of December 31, 2011.

## Long-term funding and issuance

Long-term funding provides additional sources of stable funding and liquidity for the Firm. The majority of the Firm's long-term unsecured funding is issued by the parent holding company to provide maximum flexibility in support of both bank and nonbank subsidiary funding.

The following table summarizes long-term unsecured issuance and maturities or redemption for the years ended December 31, 2012 and 2011, respectively. For additional information, see Note 21 on pages 297–299 of this Annual Report.

## Long-term unsecured funding

Year ended December 31, (in millions)	2012	2011
Issuance		
Senior notes issued in the U.S. market	\$15,695	\$29,043
Senior notes issued in non-U.S. markets	8,341	5,173
Total senior notes	24,036	34,216
Trust preferred securities	—	—
Subordinated debt	—	—
Structured notes	15,525	14,761
Total long-term unsecured funding – issuance	\$39,561	\$48,977

## Maturities/redemptions

Total senior notes	\$40,484	\$36,773
Trust preferred securities	9,482	101
Subordinated debt	1,045	2,912
Structured notes	20,183	18,692
Total long-term unsecured funding – maturities/redemptions	\$71,194	\$58,478

Following the Federal Reserve's announcement on June 7, 2012, of proposed rules which will implement the phase-out of Tier 1 capital treatment for trust preferred securities, the Firm announced on June 11, 2012, that it would redeem approximately \$9.0 billion of trust preferred securities pursuant to redemption provisions relating to the occurrence of a "Capital Treatment Event" (as defined in the documents governing those securities). The redemption was completed on July 12, 2012.

The Firm raises secured long-term funding through securitization of consumer credit card loans, residential mortgages, auto loans and student loans, as well as through advances from the FHLBs, all of which increase funding and investor diversity.

The following table summarizes the securitization issuance and FHLB advances and their respective maturities or redemption for the years ended December 31, 2012 and 2011.

## Long-term secured funding

Year ended December 31, (in millions)	Issuance		Maturities/Redemptions	
	2012	2011	2012	2011
Credit card securitization	\$10,800	\$1,775	\$13,187	\$13,556
Other securitizations <sup>(a)</sup>	—	—	487	478
FHLB advances	35,350	4,000	11,124	9,155
Total long-term secured funding	\$46,150	\$5,775	\$24,798	\$23,189

(a) Other securitizations includes securitizations of residential mortgages, auto loans and student loans.

The Firm's wholesale businesses also securitize loans for client-driven transactions; those client-driven loan securitizations are not considered to be a source of funding for the Firm and are not included in the table above. For further description of the client-driven loan securitizations, see Note 16 on pages 280–291 of this Annual Report.

Parent holding company and subsidiary funding

The parent holding company acts as an important source of funding to its subsidiaries. The Firm's liquidity management is therefore intended to ensure that liquidity at the parent holding company is maintained at levels sufficient to fund the operations of the parent holding company and its subsidiaries and affiliates for an extended period of time in a stress environment where access to normal funding sources is disrupted.

To effectively monitor the adequacy of liquidity and funding at the parent holding company, the Firm uses three primary measures:

**Number of months of pre-funding:** The Firm targets pre-funding of the parent holding company to ensure that both contractual and non-contractual obligations can be met for at least 18 months assuming no access to wholesale funding markets. However, due to conservative liquidity management actions taken by the Firm, the current pre-funding of such obligations is greater than target.

**Excess cash:** Excess cash is managed to ensure that daily cash requirements can be met in both normal and stressed environments. Excess cash generated by parent holding company issuance activity is placed on deposit with or as advances to both bank and nonbank subsidiaries or held as liquid collateral purchased through reverse repurchase agreements.

**Stress testing:** The Firm conducts regular stress testing for the parent holding company and major bank subsidiaries as well as the Firm's principal U.S. and U.K. broker-dealer subsidiaries to ensure sufficient liquidity for the Firm in a stressed environment. The Firm's

## Management's discussion and analysis

liquidity management takes into consideration its subsidiaries' ability to generate replacement funding in the event the parent holding company requires repayment of the aforementioned deposits and advances. For further information, see the Stress testing discussion below.

### Global Liquidity Reserve

The Global Liquidity Reserve includes cash on deposit at central banks, and cash proceeds reasonably expected to be received in secured financings of unencumbered high-quality securities (such as sovereign debt, government-guaranteed corporate debt, U.S. government agency debt, and agency MBS) that are available to the Firm on a consolidated basis. The liquidity amount estimated to be realized from secured financings is based on management's current judgment and assessment of the Firm's ability to quickly raise funds from secured financings. The Global Liquidity Reserve also includes the Firm's borrowing capacity at various FHLBs, the Federal Reserve Bank discount window and various other central banks as a result of collateral pledged by the Firm to such banks. Although considered as a source of available liquidity, the Firm does not view borrowing capacity at the Federal Reserve Bank discount window and various other central banks as a primary source of funding.

As of December 31, 2012, the Global Liquidity Reserve was estimated to be approximately \$491 billion, compared with approximately \$379 billion at December 31, 2011. The Global Liquidity Reserve fluctuates due to changes in deposits, the Firm's purchase and investment activities and general market conditions.

In addition to the Global Liquidity Reserve, the Firm has significant amounts of marketable securities such as corporate debt and equity securities available to raise liquidity, if required.

### Stress testing

Liquidity stress tests are intended to ensure sufficient liquidity for the Firm under a variety of adverse scenarios. Results of stress tests are therefore considered in the formulation of the Firm's funding plan and assessment of its liquidity position. Liquidity outflow assumptions are

modeled across a range of time horizons and varying degrees of market and idiosyncratic stress. Standard stress tests are performed on a regular basis and ad hoc stress tests are performed as required. Stress scenarios are produced for the parent holding company and the Firm's major bank subsidiaries as well as the Firm's principal U.S. and U.K. broker-dealer subsidiaries. In addition, separate regional liquidity stress testing is performed.

Liquidity stress tests assume all of the Firm's contractual obligations are met and also take into consideration varying levels of access to unsecured and secured funding markets. Additionally, assumptions with respect to potential non-contractual and contingent outflows include, but are not limited to, the following:

#### Deposits

For bank deposits that have no contractual maturity, the range of potential outflows reflect the type and size of deposit account, and the nature and extent of the Firm's relationship with the depositor.

#### Secured funding

Range of haircuts on collateral based on security type and counterparty.

#### Derivatives

Margin calls by exchanges or clearing houses;

Collateral calls associated with ratings downgrade triggers and variation margin;

Outflows of excess client collateral;

Novation of derivative trades.

#### Unfunded commitments

Potential facility drawdowns reflecting the type of commitment and counterparty.

#### Contingency funding plan

The Firm's contingency funding plan ("CFP"), which is reviewed and approved by ALCO, provides a documented framework for managing both temporary and longer-term unexpected adverse liquidity situations. It sets out a list of indicators and metrics that are reviewed on a daily basis to identify the emergence of increased risks or vulnerabilities in the Firm's liquidity position. The CFP identifies alternative contingent liquidity resources that can be accessed under adverse liquidity circumstances.





Credit ratings

The cost and availability of financing are influenced by credit ratings. Reductions in these ratings could have an adverse effect on the Firm’s access to liquidity sources, increase the cost of funds, trigger additional collateral or funding requirements and decrease the number of investors and counterparties willing to lend to the Firm. Additionally, the Firm’s funding requirements for VIEs and other third-party commitments may be adversely affected by a decline in credit ratings. For additional information on the impact of a credit ratings downgrade on the funding requirements for

VIEs, and on derivatives and collateral agreements, see Special-purpose entities on page 109, and Credit risk, liquidity risk and credit-related contingent features in Note 5 on pages 224–225, of this Annual Report. Critical factors in maintaining high credit ratings include a stable and diverse earnings stream, strong capital ratios, strong credit quality and risk management controls, diverse funding sources, and disciplined liquidity monitoring procedures.

The credit ratings of the parent holding company and certain of the Firm’s significant operating subsidiaries as of December 31, 2012, were as follows.

December 31, 2012	JPMorgan Chase & Co.			JPMorgan Chase Bank, N.A. Chase Bank USA, N.A.			J.P. Morgan Securities LLC		
	Long-term issuer	Short-term issuer	Outlook	Long-term issuer	Short-term issuer	Outlook	Long-term issuer	Short-term issuer	Outlook
Moody’s Investor Services	A2	P-1	Negative	Aa3	P-1	Stable	A1	P-1	Stable
Standard & Poor’s	A	A-1	Negative	A+	A-1	Negative	A+	A-1	Negative
Fitch Ratings	A+	F1	Stable	A+	F1	Stable	A+	F1	Stable

On June 21, 2012, Moody’s downgraded the long-term ratings of the Firm and affirmed all its short-term ratings. The outlook for the parent holding company was left on negative reflecting Moody’s view that government support for U.S. bank holding company creditors is becoming less certain and less predictable. Such ratings actions concluded Moody’s review of 17 banks and securities firms with global capital markets operations, including the Firm, as a result of which all of these institutions were downgraded by various degrees.

Following the disclosure by the Firm, on May 10, 2012, of losses from the synthetic credit portfolio held by CIO, Fitch downgraded the Firm and placed all parent and subsidiary long-term ratings on Ratings Watch Negative. At that time, S&P also revised its outlook on the ratings of the Firm from Stable to Negative. Subsequently, on October 10, 2012, Fitch revised the outlook to Stable and affirmed the Firm’s ratings.

The above-mentioned rating actions did not have a material adverse impact on the Firm’s cost of funds and its ability to fund itself. Further downgrades of the Firm’s long-term ratings by one notch or two notches could result in a downgrade of the Firm’s short-term ratings. If this were to occur, the Firm believes its cost of funds could increase and access to certain funding markets could be reduced. The nature and magnitude of the impact of further ratings downgrades depends on numerous contractual and behavioral factors (which the Firm believes are incorporated in the Firm’s liquidity risk and stress testing metrics). The Firm believes it maintains sufficient liquidity to withstand any potential decrease in funding capacity due to further ratings downgrades.

JPMorgan Chase’s unsecured debt does not contain requirements that would call for an acceleration of payments, maturities or changes in the structure of the existing debt, provide any limitations on future borrowings or require additional collateral, based on unfavorable changes in the Firm’s credit ratings, financial ratios, earnings, or stock price.

Rating agencies continue to evaluate various ratings factors, such as regulatory reforms, rating uplift assumptions surrounding government support, and economic uncertainty and sovereign creditworthiness, and their potential impact on ratings of financial institutions. Although the Firm closely monitors and endeavors to manage factors influencing

its credit ratings, there is no assurance that its credit ratings will not be changed in the future.

## Management's discussion and analysis

## Cash flows

For the years ended December 31, 2012, 2011 and 2010, cash and due from banks decreased \$5.9 billion, and increased by \$32.0 billion and \$1.4 billion, respectively. The following discussion highlights the major activities and transactions that affected JPMorgan Chase's cash flows during 2012, 2011 and 2010, respectively.

## Cash flows from operating activities

JPMorgan Chase's operating assets and liabilities support the Firm's capital markets and lending activities, including the origination or purchase of loans initially designated as held-for-sale. Operating assets and liabilities can vary significantly in the normal course of business due to the amount and timing of cash flows, which are affected by client-driven and risk management activities, and market conditions. Management believes cash flows from operations, available cash balances and the Firm's ability to generate cash through short- and long-term borrowings are sufficient to fund the Firm's operating liquidity needs.

For the year ended December 31, 2012, net cash provided by operating activities was \$25.1 billion. This resulted from a decrease in securities borrowed reflecting a shift in the deployment of excess cash to resale agreements, as well as lower client activity in CIB, and lower trading assets - derivative receivables, primarily related to the decline in the U.S. dollar and tightening of credit spreads. Partially offsetting these cash inflows was a decrease in accounts payable and other liabilities predominantly due to lower CIB client balances, and an increase in trading assets - debt and equity instruments driven by client-driven market-making activity in CIB. Net cash generated from operating activities was higher than net income largely as a result of adjustments for noncash items such as depreciation and amortization, provision for credit losses, and stock-based compensation. Cash used to acquire loans was higher than cash proceeds received from sales and paydowns of such loans originated and purchased with an initial intent to sell, and also reflected a lower level of activity over the prior-year period.

For the year ended December 31, 2011, net cash provided by operating activities was \$95.9 billion. This resulted from a net decrease in trading assets and liabilities - debt and equity instruments, driven by client-driven market-making activity in CIB; an increase in accounts payable and other liabilities predominantly due to higher CIB client balances, and a decrease in accrued interest and accounts receivables, primarily in CIB, driven by a large reduction in customer margin receivables due to changes in client activity. Partially offsetting these cash proceeds was an increase in securities borrowed, predominantly in Corporate due to higher excess cash positions at year-end. Net cash generated from operating activities was higher than net income largely as a result of adjustments for noncash items such as the provision for credit losses, depreciation and amortization, and stock-based compensation. Additionally, cash provided by proceeds from sales and paydowns of

loans originated or purchased with an initial intent to sell was higher than cash used to acquire such loans, and also reflected a higher level of activity over the prior-year period.

For the year ended December 31, 2010, net cash used by operating activities was \$3.8 billion, mainly driven by an increase primarily in trading assets - debt and equity instruments; principally due to improved market activity primarily in equity securities, foreign debt and physical commodities, partially offset by an increase in trading liabilities due to higher levels of positions taken to facilitate customer-driven activity. Net cash was provided by net income and from adjustments for non-cash items such as the provision for credit losses, depreciation and amortization and stock-based compensation. Additionally, proceeds from sales and paydowns of loans originated or purchased with an initial intent to sell were higher than cash used to acquire such loans.

## Cash flows from investing activities

The Firm's investing activities predominantly include loans originated to be held for investment, the AFS securities portfolio and other short-term interest-earning assets. For the year ended December 31, 2012, net cash of \$119.8 billion was used in investing activities. This resulted from an increase in securities purchased under resale agreements due to deployment of the Firm's excess cash by Treasury; higher deposits with banks reflecting placements of the Firm's excess cash with various central banks, primarily Federal Reserve Banks; and higher levels of wholesale loans, primarily in CB and AM, driven by higher wholesale activity across most of the Firm's regions and businesses. Partially offsetting these cash outflows were a decline in consumer, excluding credit card, loans predominantly due to mortgage-related paydowns and portfolio run-off, and a decline in credit card loans due to higher repayment rates; and

proceeds from maturities and sales of AFS securities, which were higher than the cash used to acquire new AFS securities.

For the year ended December 31, 2011, net cash of \$170.8 billion was used in investing activities. This resulted from a significant increase in deposits with banks reflecting the placement of funds with various central banks, including Federal Reserve Banks, predominantly resulting from the overall growth in wholesale client deposits; an increase in loans reflecting continued growth in client activity across all of the Firm's wholesale businesses and regions; net purchases of AFS securities, largely due to repositioning of the portfolio in Corporate in response to changes in the market environment; and an increase in securities purchased under resale agreements, predominantly in Corporate due to higher excess cash positions at year-end. Partially offsetting these cash outflows were a decline in consumer, excluding credit card, loan balances due to paydowns and portfolio run-off, and in credit card loans, due to higher repayment rates, run-off of the Washington Mutual portfolio and the Firm's sale of the Kohl's portfolio.

For the year ended December 31, 2010, net cash of \$54.0 billion was provided by investing activities. This resulted from a decrease in deposits with banks largely due to a decline in deposits placed with the Federal Reserve Bank and lower interbank lending as market stress eased since the end of 2009; net proceeds from sales and maturities of AFS securities used in the Firm's interest rate risk management activities in Corporate; and a net decrease in the credit card loan portfolio, driven by the expected runoff of the Washington Mutual portfolio, a decline in lower-yielding promotional credit card balances, continued runoff of loan balances in the consumer, excluding credit card portfolio, primarily related to residential real estate, and repayments and loan sales in the wholesale portfolio, primarily in CIB and CB; the decrease was partially offset by higher originations across the wholesale and consumer businesses. Partially offsetting these cash proceeds was an increase in securities purchased under resale agreements, predominantly due to higher financing volume in CIB; and cash used for business acquisitions, primarily RBS Sempra.

#### Cash flows from financing activities

The Firm's financing activities predominantly include taking customer deposits, and issuing long-term debt as well as preferred and common stock. For the year ended December 31, 2012, net cash provided by financing activities was \$87.7 billion. This was driven by proceeds from long-term borrowings and a higher level of securitized credit cards; an increase in deposits due to growth in both consumer and wholesale deposits (for additional information, see Balance Sheet Analysis on pages 106–108 of this Annual Report); an increase in federal funds purchased and securities loaned or sold under repurchase agreements due to higher secured financings of the Firm's assets; an increase in commercial paper issuance in the wholesale funding markets to meet short-term funding needs, partially offset by a decline in the volume of client deposits and other third-party liability balances related to CIB's liquidity management product; an increase in other borrowed funds due to higher secured and unsecured short-term borrowings to meet short-term funding needs; and proceeds from the issuance of preferred stock. Partially offsetting these cash inflows were redemptions and maturities of long-term borrowings, including TruPS, and securitized credit cards; and payments of cash dividends on common and preferred stock and repurchases of common stock and warrants.

For the year ended December 31, 2011, net cash provided by financing activities was \$107.7 billion. This was largely driven by a significant increase in deposits, predominantly due to an overall growth in wholesale client balances and, to a lesser extent, consumer deposit balances. The increase in wholesale client balances, particularly in CIB and CB, was primarily driven by lower returns on other available alternative investments and low interest rates during 2011, and in AM, driven by growth in the number of clients and level of deposits. In addition, there was an increase in commercial paper due to growth in the volume of liability balances in sweep accounts related to CIB's cash management program. Cash was used to reduce securities sold under repurchase agreements, predominantly in CIB, reflecting the lower funding requirements of the Firm based on lower trading inventory levels, and change in the mix of funding sources; for net repayments of long-term borrowings, including a decrease in long-term debt, predominantly due to net redemptions and maturities, as well as a decline in long-term beneficial interests issued by consolidated VIEs due to maturities of Firm-sponsored credit card securitization transactions; to reduce other borrowed funds, predominantly driven by maturities of short-term secured borrowings, unsecured bank notes and short-term FHLB advances; and for repurchases of common stock and warrants, and payments of cash dividends on common and preferred stock.

In 2010, net cash used in financing activities was \$49.2 billion. This resulted from net repayments of long-term borrowings as new issuances were more than offset by payments primarily reflecting a decline in beneficial interests issued by consolidated VIEs due to maturities related to Firm-sponsored credit card securitization trusts; a decline in deposits associated with wholesale funding activities due to the Firm's lower funding needs; lower deposit levels in CIB, offset partially by net inflows from existing customers and new business in AM, CB and CCB; a decline in commercial paper and other borrowed funds due to lower funding requirements; payments of cash dividends; and repurchases of common stock. Cash was generated as a result of an increase in securities sold under repurchase agreements largely as a result of an increase in activity levels in CIB partially offset by a decrease in Corporate reflecting repositioning activities.



## Management's discussion and analysis

**CREDIT RISK MANAGEMENT**

Credit risk is the risk of loss from obligor or counterparty default. The Firm provides credit to a variety of customers, ranging from large corporate and institutional clients to individual consumers and small businesses. In its consumer businesses, the Firm is exposed to credit risk through its real estate, credit card, auto, business banking and student lending businesses, with a primary focus of serving the prime segment of the consumer market. Originated mortgage loans are retained in the mortgage portfolio, or securitized or sold to U.S. government agencies and U.S. government-sponsored enterprises; other types of consumer loans are typically retained on balance sheet. In its wholesale businesses, the Firm is exposed to credit risk through its underwriting, lending and derivatives activities with and for clients and counterparties, as well as through its operating services activities, such as cash management and clearing activities. Loans originated or acquired by the Firm's wholesale businesses are generally retained on the balance sheet. The Firm's syndicated loan business, distributes a significant percentage of originations into the market and is an important component of portfolio management.

**Credit risk organization**

Credit risk management is overseen by the Chief Risk Officer and implemented within the lines of business. The Firm's credit risk management governance consists of the following functions:

- Establishing a comprehensive credit risk policy framework
- Monitoring and managing credit risk across all portfolio segments, including transaction and line approval
- Assigning and managing credit authorities in connection with the approval of all credit exposure
- Managing criticized exposures and delinquent loans
- Determining the allowance for credit losses and ensuring appropriate credit risk-based capital management

**Risk identification and measurement**

The Firm is exposed to credit risk through its lending, capital markets activities and operating services businesses. Credit Risk Management works in partnership with the business segments in identifying and aggregating exposures across all lines of business. To measure credit risk, the Firm employs several methodologies for estimating the likelihood of obligor or counterparty default. Methodologies for measuring credit risk vary depending on several factors, including type of asset (e.g., consumer versus wholesale), risk measurement parameters (e.g., delinquency status and borrower's credit score versus wholesale risk-rating) and risk management and collection processes (e.g., retail collection center versus centrally managed workout groups). Credit risk measurement is based on the amount of exposure should the obligor or the counterparty default, the

probability of default and the loss severity given a default event.

Based on these factors and related market-based inputs, the Firm estimates probable and unexpected credit losses for the consumer and wholesale portfolios. Probable credit losses inherent in the Firm's loan portfolio and related commitments are reflected in the allowance for credit losses. These losses are estimated using statistical analyses and other factors as described in Note 15 on pages 276–279 of this Annual Report. However, probable losses are not the sole indicators of risk. Unexpected losses are reflected in the allocation of credit risk capital and represent the potential volatility of actual losses relative to the amount of probable losses inherent in the portfolio. The methodologies used to measure probable and unexpected credit losses depends on the characteristics of the credit exposure, as described below.

**Scored exposure**

The scored portfolio is generally held in CCB and includes residential real estate loans, credit card loans, certain auto and business banking loans, and student loans. For the scored portfolio, probable and unexpected credit losses are based on statistical analysis of credit losses over discrete periods of time. Probable credit losses inherent in the portfolio are estimated using portfolio modeling, credit scoring, and decision-support tools, which consider loan-level factors such as delinquency status, credit scores, collateral values, and other risk factors. Estimated probable and unexpected credit losses also consider uncertainties and other factors, including those related to current macroeconomic and political conditions, the quality of underwriting standards, and other internal and external factors. The factors and analysis are updated on a quarterly basis or more frequently as market conditions dictate.

**Risk-rated exposure**

Risk-rated portfolios are generally held in CIB, CB and AM, but also include certain business banking and auto dealer loans held in CCB that are risk-rated because they have characteristics similar to commercial loans. For the risk-rated portfolio, probable and unexpected credit losses are based on estimates of the probability of default and loss severity given a default. The estimation process begins with risk-ratings that are assigned to each loan facility to differentiate risk within the portfolio. These risk-ratings are reviewed on an ongoing basis by Credit Risk management and revised as needed to reflect the borrower's current financial position, risk profile and related collateral. The probability of default is the likelihood that a loan will default and not be fully repaid by the borrower. The probability of default is estimated for each borrower, and a loss given default is estimated considering the collateral and structural support for each credit facility. The calculations and assumptions are based on management



information systems and methodologies that are under continual review.

#### Stress testing

Stress testing is important in measuring and managing credit risk in the Firm's credit portfolio. The process assesses the potential impact of alternative economic and business scenarios on estimated credit losses for the Firm. Economic scenarios, and the parameters underlying those scenarios, are defined centrally and applied consistently across the businesses. These scenarios are articulated in terms of macroeconomic factors, which may lead to credit migration, changes in delinquency trends and potential losses in the credit portfolio. In addition to the periodic stress testing processes, management also considers additional stresses outside these scenarios, as necessary.

#### Risk monitoring and management

The Firm has developed policies and practices that are designed to preserve the independence and integrity of the approval and decision-making process of extending credit and to ensure credit risks are assessed accurately, approved properly, monitored regularly and managed actively at both the transaction and portfolio levels. The policy framework establishes credit approval authorities, concentration limits, risk-rating methodologies, portfolio review parameters and guidelines for management of distressed exposures. In addition, certain models, assumptions and inputs used in evaluating and monitoring credit risk are independently validated by groups that are separate from the line of businesses.

For consumer credit risk, delinquency and other trends, including any concentrations at the portfolio level, are monitored for potential problems, as certain of these trends can be improved through changes in underwriting policies and portfolio guidelines. Consumer Risk Management evaluates delinquency and other trends against business expectations, current and forecasted economic conditions, and industry benchmarks. Loss mitigation strategies are being employed for all residential real estate portfolios. These strategies include interest rate reductions, term or payment extensions, principal and interest deferral and other actions intended to minimize economic loss and avoid foreclosure. Historical and forecasted trends are incorporated into the modeling of estimated consumer credit losses and are part of the monitoring of the credit risk profile of the portfolio. Under the Firm's model risk policy, new significant risk management models, as well as major changes to such models, are required to be reviewed and approved by the Model Review Group prior to implementation into the operating environment. Internal Audit also periodically tests the internal controls around the modeling process including the integrity of the data utilized. For further discussion of consumer loans, see Note 14 on pages 250–275 of this Annual Report.

Wholesale credit risk is monitored regularly at an aggregate portfolio, industry and individual counterparty basis with established concentration limits that are reviewed and revised, as deemed appropriate by management, typically on an annual basis. Industry and counterparty limits, as measured in terms of exposure and economic credit risk capital, are subject to stress-based loss constraints.

Management of the Firm's wholesale credit risk exposure is accomplished through a number of means including:

- Loan underwriting and credit approval process

- Loan syndications and participations

- Loan sales and securitizations

- Credit derivatives

- Use of master netting agreements

- Collateral and other risk-reduction techniques

In addition to Risk Management, Internal Audit performs periodic exams, as well as continuous review, where appropriate, of the Firm's consumer and wholesale portfolios. For risk-rated portfolios, a credit review group within Internal Audit is responsible for:

- Independently assessing and validating the changing risk grades assigned to exposures; and

- Evaluating the effectiveness of business units' risk-ratings, including the accuracy and consistency of risk grades, the timeliness of risk grade changes and the justification of risk grades in credit memoranda

#### Risk reporting

To enable monitoring of credit risk and effective decision-making, aggregate credit exposure, credit quality forecasts, concentration levels and risk profile changes are reported regularly to senior Credit Risk Management. Detailed

portfolio reporting of industry, customer, product and geographic concentrations occurs monthly, and the appropriateness of the allowance for credit losses is reviewed by senior management at least on a quarterly basis. Through the risk reporting and governance structure, credit risk trends and limit exceptions are provided regularly to, and discussed with, senior management and the Board of Directors. For further discussion of Risk monitoring and control, see page 125 of this Annual Report.

## Management's discussion and analysis

## CREDIT PORTFOLIO

## 2012 Credit Risk Overview

The credit environment in 2012 continued to improve, but concerns persisted around the European financial crisis and the U.S. fiscal situation. Over the course of the year, the Firm continued to actively manage its underperforming and nonaccrual loans and reduce such exposures through repayments, loan sales and workouts. The Firm saw decreased downgrade, default and charge-off activity and improved consumer delinquency trends. The Firm did see a minimal increase in delinquencies in the fourth quarter as a result of Superstorm Sandy but currently does not anticipate losses to be material. At the same time, the Firm increased its overall lending activity driven by the wholesale businesses. The combination of these factors resulted in an improvement in the credit quality of the portfolio compared with 2011 and contributed to the Firm's reduction in the allowance for credit losses. The current year included the effect of regulatory guidance implemented during 2012 which resulted in the Firm reporting an additional \$3.0 billion of nonaccrual loans at December 31, 2012 (see page 146 in this Annual Report for further information). Excluding the impact of the reporting changes noted above, nonperforming loans would have decreased from 2011.

The credit performance of the consumer portfolio across the entire product spectrum has improved, with lower levels of delinquent loans and charge-offs. Weak overall economic conditions continued to have a negative impact on the number of real estate loans charged off, while continued weak housing prices have resulted in an elevated severity of loss recognized on these defaulted loans. The Firm has taken proactive steps to assist homeowners most in need of financial assistance throughout the economic downturn. For further discussion of the consumer credit environment and consumer loans, see Consumer Credit Portfolio on pages 138–149 and Note 14 on pages 250–275 of this Annual Report.

The wholesale credit environment remained favorable throughout 2012. The rise in commercial client activity resulted in an increase in credit exposure across most businesses, regions and products. Underwriting guidelines across all areas of lending continue to remain a key point of focus, consistent with evolving market conditions and the Firm's risk management activities. The wholesale portfolio continues to be actively managed, in part by conducting ongoing, in-depth reviews of credit quality and of industry, product and client concentrations. During the year, wholesale criticized assets, nonperforming assets and charge-offs decreased from the higher levels experienced in 2011, including a reduction in nonaccrual loans by 40%. As a result, the ratio of nonaccrual loans to total loans, the net charge-off rate and the allowance for loan loss coverage ratio all declined. For further discussion of wholesale loans, see Note 14 on pages 250–275 of this Annual Report.

The following table presents JPMorgan Chase's credit portfolio as of December 31, 2012 and 2011. Total credit exposure was \$1.9 trillion at December 31, 2012, an increase of \$51.1 billion from December 31, 2011, primarily reflecting an increase in the wholesale portfolio of \$70.9 billion, partially offset by a decrease in the consumer portfolio of \$19.8 billion. For further information on the changes in the credit portfolio, see Consumer Credit Portfolio on pages 138–149, and Wholesale Credit Portfolio on pages 150–159, of this Annual Report.

In the following table, reported loans include loans retained (i.e., held-for-investment); loans held-for-sale (which are carried at the lower of cost or fair value, with valuation changes recorded in noninterest revenue); and certain loans accounted for at fair value. The Firm also records certain loans accounted for at fair value in trading assets. For further information regarding these loans see Note 3 on pages 196–214 of this Annual Report. For additional information on the Firm's loans and derivative receivables, including the Firm's accounting policies, see Note 14 and Note 6 on pages 250–275 and 218–227, respectively, of this Annual Report.

Total credit portfolio December 31, 2012 (in millions)	Credit exposure		Nonperforming <sup>(b)(c)(d)(e)(f)</sup>	
	2012	2011	2012	2011
Loans retained	\$726,835	\$718,997	\$10,609	\$9,810
Loans held-for-sale	4,406	2,626	18	110
Loans at fair value	2,555	2,097	93	73
Total loans – reported	733,796	723,720	10,720	9,993
Derivative receivables	74,983	92,477	239	297
Receivables from customers and other	23,761	17,561	—	—
Total credit-related assets	832,540	833,758	10,959	10,290
Assets acquired in loan satisfactions				
Real estate owned	NA	NA	738	975
Other	NA	NA	37	50
Total assets acquired in loan satisfactions	NA	NA	775	1,025
Total assets	832,540	833,758	11,734	11,315
Lending-related commitments	1,027,988	975,662	355	865
Total credit portfolio	\$1,860,528	\$1,809,420	\$12,089	\$12,180
Credit Portfolio Management derivatives notional, net <sup>(a)</sup>	\$(27,447)	\$(26,240)	\$(25)	\$(38)
Liquid securities and other cash collateral held against derivatives	(13,658)	(21,807)	NA	NA

Year ended December 31, (in millions, except ratios)	2012	2011	
Net charge-offs <sup>(g)</sup>	\$9,063	\$12,237	
Average retained loans			
Loans – reported	717,035	688,181	
Loans – reported, excluding residential real estate PCI loans	654,454	619,227	
Net charge-off rates <sup>(g)</sup>			
Loans – reported	1.26	% 1.78	%
Loans – reported, excluding PCI	1.38	1.98	

Represents the net notional amount of protection purchased and sold through credit derivatives used to manage both performing and nonperforming wholesale credit exposures; these derivatives do not qualify for hedge accounting under U.S. GAAP. Excludes the synthetic credit portfolio. For additional information, see Credit derivatives on pages 158–159 and Note 6 on pages 218–227 of this Annual Report.

(b)

Nonperforming includes nonaccrual loans, nonperforming derivatives, commitments that are risk rated as nonaccrual, real estate owned and other commercial and personal property.

(c) At December 31, 2012 and 2011, nonperforming assets excluded: (1) mortgage loans insured by U.S. government agencies of \$10.6 billion and \$11.5 billion, respectively, that are 90 or more days past due; (2) real estate owned insured by U.S. government agencies of \$1.6 billion and \$954 million, respectively; and (3) student loans insured by U.S. government agencies under the FFELP of \$525 million and \$551 million, respectively, that are 90 or more days past due. These amounts were excluded from nonaccrual loans as reimbursement of insured amounts is proceeding normally. In addition, the Firm's policy is generally to exempt credit card loans from being placed on nonaccrual status as permitted by regulatory guidance issued by the Federal Financial Institutions Examination Council ("FFIEC").

(d) Excludes PCI loans. Because the Firm is recognizing interest income on each pool of PCI loans, they are all considered to be performing.

At December 31, 2012 and 2011, total nonaccrual loans represented 1.46% and 1.38%, respectively, of total loans.

(e) At December 31, 2012, included \$1.8 billion of Chapter 7 loans and \$1.2 billion of performing junior liens that are subordinate to senior liens that are 90 days or more past due. For more information, see Consumer Credit Portfolio on pages 138–149 of this Annual Report.

(f) Prior to the first quarter of 2012, reported amounts had only included defaulted derivatives; effective in the first quarter of 2012, reported amounts in all periods include both defaulted derivatives as well as derivatives that have been risk rated as nonperforming.

(g) Net charge-offs and net charge-off rates for the year ended December 31, 2012, included \$800 million of charge-offs of Chapter 7 loans. See Consumer Credit Portfolio on pages 138–149 of this Annual Report for further details.

Management's discussion and analysis

CONSUMER CREDIT PORTFOLIO

JPMorgan Chase's consumer portfolio consists primarily of residential real estate loans, credit card loans, auto loans, business banking loans, and student loans. The Firm's primary focus is on serving the prime segment of the consumer credit market. For further information on consumer loans, see Note 14 on pages 250–275 of this Annual Report. A substantial portion of the consumer loans acquired in the Washington Mutual transaction were identified as PCI based on an analysis of high-risk characteristics, including product type, loan-to-value ("LTV") ratios, FICO risk scores and delinquency status. These PCI loans are accounted for on a pool basis, and the pools are considered to be performing. For further information on PCI loans see Note 14 on pages 250–275 of this Annual Report.

The credit performance of the consumer portfolio improved as the economy continued to slowly expand during 2012, resulting in a reduction in estimated credit losses, particularly in the residential real estate and credit card portfolios. However, high unemployment relative to the historical norm and weak housing prices continue to negatively impact the number of residential real estate loans being charged off and the severity of loss recognized on these loans. Early-stage residential real estate delinquencies (30–89 days delinquent), excluding government guaranteed loans, declined during the first half of the year, but increased during the second half of the year primarily due to seasonal impacts and the effect of Superstorm Sandy. Late-stage delinquencies (150+ days delinquent) continued to decline, but remain elevated. The elevated level of the late-stage delinquent loans is due, in part, to loss mitigation activities currently being undertaken and to elongated foreclosure processing timelines. Losses related to these loans continue to be recognized in accordance with the Firm's standard charge-off practices, but some delinquent loans that would otherwise have been foreclosed upon remain in the mortgage and home equity loan portfolios. In addition to these elevated levels of delinquencies, high unemployment and weak housing prices, uncertainties regarding the ultimate success of loan modifications, and the risk attributes of certain loans within the portfolio (e.g., loans with high LTV ratios, junior lien loans that are subordinate to a delinquent or modified senior lien) continue to contribute to uncertainty regarding overall residential real estate portfolio performance and have been considered in estimating the allowance for loan losses.

The following table presents consumer credit-related information held by CCB as well as residential real estate loans reported in the Asset Management and the Corporate/Private Equity segments for the dates indicated. For further information about the Firm's nonaccrual and charge-off accounting policies, see Note 14 on pages 250–275 of this Annual Report.

## Consumer credit portfolio

As of or for the year ended December 31, (in millions, except ratios)	Credit exposure		Nonaccrual loans <sup>(f)(g)(h)</sup>		Net charge-offs <sup>(i)</sup>		Average annual net charge-off rate <sup>(i)(j)</sup>	
	2012	2011	2012	2011	2012	2011	2012	2011
Consumer, excluding credit card								
Loans, excluding PCI loans and loans held-for-sale								
Home equity – senior lien	\$19,385	\$21,765	\$931	\$495	\$279	\$284	1.33	% 1.20 %
Home equity – junior lien	48,000	56,035	2,277	792	2,106	2,188	4.07	3.69
Prime mortgage, including option ARMs	76,256	76,196	3,445	3,462	487	708	0.64	0.95
Subprime mortgage	8,255	9,664	1,807	1,781	486	626	5.43	5.98
Auto <sup>(a)</sup>	49,913	47,426	163	118	188	152	0.39	0.32
Business banking	18,883	17,652	481	694	411	494	2.27	2.89
Student and other	12,191	14,143	70	69	340	420	2.58	2.85
Total loans, excluding PCI loans and loans held-for-sale	232,883	242,881	9,174	7,411	4,297	4,872	1.81	1.97
Loans – PCI <sup>(b)</sup>								
Home equity	20,971	22,697	NA	NA	NA	NA	NA	NA
Prime mortgage	13,674	15,180	NA	NA	NA	NA	NA	NA
Subprime mortgage	4,626	4,976	NA	NA	NA	NA	NA	NA
Option ARMs	20,466	22,693	NA	NA	NA	NA	NA	NA
Total loans – PCI	59,737	65,546	NA	NA	NA	NA	NA	NA
Total loans – retained	292,620	308,427	9,174	7,411	4,297	4,872	1.43	1.54
Loans held-for-sale	—	—	—	—	—	—	—	—
Total consumer, excluding credit card loans	292,620	308,427	9,174	7,411	4,297	4,872	1.43	1.54
Lending-related commitments								
Home equity – senior lien <sup>(c)</sup>	15,180	16,542						
Home equity – junior lien <sup>(c)</sup>	21,796	26,408						
Prime mortgage	4,107	1,500						
Subprime mortgage	—	—						
Auto	7,185	6,694						
Business banking	11,092	10,299						
Student and other	796	864						
Total lending-related commitments	60,156	62,307						
Receivables from customers <sup>(d)</sup>	113	100						
Total consumer exposure, excluding credit card	352,889	370,834						
Credit Card								
Loans retained <sup>(e)</sup>	127,993	132,175	1	1	4,944	6,925	3.95	5.44
Loans held-for-sale	—	102	—	—	—	—	—	—
Total credit card loans	127,993	132,277	1	1	4,944	6,925	3.95	5.44
Lending-related commitments <sup>(c)</sup>	533,018	530,616						

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Total credit card exposure	661,011	662,893							
Total consumer credit portfolio	\$1,013,900	\$1,033,727	\$9,175	\$7,412	\$9,241	\$11,797	2.17	%2.66	%
Memo: Total consumer credit portfolio, excluding PCI	\$954,163	\$968,181	\$9,175	\$7,412	\$9,241	\$11,797	2.55	%3.15	%

(a) At December 31, 2012 and 2011, excluded operating lease-related assets of \$4.7 billion and \$4.4 billion, respectively.

(b) Charge-offs are not recorded on PCI loans until actual losses exceed estimated losses that were recorded as purchase accounting adjustments at the time of acquisition. To date, no charge-offs have been recorded for these loans.

(c) Credit card and home equity lending-related commitments represent the total available lines of credit for these products. The Firm has not experienced, and does not anticipate, that all available lines of credit would be used at the same time. For credit card and home equity commitments (if certain conditions are met), the Firm can reduce or cancel these lines of credit by providing the borrower notice or, in some cases, without notice as permitted by law.

(d) Receivables from customers primarily represent margin loans to retail brokerage customers, which are included in accrued interest and accounts receivable on the Consolidated Balance Sheets.

(e) Includes accrued interest and fees net of an allowance for the uncollectible portion of accrued interest and fee income.

(f) At December 31, 2012 and 2011, nonaccrual loans excluded: (1) mortgage loans insured by U.S. government agencies of \$10.6 billion and \$11.5 billion, respectively, that are 90 or more days past due; and (2) student loans insured by U.S. government agencies under the FFELP of \$525 million and \$551 million, respectively, that are 90 or more days past due. These amounts were excluded from nonaccrual loans as reimbursement of insured amounts is proceeding normally. In addition, the Firm's policy is generally to exempt credit card loans from being placed on nonaccrual status as permitted by regulatory guidance.



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(g) Excludes PCI loans. Because the Firm is recognizing interest income on each pool of PCI loans, they are all considered to be performing.

(h) At December 31, 2012, included \$1.8 billion of Chapter 7 loans as well as \$1.2 billion of performing junior liens that are subordinate to senior liens that are 90 days or more past due. See Consumer Credit Portfolio on pages 138–149 of this Annual Report for further details.

(i) Charge-offs and net charge-off rates for the year ended December 31, 2012, included net charge-offs of Chapter 7 loans of \$91 million for senior lien home equity, \$539 million for junior lien home equity, \$47 million for prime mortgage, including option ARMs, \$70 million for subprime mortgage and \$53 million for auto loans. Net charge-off rates for the for the year ended December 31, 2012, excluding these net charge-offs would have been 0.90%, 3.03%, 0.58%, 4.65% and 0.28% for the senior lien home equity, junior lien home equity, prime mortgage, including option ARMs, subprime mortgages and auto loans, respectively. See Consumer Credit Portfolio on pages 138–149 of this Annual Report for further details.

(j) Average consumer loans held-for-sale were \$433 million and \$924 million, respectively, for the years ended December 31, 2012 and 2011. These amounts were excluded when calculating net charge-off rates.

Consumer, excluding credit card

At December 31, 2012, the Firm reported, in accordance with regulatory guidance, \$1.7 billion of residential real estate and auto loans that have been discharged under Chapter 7 bankruptcy and not reaffirmed by the borrower ("Chapter 7 loans") as collateral-dependent nonaccrual troubled debt restructurings ("TDRs"), regardless of their delinquency status. Pursuant to that guidance, these Chapter 7 loans were charged off to the net realizable value of the collateral, resulting in \$800 million of charge-offs for the year ended December 31, 2012. The Firm expects to recover a significant amount of these losses over time as principal payments are received. Prior to September 30, 2012, the Firm's policy was to charge down to net realizable value loans to borrowers who had filed for bankruptcy when such loans became 60 days past due, and report such loans as nonaccrual at that time. However, the Firm did not previously report loans discharged under Chapter 7 bankruptcy as TDRs unless otherwise modified under one of the Firm's loss mitigation programs. Prior periods have not been restated for this policy change.

Based upon regulatory guidance, the Firm also began reporting performing junior liens that are subordinate to senior liens that are 90 days or more past due as nonaccrual loans in the first quarter of 2012. The prior year was also not restated for this policy change. The classification of certain of these higher-risk junior lien loans as nonaccrual did not have an impact on the allowance for loan losses as the Firm had previously considered the risk characteristics of this portfolio in estimating its allowance for loan losses. This regulatory policy change had a minimal impact on the Firm's net interest income during the year ended December 31, 2012, because predominantly all of the reclassified junior lien loans are currently making payments, and it is the Firm's policy to recognize these cash interest payments received as interest income.

For more information regarding the impact of these changes to nonaccrual loans and net charge-offs, see the Nonaccrual loans section on page 146 of this Annual Report and the Consumer Credit Portfolio table on page 139 of this Annual Report.

Portfolio analysis

Consumer loan balances declined during the year ended December 31, 2012, due to paydowns and charge-offs. Credit performance has improved across most portfolios but residential real estate charge-offs and delinquent loans remain above normal levels.

The following discussion relates to the specific loan and lending-related categories. PCI loans are generally excluded from individual loan product discussions and are addressed separately below. For further information about the Firm's consumer portfolio, including information about delinquencies, loan modifications and other credit quality indicators, see Note 14 on pages 250–275 of this Annual Report.

Home equity: Home equity loans at December 31, 2012, were \$67.4 billion, compared with \$77.8 billion at December 31, 2011. The decrease in this portfolio primarily reflected loan paydowns and charge-offs. Early-stage delinquencies showed improvement from December 31, 2011, for both senior and junior lien home equity loans, while

net charge-offs for the year ended December 31, 2012, which include Chapter 7 loan charge-offs, decreased from the prior year. Senior lien and junior lien nonaccrual loans increased \$890 million in 2012 due to the inclusion of Chapter 7 loans. Junior lien nonaccrual loans also increased from December 31, 2011, due to the addition of \$1.2 billion of performing junior liens that are subordinate to senior liens that are 90 days or more past due based upon regulatory guidance issued during the first quarter of 2012.

Approximately 20% of the Firm's home equity portfolio consists of home equity loans ("HELOANs") and the remainder consists of home equity lines of credit ("HELOCs"). HELOANs are generally fixed-rate, closed-end, amortizing loans, with terms ranging from 3–30 years. Approximately half of the HELOANs are senior liens and the remainder are junior liens. In general, HELOCs originated by the Firm are revolving loans for a 10-year period, after which time the HELOC recasts into a loan with a 20-year amortization period. At the time of origination, the borrower typically selects one of two minimum payment options that will generally remain in effect during the revolving period: a monthly payment of 1% of the outstanding balance, or interest-only payments based on a variable index (typically Prime). HELOCs originated by Washington Mutual were generally revolving loans for a 10-year period, after which time the HELOC converts to an interest-only loan with a balloon payment at the end of the loan's term. Predominantly all HELOCs in the PCI portfolio beyond the revolving period have been modified into fixed-rate amortizing loans. The Firm manages the risk of HELOCs during their revolving period by closing or reducing the undrawn line to the extent permitted by law when borrowers are experiencing financial

difficulty or when the collateral does not support the loan amount. The majority of the HELOCs contain terms that do not require a fully-amortizing payment until 2015 or later. Certain factors, such as future developments in both unemployment and home prices, could have a significant impact on the performance of these loans. The Firm will continue to evaluate both the near-term and longer-term repricing and recast risks inherent in its HELOC portfolio to ensure that changes in the Firm's estimate of incurred losses are appropriately considered in the allowance for credit losses and the Firm's account management practices are appropriate given the portfolio's risk profile.

At December 31, 2012, the Firm estimated that its home equity portfolio contained approximately \$3.1 billion of current junior lien loans where the borrower has a first mortgage loan that is either delinquent or has been modified ("high-risk seconds"), compared with \$3.7 billion at December 31, 2011. Such loans are considered to pose a higher risk of default than that of junior lien loans for which the senior lien is neither delinquent nor modified. The Firm estimates the balance of its total exposure to high-risk seconds on a quarterly basis using internal data, loan level credit bureau data, which typically provides the delinquency status of the senior lien, as well as information from a database maintained by one of the bank regulatory agencies. The estimated balance of these high-risk seconds may vary from quarter to quarter for reasons such as the movement of related senior liens into and out of the 30+ day delinquency bucket.

Current high risk junior liens (in billions)	December 31, 2012	
Junior liens subordinate to:		
Modified current senior lien	\$ 1.1	
Senior lien 30 – 89 days delinquent	0.9	
Senior lien 90 days or more delinquent	1.1	(a)
Total current high risk junior liens	\$3.1	

Junior liens subordinate to senior liens that are 90 days or more past due are classified as nonaccrual loans.

(a) Excludes approximately \$100 million of junior liens that are performing but not current, which were placed on nonaccrual in accordance with the regulatory guidance.

Of the estimated \$3.1 billion of high-risk junior liens at December 31, 2012, the Firm owns approximately 5% and services approximately 30% of the related senior lien loans to the same borrowers. The performance of the Firm's junior lien loans is generally consistent regardless of whether the Firm owns, services or does not own or service the senior lien. The increased probability of default associated with these higher-risk junior lien loans was considered in estimating the allowance for loan losses.

Mortgage: Mortgage loans at December 31, 2012, including prime, subprime and loans held-for-sale, were \$84.5 billion, compared with \$85.9 billion at December 31, 2011. Balances declined due to paydowns and the charge-off or liquidation of delinquent loans, partially offset by new prime mortgage originations. Net charge-offs decreased

from the prior year as a result of improvement in delinquencies, but remained elevated.

Prime mortgages, including option adjustable-rate mortgages ("ARMs"), were \$76.3 billion at December 31, 2012, compared with \$76.2 billion at December 31, 2011. These loans were largely unchanged as increases related to prime mortgage originations and government insured loans that the Firm repurchased were largely offset by charge-off or liquidation of delinquent loans and paydowns of option ARM loans. Excluding loans insured by U.S. government agencies, both early-stage and late-stage delinquencies showed improvement during the year ended December 31, 2012, but early-stage delinquent loans increased during the second half of the year due primarily to seasonal factors and the impact of Superstorm Sandy. Nonaccrual loans decreased from the prior year (notwithstanding the inclusion of Chapter 7 loans), but remained elevated as a result of ongoing foreclosure processing delays. Net charge-offs declined year-over-year but remained elevated.

Option ARM loans, which are included in the prime mortgage portfolio, were \$6.5 billion and \$7.4 billion and represented 9% and 10% of the prime mortgage portfolio at December 31, 2012 and 2011, respectively. The decrease in option ARM loans resulted from portfolio run-off. As of December 31, 2012, approximately 6% of option ARM borrowers were delinquent, 2% were making interest-only or negatively amortizing payments, and 92% were making amortizing payments (such payments are not necessarily fully amortizing). Approximately 84% of borrowers within

the portfolio are subject to risk of payment shock due to future payment recast, as only a limited number of these loans have been modified. The cumulative amount of unpaid interest added to the unpaid principal balance due to negative amortization of option ARMs was not material at either December 31, 2012, or 2011. The Firm estimates the following balances of option ARM loans will undergo a payment recast that results in a payment increase: \$523 million in 2013, \$709 million in 2014 and \$724 million in 2015. Default rates generally increase when payment recast results in a payment increase. However, as the Firm's option ARM loans, other than those held in the PCI portfolio, are primarily loans with lower LTV ratios and higher borrower FICO scores, it is possible that many of these borrowers will be able to refinance into a lower rate product, which would reduce this payment recast risk. Accordingly, the Firm expects substantially lower losses on this portfolio when compared with the PCI option ARM portfolio. To date, losses realized on option ARM loans that have undergone payment recast have been immaterial and consistent with the Firm's expectations. The option ARM portfolio was acquired by the Firm as part of the Washington Mutual transaction.

Subprime mortgages at December 31, 2012, were \$8.3 billion, compared with \$9.7 billion at December 31, 2011. The decrease was due to portfolio run-off and the charge-off or liquidation of delinquent loans. Both early-stage and late-stage delinquencies have improved from December 31,

## Management's discussion and analysis

2011, but remain at elevated levels. Early-stage delinquencies increased during the second half of the year due primarily to seasonal factors and the impact of Superstorm Sandy. Nonaccrual loans increased due to the inclusion of Chapter 7 loans, while net charge-offs declined.

**Auto:** Auto loans at December 31, 2012, were \$49.9 billion, compared with \$47.4 billion at December 31, 2011. Loan balances increased due to new originations, partially offset by paydowns and payoffs. Delinquent loans increased compared with December 31, 2011; nonaccrual loans increased due to the inclusion of Chapter 7 loans. Net charge-offs also increased for the year ended December 31, 2012, compared with the prior year as a result of charge-offs of the Chapter 7 loans. Excluding the net charge-offs of the Chapter 7 loans, net charge-offs remained low as a result of favorable trends in both loss frequency and loss severity, mainly due to enhanced underwriting standards and a strong used car market. The auto loan portfolio reflected a high concentration of prime-quality credits.

**Business banking:** Business banking loans at December 31, 2012, were \$18.9 billion, compared with \$17.7 billion at December 31, 2011. The increase was due to growth in new loan origination volumes. These loans primarily include loans that are collateralized, often with personal loan guarantees, and may also include Small Business Administration guarantees. Delinquent loans and nonaccrual loans showed improvement from December 31, 2011. Net charge-offs declined for the year ended December 31, 2012, compared with the same period in the prior year.

**Student and other:** Student and other loans at December 31, 2012, were \$12.2 billion, compared with \$14.1 billion at December 31, 2011. The decrease was primarily due to paydowns and charge-offs of student loans. Other loans primarily include other secured and unsecured consumer loans. Nonaccrual loans were flat compared with December 31, 2011 while charge-offs decreased for the year ended December 31, 2012, compared with the prior year.

**Purchased credit-impaired loans:** PCI loans at December 31, 2012, were \$59.7 billion, compared with \$65.5 billion at December 31, 2011. This portfolio represents loans acquired in the Washington Mutual transaction, which were recorded at fair value at the time of acquisition.

During the year ended December 31, 2012, no additional impairment or reserve release was recognized in connection with the Firm's review of the PCI portfolios' expected cash flows. At both December 31, 2012 and 2011, the allowance for loan losses for the home equity, prime mortgage, option ARM and subprime mortgage PCI portfolios was \$1.9 billion, \$1.9 billion, \$1.5 billion and \$380 million, respectively.

As of December 31, 2012, approximately 27% of the option ARM PCI loans were delinquent and 48% had been modified into fixed-rate, fully amortizing loans. Substantially all of the remaining loans are making amortizing payments, although such payments are not necessarily fully amortizing; in addition, substantially all of these loans are subject to the risk of payment shock due to future payment recast. Default rates generally increase on option ARM loans when payment recast results in a payment increase. The expected increase in default rates is considered in the Firm's quarterly estimates of expected cash flows for the PCI portfolio. The cumulative amount of unpaid interest added to the unpaid principal balance of the option ARM PCI pool was \$879 million and \$1.1 billion at December 31, 2012, and December 31, 2011, respectively. The Firm estimates the following balances of option ARM PCI loans will undergo a payment recast that results in a payment increase: \$283 million in 2013, \$449 million in 2014 and \$778 million in 2015.

The following table provides a summary of lifetime principal loss estimates included in both the nonaccretable difference and the allowance for loan losses. Lifetime principal loss estimates were relatively unchanged from December 31, 2011, to December 31, 2012. Principal charge-offs will not be recorded on these pools until the nonaccretable difference has been fully depleted.

## Summary of lifetime principal loss estimates

December 31, (in billions)	Lifetime loss estimates <sup>(a)</sup>		LTD liquidation losses <sup>(b)</sup>	
	2012	2011	2012	2011
Home equity	\$14.9	\$14.9	\$11.5	\$10.4
Prime mortgage	4.2	4.6	2.9	2.3
Subprime mortgage	3.6	3.8	2.2	1.7
Option ARMs	11.3	11.5	8.0	6.6
Total	\$34.0	\$34.8	\$24.6	\$21.0

- Includes the original nonaccretable difference established in purchase accounting of \$30.5 billion for principal losses only plus additional principal losses recognized subsequent to acquisition through the provision and allowance for loan losses. The remaining nonaccretable difference for principal losses only was \$5.8 billion and \$9.4 billion at December 31, 2012 and 2011, respectively.
- (a)
- (b) Life-to-date (“LTD”) liquidation losses represent realization of loss upon loan resolution.

Geographic composition of residential real estate loans

At both December 31, 2012 and 2011, California had the greatest concentration of residential real estate loans with 24% of the total retained residential real estate loan portfolio, excluding mortgage loans insured by U.S. government agencies and PCI loans. Of the total retained residential real estate loan portfolio, excluding mortgage loans insured by U.S. government agencies and PCI loans, \$74.1 billion, or 54%, were concentrated in California, New York, Arizona, Florida and Michigan at December 31, 2012, compared with \$79.5 billion, or 54%, at December 31, 2011. The unpaid principal balance of PCI loans concentrated in these five states represented 72% of total PCI loans at both December 31, 2012 and 2011.

Current estimated LTVs of residential real estate loans

The current estimated average LTV ratio for residential real estate loans retained, excluding mortgage loans insured by U.S. government agencies and PCI loans, was 81% at December 31, 2012, compared with 83% at December 31, 2011. Excluding mortgage loans insured by U.S. government agencies and PCI loans, 20% of the retained portfolio had a current estimated LTV ratio greater than 100%, and 8% of the retained portfolio had a current estimated LTV ratio greater than 125% at December 31, 2012, compared with 24% and 10%, respectively, at December 31, 2011. The decline in home prices since 2007 has had a significant impact on the collateral values underlying the Firm's residential real estate loan portfolio. In general, the delinquency rate for loans with high LTV ratios is greater than the delinquency rate for loans in which the borrower has equity in the collateral. While a large portion of the loans with current estimated LTV ratios greater than 100% continue to pay and are current, the continued willingness and ability of these borrowers to pay remains a risk.

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The following table for PCI loans presents the current estimated LTV ratios, as well as the ratios of the carrying value of the underlying loans to the current estimated collateral value. Because such loans were initially measured at fair value, the ratios of the carrying value to the current estimated collateral value will be lower than the current estimated LTV ratios, which are based on the unpaid principal balances. The estimated collateral values used to calculate these ratios do not represent actual appraised loan-level collateral values; as such, the resulting ratios are necessarily imprecise and should therefore be viewed as estimates.

## LTV ratios and ratios of carrying values to current estimated collateral values – PCI loans

December 31, (in millions, except ratios)	2012				2011			
	Unpaid principal balance	Current estimated LTV ratio <sup>(a)</sup>	Net carrying value <sup>(c)</sup>	Ratio of net carrying value to current estimated collateral value <sup>(c)</sup>	Unpaid principal balance	Current estimated LTV ratio <sup>(a)</sup>	Net carrying value <sup>(c)</sup>	Ratio of net carrying value to current estimated collateral value <sup>(c)</sup>
Home equity	\$22,343	111 % <sup>(b)</sup>	\$19,063	95 %	\$25,064	117 % <sup>(b)</sup>	\$20,789	97 %
Prime mortgage	13,884	104	11,745	88	16,060	110	13,251	91
Subprime mortgage	6,326	107	4,246	72	7,229	115	4,596	73
Option ARMs	22,591	101	18,972	85	26,139	109	21,199	89

Represents the aggregate unpaid principal balance of loans divided by the estimated current property value. Current (a) property values are estimated at least quarterly based on home valuation models that utilize nationally recognized home price index valuation estimates; such models incorporate actual data to the extent available and forecasted data where actual data is not available.

Represents current estimated combined LTV for junior home equity liens, which considers all available lien (b) positions related to the property. All other products are presented without consideration of subordinate liens on the property.

Net carrying value includes the effect of fair value adjustments that were applied to the consumer PCI portfolio at the date of acquisition and is also net of the allowance for loan losses of \$1.9 billion for home equity, \$1.9 billion (c) for prime mortgage, \$1.5 billion for option ARMs, and \$380 million for subprime mortgage at both December 31, 2012 and 2011.

The current estimated average LTV ratios were 110% and 125% for California and Florida PCI loans, respectively, at December 31, 2012, compared with 117% and 140%, respectively, at December 31, 2011. Pressure on housing prices in California and Florida have contributed negatively to both the current estimated average LTV ratio and the ratio of net carrying value to current estimated collateral value for loans in the PCI portfolio. Of the PCI portfolio, 55% had a current estimated LTV ratio greater than 100%, and 24% had a current LTV ratio of greater than 125% at December 31, 2012, compared with 62% and 31%, respectively, at December 31, 2011.

While the current estimated collateral value is greater than the net carrying value of PCI loans, the ultimate performance of this portfolio is highly dependent on borrowers' behavior and ongoing ability and willingness to continue to make payments on homes with negative equity, as well as on the cost of alternative housing. For further information on the geographic composition and current estimated LTVs of residential real estate – non-PCI and PCI loans, see Note 14 on pages 250–275 of this Annual Report.

## Loan modification activities – residential real estate loans

For both the Firm's on-balance sheet loans and loans serviced for others, more than 1.4 million mortgage modifications have been offered to borrowers and approximately 622,000 have been approved since the beginning of 2009. Of these, approximately 610,000 have achieved permanent modification as of December 31, 2012. Of the remaining modifications offered, 16% are in a trial period or still being reviewed for a modification, while 84% have dropped out of the modification program or otherwise were deemed not eligible for final modification.



The Firm is participating in the U.S. Treasury's Making Home Affordable ("MHA") programs and is continuing to offer its other loss-mitigation programs to financially distressed borrowers who do not qualify for the U.S. Treasury's programs. The MHA programs include the Home Affordable Modification Program ("HAMP") and the Second Lien Modification Program ("2MP"). The Firm's other loss-mitigation programs for troubled borrowers who do not qualify for HAMP include the traditional modification programs offered by the GSEs and other governmental agencies, as well as the Firm's proprietary modification programs, which include concessions similar to those offered under HAMP and 2MP but with expanded eligibility criteria. In addition, the Firm has offered specific targeted modification programs to higher risk borrowers, many of whom were current on their mortgages prior to modification. For further information about how loans are modified, see Note 14, Loan modifications, on pages 260–262 of this Annual Report. Loan modifications under HAMP and under one of the Firm's proprietary modification programs, which are largely modeled after HAMP, require at least three payments to be made under the new terms during a trial modification period, and must be successfully re-underwritten with income verification before the loan can be permanently modified. In the case of specific targeted modification programs, re-underwriting the loan or a trial modification period is generally not required, unless the targeted loan is delinquent at the time of modification. When the Firm modifies home equity lines of credit, future lending commitments related to the modified loans are canceled as part of the terms of the modification.

The primary indicator used by management to monitor the success of the modification programs is the rate at which the modified loans redefault. Modification redefault rates are affected by a number of factors, including the type of loan modified, the borrower's overall ability and willingness to repay the modified loan and macroeconomic factors. Reduction in payment size for a borrower has shown to be the most significant driver in improving redefault rates. The performance of modified loans generally differs by product type and also on whether the underlying loan is in the PCI portfolio, due both to differences in credit quality and in the types of modifications provided. Performance metrics for modifications to the residential real estate portfolio, excluding PCI loans, that have been seasoned more than six months show weighted average redefault rates of 25% for senior lien home equity, 20% for junior lien home equity, 14% for prime mortgages including option ARMs, and 24% for subprime mortgages. The cumulative performance metrics for modifications to the PCI residential real estate portfolio seasoned more than six months show weighted average redefault rates of 22% for home equity, 16% for prime mortgages, 13% for option ARMs and 28% for subprime mortgages. The favorable performance of the option ARM modifications is the result of a targeted proactive program which fixes the borrower's payment at the current level. The cumulative redefault rates reflect the performance of modifications completed under both HAMP and the Firm's proprietary modification programs from October 1, 2009, through December 31, 2012.

The following table presents information as of December 31, 2012 and 2011, relating to modified on-balance sheet residential real estate loans for which concessions have been granted to borrowers experiencing financial difficulty. Modifications of PCI loans continue to be accounted for and reported as PCI loans, and the impact of the modification is incorporated into the Firm's quarterly assessment of estimated future cash flows. Modifications of consumer loans other than PCI loans are generally accounted for and reported as TDRs. For further information on TDRs for the years ended December 31, 2012 and 2011, see Note 14 on pages 250–275 of this Annual Report.

## Modified residential real estate loans

December 31, (in millions)	2012		2011	
	On-balance sheet loans	Nonaccrual on-balance sheet loans <sup>(e)</sup>	On-balance sheet loans	Nonaccrual on-balance sheet loans <sup>(e)</sup>
Modified residential real estate loans, excluding PCI loans <sup>(a)(b)(c)</sup>				
Home equity – senior lien	\$1,092	\$607	\$335	\$77
Home equity – junior lien	1,223	599	657	159
Prime mortgage, including option ARMs	7,118	1,888	4,877	922
Subprime mortgage	3,812	1,308	3,219	832
Total modified residential real estate loans, excluding PCI loans	\$13,245	\$4,402	\$9,088	\$1,990
Modified PCI loans <sup>(d)</sup>				
Home equity	\$2,302	NA	\$1,044	NA
Prime mortgage	7,228	NA	5,418	NA
Subprime mortgage	4,430	NA	3,982	NA
Option ARMs	14,031	NA	13,568	NA
Total modified PCI loans	\$27,991	NA	\$24,012	NA

(a) Amounts represent the carrying value of modified residential real estate loans.

(b) At December 31, 2012 and 2011, \$7.5 billion and \$4.3 billion, respectively, of loans permanently modified subsequent to repurchase from Ginnie Mae in accordance with the standards of the appropriate government agency (i.e., FHA, VA, RHS) are not included in the table above. When such loans perform subsequent to modification in accordance with Ginnie Mae guidelines, they are generally sold back into Ginnie Mae loan pools. Modified loans that do not re-perform become subject to foreclosure. For additional information

about sales of loans in securitization transactions with Ginnie Mae, see Note 16 on pages 280–291 of this Annual Report.

At December 31, 2012, included \$1.6 billion of Chapter 7 loans, consisting of \$450 million of senior lien home equity loans, \$448 million of junior lien home equity loans, \$465 million of prime, including option ARMs, and (c) \$245 million of subprime mortgages. Certain of these loans were previously reported as nonaccrual loans (e.g. based upon the delinquency status of the loan). See Consumer Credit Portfolio on pages 138–149 of this Annual Report for further details.

(d) Amounts represent the unpaid principal balance of modified PCI loans.

As of December 31, 2012 and 2011, nonaccrual loans included \$2.9 billion and \$886 million, respectively, of (e) TDRs for which the borrowers were less than 90 days past due. For additional information about loans modified in a TDR that are on nonaccrual status, see Note 14 on pages 250–275 of this Annual Report.

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## Nonperforming assets

The following table presents information as of December 31, 2012 and 2011, about consumer, excluding credit card, nonperforming assets.

Nonperforming assets <sup>(a)</sup>	2012	2011
December 31, (in millions)		
Nonaccrual loans <sup>(b)</sup>		
Home equity – senior lien	\$931	\$495
Home equity – junior lien	2,277	792
Prime mortgage, including option ARMs	3,445	3,462
Subprime mortgage	1,807	1,781
Auto	163	118
Business banking	481	694
Student and other	70	69
Total nonaccrual loans	9,174	7,411
Assets acquired in loan satisfactions		
Real estate owned	647	802
Other	37	44
Total assets acquired in loan satisfactions	684	846
Total nonperforming assets	\$9,858	\$8,257

At December 31, 2012 and 2011, nonperforming assets excluded: (1) mortgage loans insured by U.S. government agencies of \$10.6 billion and \$11.5 billion, respectively, that are 90 or more days past due; (2) real estate owned (a)insured by U.S. government agencies of \$1.6 billion and \$954 million, respectively; and (3) student loans insured by U.S. government agencies under the FFELP of \$525 million and \$551 million, respectively, that are 90 or more days past due. These amounts were excluded as reimbursement of insured amounts is proceeding normally.

Excludes PCI loans that were acquired as part of the Washington Mutual transaction, which are accounted for on a pool basis. Since each pool is accounted for as a single asset with a single composite interest rate and an aggregate (b)expectation of cash flows, the past-due status of the pools, or that of individual loans within the pools, is not meaningful. Because the Firm is recognizing interest income on each pool of loans, they are all considered to be performing.

Nonaccrual loans: Total consumer, excluding credit card, nonaccrual loans were \$9.2 billion at December 31, 2012, compared with \$7.4 billion at December 31, 2011.

Excluding the combined impacts of the Chapter 7 loans and the performing junior lien home equity loans discussed below, total consumer, excluding credit card, nonaccrual loans would have been \$6.2 billion at December 31, 2012, compared with \$7.4 billion at December 31, 2011. In addition to the combined impacts of the Chapter 7 loans and the performing junior lien home equity loans, elongated foreclosure processing timelines continue to result in elevated levels of nonaccrual loans in the residential real estate portfolios.

Nonaccrual loans in the residential real estate portfolio totaled \$8.5 billion at December 31, 2012, of which 42% were greater than 150 days past due, compared with nonaccrual residential real estate loans of \$6.5 billion at December 31, 2011, of which 69% were greater than 150 days past due. In the aggregate, the unpaid principal balance of residential real estate loans greater than 150 days past due was charged down by approximately 52% and 50% to estimated net realizable value of the collateral at December 31, 2012 and 2011, respectively.

At December 31, 2012, consumer, excluding credit card, nonaccrual loans included \$1.8 billion of Chapter 7 loans, consisting of \$450 million of senior lien home equity, \$440 million of junior lien home equity, \$500 million of prime mortgage, including option ARMs, \$357 million of subprime mortgages and \$51 million of auto loans. Because the Chapter 7 loans are accounted for as collateral-dependent loans and reported at the net realizable value of the collateral, these loans did not require an additional allowance for loan losses. Certain of these individual loans had previously been reported as performing TDRs (e.g., those loans that had been previously modified under one of the Firm's loss mitigation programs and that subsequently made at least six payments under the modified payment terms).

At December 31, 2012, nonaccrual loans in the residential real estate portfolio also included \$1.2 billion of performing junior lien home equity loans that are subordinate to senior liens that are 90 days or more past due. For more information on the change in reporting of these junior liens, see the home equity portfolio analysis discussion on pages 140–141 of this Annual Report.

Modified loans have contributed to an elevated level of nonaccrual loans, since the Firm’s policy requires modified loans that are on nonaccrual status to remain on nonaccrual status until payment is reasonably assured and the borrower has made a minimum of six payments under the modified terms. At December 31, 2012 and 2011, modified residential real estate loans of \$4.4 billion and \$2.0 billion, respectively, were classified as nonaccrual loans.

Real estate owned (“REO”): REO assets are managed for prompt sale and disposition at the best possible economic value. REO assets are those individual properties where the Firm receives the property in satisfaction of a debt (e.g., by taking legal title or physical possession). The Firm generally recognizes REO assets at the completion of the foreclosure process or upon execution of a deed in lieu of foreclosure transaction with the borrower. REO assets, excluding those insured by U.S. government agencies, decreased by \$155 million from \$802 million at December 31, 2011, to \$647 million at December 31, 2012.

#### Mortgage servicing-related matters

The financial crisis resulted in unprecedented levels of delinquencies and defaults of 1-4 family residential real estate loans. Such loans required varying degrees of loss mitigation activities. It is the Firm’s goal that foreclosure in these situations be a last resort, and accordingly, the Firm has made, and continues to make, significant efforts to help borrowers stay in their homes. Since the third quarter of 2010, the Firm has prevented two foreclosures for every foreclosure completed; foreclosure-prevention methods include loan modification, short sales and other means.

The Firm has a well-defined foreclosure prevention process when a borrower fails to pay on his or her loan. The Firm attempts to contact the borrower multiple times and in various ways in an effort to pursue home retention or other

options other than foreclosure. In addition, if the Firm is unable to contact a borrower, the Firm completes various reviews of the borrower's facts and circumstances before a foreclosure sale is completed. The delinquency period for the average borrower at the time of foreclosure over the last year has been approximately 25 months.

The high volume of delinquent and defaulted mortgages experienced by the Firm has placed a significant amount of stress on the Firm's servicing operations. The Firm has entered into a global settlement with certain federal and state agencies and Consent Orders with its banking regulators with respect to various mortgage servicing, loss mitigation and foreclosure process-related matters as further discussed below. The GSEs also impose compensatory fees on its mortgage servicers, including the Firm, if such servicers are unable to comply with the foreclosure timetables mandated by the GSEs. The Firm has incurred, and is continuing to incur, compensatory fees, which are reported in default servicing expense. To address its underlying mortgage servicing, loss mitigation and foreclosure process issues, the Firm has made, and is continuing to make, significant changes to its mortgage operations, which will enable it to comply with the Consent Orders and the global settlement and enhance its ability to comply with the foreclosure timetables mandated by the GSEs.

Global settlement with federal and state agencies: On February 9, 2012, the Firm announced that it had agreed to a settlement in principle (the "global settlement") with a number of federal and state government agencies, including the U.S. Department of Justice, the U.S. Department of Housing and Urban Development, the Consumer Financial Protection Bureau and the State Attorneys General, relating to the servicing and origination of mortgages. The global settlement, which became effective on April 5, 2012, required the Firm to, among other things: (i) make cash payments of approximately \$1.1 billion, a portion of which will be set aside for payments to borrowers ("Cash Settlement Payment"); (ii) provide approximately \$500 million of refinancing relief to certain "underwater" borrowers whose loans are owned and serviced by the Firm ("Refi Program"); and (iii) provide approximately \$3.7 billion of additional relief for certain borrowers, including reductions of principal on first and second liens, payments to assist with short sales, deficiency balance waivers on past foreclosures and short sales, and forbearance assistance for unemployed homeowners ("Consumer Relief Program"). The Cash Settlement Payment was made on April 13, 2012. The purpose of the Refi Program was to allow eligible borrowers who were current on their Firm-owned mortgage loans to refinance those loans and take advantage of the current low interest rate environment. Borrowers who were eligible for the Refi Program were those who were unable to refinance their mortgage loans under standard refinancing programs because they had no equity or, in many cases, negative equity in their homes. Initial interest rates on loans

refinanced under the Refi Program were lower than the borrowers' interest rates prior to the refinancings and were capped at the greater of 100 basis points over Freddie Mac's then-current Primary Mortgage Market Survey Rate or 5.25%. Under the Refi Program, the interest rate on each refinanced loan could have been reduced either for the remaining life of the loan or for five years. The Firm reduced the interest rates on loans that it refinanced under the Refi Program for the remaining lives of those loans. In substance, these refinancings were more similar to loan modifications than traditional refinancings. All refinancings required under the Refi Program were completed as of December 31, 2012.

The first and second lien loan modifications provided for in the Consumer Relief Program will typically involve principal reductions for borrowers who have negative equity in their homes and who are experiencing financial difficulty. These loan modifications are primarily expected to be executed under the terms of either MHA (e.g., HAMP, 2MP) or one of the Firm's proprietary modification programs. The Firm began to provide relief to borrowers under the Consumer Relief Program in the first quarter of 2012.

If the Firm does not meet certain targets set forth in the global settlement agreement for providing either refinancings under the Refi Program or other borrower relief under the Consumer Relief Program within certain prescribed time periods, the Firm must instead make additional cash payments. In general, 75% of the targets must be met within two years of the date of the global settlement and 100% must be achieved within three years of that date. The Firm filed its first quarterly report concerning its compliance with the global settlement with the Office of Mortgage Settlement Oversight in November 2012. The report included information regarding the refinancings completed under the Refi Program and relief provided to borrowers under the Consumer Relief Program, as well as credits earned by the Firm

under the global settlement as a result of such actions. The Firm expects to substantially complete its obligations under the Consumer Relief Program in the first half of 2013.

The global settlement also requires the Firm to adhere to certain enhanced mortgage servicing standards. The servicing standards include, among other items, the following enhancements to the Firm's servicing of loans: a pre-foreclosure notice to all borrowers, which will include account information, holder status, and loss mitigation steps taken; enhancements to payment application and collections processes; strengthening procedures for filings in bankruptcy proceedings; deploying specific restrictions on the "dual track" of foreclosure and loss mitigation; standardizing the process for appeal of loss mitigation denials; and implementing certain restrictions on fees, including the waiver of certain fees while a borrower's loss mitigation application is being evaluated. The Firm has made significant progress in implementing the prescribed servicing standards.

Management's discussion and analysis

The global settlement releases the Firm from certain further claims by the participating government entities related to servicing activities, including foreclosures and loss mitigation activities; certain origination activities; and certain bankruptcy-related activities. Not included in the global settlement are any claims arising out of securitization activities, including representations made to investors with respect to mortgage-backed securities; criminal claims; and repurchase demands from the GSEs, among other items.

The Firm has accounted for all refinancings performed under the Refi Program and expects to account for all first and second lien loans modified under the Consumer Relief Program as TDRs. The expected impact of the Consumer Relief Program has been considered in the Firm's allowance for loan losses. For additional information, see Allowance for Credit Losses on pages 159–162 of this Annual Report.

On February 9, 2012, the Firm also entered into agreements with the Federal Reserve and the OCC for the payment of civil money penalties related to conduct that was the subject of consent orders entered into with the banking regulators in April 2011, as discussed further below. The Firm's payment obligations under those agreements will be deemed satisfied by the Firm's payments and provisions of relief under the global settlement.

For further information on the global settlement, see Critical Accounting Estimates Used by the Firm on pages 178–182, Note 2 on pages 195–196 and Note 14 on pages 250–275 of this Annual Report.

Consent Orders: During the second quarter of 2011, the Firm entered into Consent Orders ("Orders") with banking regulators relating to its residential mortgage servicing, foreclosure and loss-mitigation activities. In the Orders, the regulators have mandated significant changes to the Firm's servicing and default business and outlined requirements to implement these changes. The Firm submitted comprehensive action plans to the regulators, which set forth the steps necessary to ensure the Firm's residential mortgage servicing, foreclosure and loss-mitigation activities are conducted in accordance with the requirements of the Orders. The plans were approved and the Firm has implemented a number of corrective actions and made significant progress with respect to the following:

- Established an independent Compliance Committee which meets regularly and monitors progress against the Orders.
- Launched a new Customer Assistance Specialist organization for borrowers to facilitate the single point of contact initiative and ensure effective coordination and communication related to foreclosure, loss-mitigation and loan modification.

- Enhanced its approach to oversight over third-party vendors for foreclosure or other related functions.

- Standardized the processes for maintaining appropriate controls and oversight of the Firm's activities with respect to the Mortgage Electronic Registration system ("MERS")

and compliance with MERSCORP's membership rules, terms and conditions.

- Strengthened its compliance program so as to ensure mortgage-servicing and foreclosure operations, including loss-mitigation and loan modification, comply with all applicable legal requirements.

- Enhanced management information systems for loan modification, loss-mitigation and foreclosure activities.

- Developed a comprehensive assessment of risks in servicing operations including, but not limited to, operational, transaction, legal and reputational risks.

- Made technological enhancements to automate and streamline processes for the Firm's document management, training, skills assessment and payment processing initiatives.

- Deployed an internal validation process to monitor progress under the comprehensive action plans.

In addition, pursuant to the Orders, the Firm is required to enhance oversight of its mortgage servicing activities, including oversight by compliance, management and audit personnel and, accordingly, has made and continues to make changes in its organization structure, control oversight and customer service practices.

Pursuant to the Orders, the Firm had retained an independent consultant to conduct a review of its residential foreclosure actions during the period from January 1, 2009, through December 31, 2010 (including foreclosure actions brought in respect of loans being serviced), and to remediate any errors or deficiencies identified by the independent consultant.

On January 7, 2013, the Firm announced that it and a number of other financial institutions entered into a settlement agreement with the OCC and the Federal Reserve providing for the termination of such Independent Foreclosure Review programs. As a result of this settlement, the independent consultant will no longer be conducting a look-back



review of residential foreclosure actions. The Firm will make a cash payment of \$753 million into a settlement fund for distribution to qualified borrowers. The Firm has also committed an additional \$1.2 billion to foreclosure prevention actions, which will be fulfilled through credits given to the Firm for modifications, short sales and other specified types of borrower relief. Foreclosure prevention actions that earn credit under the Independent Foreclosure Review settlement are in addition to actions taken by the Firm to earn credit under the Consumer Relief Program of the global settlement. The estimated impact of the foreclosure prevention actions required under the Independent Foreclosure Review settlement have been considered in the Firm's allowance for loan losses. The Firm recognized a pretax charge of approximately \$700 million in the fourth quarter of 2012 related to the Independent Foreclosure Review settlement.

### Credit Card

Total credit card loans were \$128.0 billion at December 31, 2012, a decrease of \$4.3 billion from December 31, 2011. The decrease in outstanding loans was primarily due to higher repayment rates.

For the retained credit card portfolio, the 30+ day delinquency rate decreased to 2.10% at December 31, 2012, from 2.81% at December 31, 2011. For the years ended December 31, 2012 and 2011, the net charge-off rates were 3.95% and 5.44% respectively. Charge-offs have improved as a result of lower delinquent loans. The

credit card portfolio continues to reflect a well-seasoned, largely rewards-based portfolio that has good U.S. geographic diversification. The greatest geographic concentration of credit card retained loans is in California, which represented 13% of total retained loans at both December 31, 2012 and 2011. Loan concentration for the top five states of California, New York, Texas, Florida and Illinois consisted of \$52.3 billion in receivables, or 41% of the retained loan portfolio, at December 31, 2012, compared with \$53.6 billion, or 40%, at December 31, 2011.

### Geographic composition of Credit Card loans

#### Modifications of credit card loans

At December 31, 2012 and 2011, the Firm had \$4.8 billion and \$7.2 billion, respectively, of credit card loans outstanding that have been modified in TDRs. These balances included both credit card loans with modified payment terms and credit card loans that reverted back to their pre-modification payment terms because the cardholder did not comply with the modified payment terms. The decrease in modified credit card loans outstanding from December 31, 2011, was attributable to a reduction in new modifications as well as ongoing payments and charge-offs on previously modified credit card loans. In the second quarter of 2012, the Firm revised its policy for recognizing charge-offs on restructured loans that do not comply with their modified payment terms. Commencing June 30, 2012 these loans are now charged-off when they are 120 days past due rather than 180 days past due.

Consistent with the Firm's policy, all credit card loans typically remain on accrual status until charged-off. However, the Firm establishes an allowance, which is offset against loans and charged to interest income, for the estimated uncollectible portion of accrued interest and fee income.

For additional information about loan modification programs to borrowers, see Note 14 on pages 250–275 of this Annual Report.

## Management's discussion and analysis

## WHOLESALE CREDIT PORTFOLIO

As of December 31, 2012, wholesale exposure (CIB, CB and AM) increased by \$70.9 billion from December 31, 2011, primarily driven by increases of \$52.1 billion in lending-related commitments and \$30.2 billion in loans due to increased client activity across most regions and most businesses. The increase in loans was due to growth in CB and AM. These increases were partially offset by a \$17.5 billion decrease in derivative receivables, primarily related to the decline in the U.S. dollar, and tightening of credit spreads; these changes resulted in reductions to interest rate, credit derivative, and foreign exchange balances.

## Wholesale credit portfolio

December 31, (in millions)	Credit exposure		Nonperforming <sup>(c)(d)</sup>	
	2012	2011	2012	2011
Loans retained	\$306,222	\$278,395	\$1,434	\$2,398
Loans held-for-sale	4,406	2,524	18	110
Loans at fair value	2,555	2,097	93	73
Loans – reported	313,183	283,016	1,545	2,581
Derivative receivables	74,983	92,477	239	297
Receivables from customers and other <sup>(a)</sup>	23,648	17,461	—	—
Total wholesale credit-related assets	411,814	392,954	1,784	2,878
Lending-related commitments	434,814	382,739	355	865
Total wholesale credit exposure	\$846,628	\$775,693	\$2,139	\$3,743
Credit Portfolio Management derivatives notional, net <sup>(b)</sup>	\$(27,447	)\$(26,240	) \$(25	)\$(38
Liquid securities and other cash collateral held against derivatives	(13,658	) (21,807	) NA	NA

(a) Receivables from customers and other primarily includes margin loans to prime and retail brokerage customers; these are classified in accrued interest and accounts receivable on the Consolidated Balance Sheets.

(b) Represents the net notional amount of protection purchased and sold through credit derivatives used to manage both performing and nonperforming wholesale credit exposures; these derivatives do not qualify for hedge accounting under U.S. GAAP. Excludes the synthetic credit portfolio. For additional information, see Credit derivatives on pages 158–159, and Note 6 on pages 218–227 of this Annual Report.

(c) Excludes assets acquired in loan satisfactions.

(d) Prior to the first quarter of 2012, reported amounts had only included defaulted derivatives; effective in the first

(d) quarter of 2012, reported amounts in all periods include both defaulted derivatives as well as derivatives that have been risk rated as nonperforming.

The following table presents summaries of the maturity and ratings profiles of the wholesale credit portfolio as of December 31, 2012 and 2011. The ratings scale is based on the Firm's internal risk ratings, which generally correspond to the ratings as defined by S&P and Moody's.

## Wholesale credit exposure – maturity and ratings profile

December 31, 2012 (in millions, except ratios)	Maturity profile <sup>(e)</sup>			Total	Ratings profile			Total % of IG
	Due in 1 year or less	Due after 1 year through 5 years	Due after 5 years		Investment-grade AAA/Aaa to BBB-/Baa3	Noninvestment-grade BB+/Ba1 & below	Total	
Loans retained	\$115,227	\$117,673	\$73,322	\$306,222	\$214,446	\$ 91,776	\$306,222	70 %
Derivative receivables				74,983			74,983	
Less: Liquid securities and other cash collateral held against derivatives				(13,658 )			(13,658 )	
Total derivative receivables, net of all collateral	13,336	25,055	22,934	61,325	50,406	10,919	61,325	82
Lending-related commitments	164,327	261,261	9,226	434,814	347,316	87,498	434,814	80
Subtotal	292,890	403,989	105,482	802,361	612,168	190,193	802,361	76
Loans held-for-sale and loans at fair value <sup>(a)</sup>				6,961			6,961	
Receivables from customers and other				23,648			23,648	
Total exposure – net of liquid securities and other cash collateral held against derivatives				\$832,970			\$832,970	
Credit Portfolio Management derivatives net notional by counterparty ratings profile <sup>(b)(c)</sup>	\$(1,579 )	\$(16,475 )	\$(9,393 )	\$(27,447 )	\$(27,507 )	\$ 60	\$(27,447 )	100 %
Credit Portfolio Management derivatives net notional by reference entity ratings profile <sup>(b)(d)</sup>					\$(24,622 )	\$ (2,825 )	\$(27,447 )	90 %
December 31, 2011 (in millions, except ratios)	Maturity profile <sup>(e)</sup>			Total	Ratings profile			Total % of IG
Due in 1 year or less	Due after 1 year through 5 years	Due after 5 years	Investment-grade AAA/Aaa to BBB-/Baa3		Noninvestment-grade BB+/Ba1 & below	Total		
Loans retained	\$113,222	\$101,959	\$63,214	\$278,395	\$196,998	\$ 81,397	\$278,395	71 %
Derivative receivables				92,477			92,477	
Less: Liquid securities and other cash collateral held against				(21,807 )			(21,807 )	

derivatives								
Total derivative receivables, net of all collateral	8,243	29,910	32,517	70,670	57,637	13,033	70,670	82
Lending-related commitments	139,978	233,396	9,365	382,739	310,107	72,632	382,739	81
Subtotal	261,443	365,265	105,096	731,804	564,742	167,062	731,804	77
Loans held-for-sale and loans at fair value <sup>(a)</sup>				4,621			4,621	
Receivables from customers and other				17,461			17,461	
Total exposure – net of liquid securities and other cash collateral held against derivatives				\$753,886			\$753,886	
Credit Portfolio Management derivatives net notional by counterparty ratings profile <sup>(b)(c)</sup>	\$(2,034 )	\$(16,450 )	\$(7,756 )	\$(26,240 )	\$(26,300 )	\$ 60	\$(26,240 )	100 %
Credit Portfolio Management derivatives net notional by reference entity ratings profile <sup>(b)(d)</sup>					\$(22,159 )	\$ (4,081 )	\$(26,240 )	84 %

(a) Represents loans held-for-sale primarily related to syndicated loans and loans transferred from the retained portfolio, and loans at fair value.

(b) These derivatives do not qualify for hedge accounting under U.S. GAAP. Excludes the synthetic credit portfolio.

The notional amounts are presented on a net basis by each derivative counterparty and the ratings profile shown is

(c) based on the ratings of those counterparties. The counterparties to these positions are predominately investment-grade banks and finance companies.

(d) The notional amounts are presented on a net basis by underlying reference entity and the ratings profile shown is based on the ratings of the reference entity on which protection has been purchased.

The maturity profiles of retained loans and lending-related commitments are based on the remaining contractual (e) maturity. The maturity profiles of derivative receivables are based on the maturity profile of average exposure. For further discussion of average exposure, see Derivative receivables on pages 156–159 of this Annual Report.

#### Wholesale credit exposure – selected industry exposures

The Firm focuses on the management and diversification of its industry exposures, with particular attention paid to industries with actual or potential credit concerns. As of September 30, 2012, the Firm revised its definition of the criticized component of the wholesale portfolio to align with the banking regulators' definition of criticized exposures, which consist of the special mention, substandard and doubtful categories. Prior periods have been reclassified to conform with the current presentation. The reclassification resulted in an increase in the level of reported criticized exposure by \$4.5 billion as of December 31, 2011, which

did not result in material changes to the Firm's underlying risk ratings or the amount of nonaccrual loans. Accordingly, this reclassification did not result in material changes to the Firm's allowance for credit losses or additional provision for credit losses. Furthermore, this change had no effect on reported net interest income with respect to the affected loans. The total criticized component of the portfolio, excluding loans held-for-sale and loans at fair value, decreased by 23% to \$15.6 billion at December 31, 2012, from \$20.3 billion at December 31, 2011, primarily due to repayments.



Management's discussion and analysis

Below are summaries of the top 25 industry exposures as of December 31, 2012 and 2011. For additional information on industry concentrations, see Note 5 on page 217 of this Annual Report.

As of or for the year ended December 31, 2012 (in millions)	Noninvestment-grade <sup>(d)(f)</sup>					Selected metrics			Liquid securities and other cash collateral held against derivative receivables
	Credit exposure <sup>(c)</sup>	Investment-grade	Noncriticized	Criticized performing	Criticized nonperforming	30 days or more past due and accruing loans	Net charge-offs (recoveries)	Credit derivatives <sup>(e)</sup>	
Top 25 industries <sup>(a)</sup>									
Real Estate	\$76,198	\$50,103	\$21,503	\$4,067	\$525	\$391	\$54	\$(41)	\$(507)
Banks & Finance Cos	73,318	55,805	16,928	578	7	20	(34)	(3,524)	(5,983)
Healthcare	48,487	41,146	6,761	569	11	38	9	(238)	(450)
Oil & Gas	42,563	31,258	11,012	270	23	9	—	(155)	(101)
State & Municipal Govt <sup>(b)</sup>	41,821	40,562	1,093	52	114	28	2	(186)	(218)
Consumer Products	32,778	21,428	10,473	868	9	2	(16)	(275)	(12)
Asset Managers	31,474	26,283	4,987	204	—	46	—	—	(2,667)
Utilities	29,533	24,917	4,257	175	184	2	15	(315)	(368)
Retail & Consumer Services	25,597	16,100	8,763	700	34	20	(11)	(37)	(1)
Central Govt	21,223	20,678	484	61	—	—	—	(11,620)	(1,154)
Metals/Mining	20,958	12,912	7,608	406	32	8	(1)	(409)	(124)
Transportation	19,827	15,128	4,353	283	63	5	2	(82)	(1)
Machinery & Equipment Mfg	18,504	10,228	7,827	444	5	—	2	(23)	—
Technology	18,488	12,089	5,683	696	20	—	1	(226)	—
Media	16,007	7,473	7,754	517	263	2	(218)	(93)	—
Insurance	14,446	12,156	2,119	171	—	2	(2)	(143)	(1,654)
Business Services	13,577	7,172	6,132	232	41	9	23	(10)	—
Building Materials/Construction	12,377	5,690	5,892	791	4	8	1	(114)	—
Telecom Services	12,239	7,792	3,244	1,200	3	5	1	(229)	—
Chemicals/Plastics	11,591	7,234	4,172	169	16	18	2	(55)	(74)
Automotive	11,511	6,447	4,963	101	—	—	—	(530)	—
Leisure	7,748	3,160	3,724	551	313	—	(13)	(63)	(24)
Agriculture/Paper Mfg	7,729	5,029	2,657	42	1	5	—	—	—
Aerospace/Defense	6,702	5,518	1,150	33	1	—	—	(141)	—
Securities Firms & Exchanges	5,756	4,096	1,612	46	2	—	—	(171)	(179)
All other	195,567	174,264	20,562	384	357	1,478	5	(8,767)	(141)
Subtotal	\$816,019	\$624,668	\$175,713	\$13,610	\$2,028	\$2,096	\$(178)	\$(27,447)	\$(13,658)
Loans held-for-sale and loans at fair value	6,961								
Receivables from customers and other	23,648								

Total \$ 846,628

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As of or for the year ended December 31, 2011 (in millions)	Noninvestment-grade <sup>(d)(f)</sup>					Selected metrics			Liquid securities and other cash collateral held against derivative receivables
	Credit exposure <sup>(c)</sup>	Investment-grade	Noncriticized	Criticized performing	Criticized nonperforming	30 days or more past due and accruing loans	Net charge-offs (recoveries)	Credit derivatives <sup>(e)</sup>	
Top 25 industries <sup>(a)</sup>									
Real Estate	\$67,594	\$40,921	\$19,947	\$5,732	\$994	\$411	\$256	\$(97)	\$(359)
Banks & Finance Cos	71,440	59,115	11,744	555	26	20	(211)	(3,053)	(9,585)
Healthcare	42,247	35,146	6,816	228	57	166	—	(304)	(320)
Oil & Gas	35,437	24,957	10,178	274	28	3	—	(119)	(88)
State & Municipal Govt <sup>(b)</sup>	41,930	40,565	1,122	113	130	23	—	(185)	(147)
Consumer Products	29,637	19,728	9,040	832	37	3	13	(272)	(50)
Asset Managers	33,465	28,834	4,201	429	1	24	—	—	(4,807)
Utilities	28,650	23,557	4,412	174	507	—	76	(105)	(359)
Retail & Consumer Services	22,891	14,567	7,446	778	100	15	1	(96)	(1)
Central Govt	17,138	16,524	488	126	—	—	—	(9,796)	(813)
Metals/Mining	15,254	8,716	6,339	198	1	6	(19)	(423)	—
Transportation	16,305	12,061	3,930	256	58	6	17	(178)	—
Machinery & Equipment Mfg	16,498	9,014	7,236	238	10	1	(1)	(19)	—
Technology	17,898	12,494	4,985	417	2	—	4	(191)	—
Media	11,909	6,853	3,729	866	461	1	18	(188)	—
Insurance	13,092	9,425	2,852	802	13	—	—	(552)	(454)
Business Services	12,408	7,093	5,012	264	39	17	22	(20)	(2)
Building Materials/Construction	11,770	5,175	5,335	1,256	4	6	(4)	(213)	—
Telecom Services	11,552	8,502	2,493	546	11	2	5	(390)	—
Chemicals/Plastics	11,728	7,867	3,700	146	15	—	—	(95)	(20)
Automotive	9,910	5,699	4,123	88	—	9	(11)	(819)	—
Leisure	5,650	3,051	1,680	530	389	1	1	(81)	(26)
Agriculture/Paper Mfg	7,594	4,888	2,540	166	—	9	—	—	—
Aerospace/Defense	8,560	7,646	845	69	—	7	—	(208)	—
Securities Firms & Exchanges	12,394	10,799	1,571	23	1	10	73	(395)	(3,738)
All other	180,660	161,546	16,785	1,653	676	1,099	200	(8,441)	(1,038)
Subtotal	\$753,611	\$584,743	\$148,549	\$16,759	\$3,560	\$1,839	\$440	\$(26,240)	\$(21,807)
Loans held-for-sale and loans at fair value	4,621								
Receivables from customers and other	17,461								

Total \$775,693

(a) The industry rankings presented in the table as of December 31, 2011, are based on the industry rankings of the corresponding exposures at December 31, 2012, not actual rankings of such exposures at December 31, 2011.

In addition to the credit risk exposure to states and municipal governments (both U.S. and non-U.S.) at December 31, 2012 and 2011, noted above, the Firm held \$18.2 billion and \$16.7 billion, respectively, of trading securities and \$21.7 billion and \$16.5 billion, respectively, of AFS securities issued by U.S. state and municipal governments. For further information, see Note 3 and Note 12 on pages 196–214 and 244–248, respectively, of this Annual Report.

(c) Credit exposure is net of risk participations and excludes the benefit of “Credit Portfolio Management derivatives net notional” held against derivative receivables or loans and “Liquid securities and other cash collateral held against derivative receivables”.

(d) As of December 31, 2012, exposures deemed criticized correspond to special mention, substandard and doubtful categories as defined by bank regulatory agencies. Prior periods have been reclassified to conform with the current presentation.

(e) Represents the net notional amounts of protection purchased and sold through credit derivatives used to manage the credit exposures; these derivatives do not qualify for hedge accounting under U.S. GAAP. The all other category includes purchased credit protection on certain credit indices. Credit Portfolio Management derivatives excludes the synthetic credit portfolio.

(f) Prior to the first quarter of 2012, reported amounts had only included defaulted derivatives; effective in the first quarter of 2012, reported amounts in all periods include both defaulted derivatives as well as derivatives that have been risk rated as nonperforming.

## Management's discussion and analysis

Presented below is a discussion of several industries to which the Firm has significant exposure, as well as industries the Firm continues to monitor because of actual or potential credit concerns. For additional information, refer to the tables on the previous pages.

**Real estate:** Exposure to this industry increased by \$8.6 billion or 13%, in 2012 to \$76.2 billion. The increase was primarily driven by CB. The credit quality of this industry improved as the investment-grade portion of the exposures to this industry increased by 22% from 2011, while the criticized portion declined by 32% from 2011, primarily as a result of repayments and loan sales. The ratio of nonaccrual retained loans to total retained loans decreased to 0.86% at December 31, 2012 from 1.62% at December 31, 2011 in line with the decrease in real estate criticized exposure. For further information on commercial real estate loans, see Note 14 on pages 250–275 of this Annual Report.

**Banks and finance companies:** Exposure to this industry increased by \$1.9 billion or 3%, and criticized exposure decreased by 0.7%, compared with 2011. At December 31, 2012, 76% of the portfolio is rated investment-grade.

**State and municipal governments:** Exposure to this industry decreased by \$109 million in 2012 to \$41.8 billion.

**Lending-related commitments** comprise approximately 69% of the exposure to this sector, generally in the form of bond and commercial paper

liquidity and standby letter of credit commitments. The credit quality of the portfolio remains high as 97% of the portfolio was rated investment-grade, which was unchanged from 2011. Criticized exposure was less than 0.40% of this industry's exposure. The non-U.S. portion of this industry was less than 4% of the total. The Firm continues to actively monitor and manage this exposure in light of the challenging environment faced by state and municipal governments. For further discussion of commitments for bond liquidity and standby letters of credit, see Note 29 on pages 308–315 of this Annual Report.

**All other:** All other at December 31, 2012 (excluding loans held-for-sale and loans at fair value), included \$195.6 billion of credit exposure. Concentrations of exposures include: (1) Individuals, Private Education & Civic Organizations, which were 57% of this category and (2) SPEs which were 28% of this category. Each of these categories has high credit quality, and approximately 90% of each of these categories were rated investment-grade. SPEs provide secured financing (generally backed by receivables, loans or bonds with a diverse group of obligors); the lending in this category was all secured and well-structured. For further discussion of SPEs, see Note 1 on pages 193–194 and Note 16 on pages 280–291 of this Annual Report. The remaining exposure within this category is well-diversified, with no category being more than 7% of its total.

The following tables present the geographic distribution of wholesale credit exposure including nonperforming assets and past due loans as of December 31, 2012 and 2011. The geographic distribution of the wholesale portfolio is determined based predominantly on the domicile (legal residence) of the borrower. For further information on Country Risk Management, see pages 170–173 of this Annual Report.

December 31, 2012 (in millions)	Credit exposure			Total credit exposure	Nonperforming			Total non-performing credit exposure	Assets acquired in loan and satisfaction	30 days or more past due and accruing loans
	Loans	Lending-related commitments	Derivative receivables		Nonaccrual	Delinquent	Lending-related commitments			
Europe/Middle East/Africa	\$40,760	\$ 75,706	\$ 35,561	\$152,027	\$13	\$ 8	\$ 15	\$ 36	\$ 9	\$131
Asia/Pacific	30,287	22,919	10,557	63,763	13	—	—	13	—	18
Latin America/Caribbean	30,322	26,438	4,889	61,649	67	—	4	71	—	640
Other North America	2,987	7,653	1,418	12,058	—	—	—	—	—	14
Total non-U.S.	104,356	132,716	52,425	289,497	93	8	19	120	9	803
Total U.S.	201,866	302,098	22,558	526,522	1,341	231	336	1,908	82	1,293
Loans held-for-sale and loans at fair value	6,961	—	—	6,961	111	NA	—	111	NA	—
Receivables from customers and other	—	—	—	23,648	—	NA	NA	—	NA	—
Total	\$313,183	\$ 434,814	\$ 74,983	\$846,628	\$1,545	\$ 239	\$ 355	\$ 2,139	\$ 91	\$2,096

  

December 31, 2011 (in millions)	Credit exposure			Total credit exposure	Nonperforming			Total non-performing credit exposure	Assets acquired in loan and satisfaction	30 days or more past due and accruing loans
	Loans	Lending-related commitments	Derivative receivables		Nonaccrual	Delinquent	Lending-related commitments			
Europe/Middle East/Africa	\$36,637	\$ 60,681	\$ 43,204	\$140,522	\$44	\$ 14	\$ 25	\$ 83	\$ —	\$68
Asia/Pacific	31,119	17,194	10,943	59,256	1	42	—	43	—	6
Latin America/Caribbean	25,141	20,859	5,316	51,316	386	—	15	401	3	222
Other North America	2,267	6,680	1,488	10,435	3	—	1	4	—	—
Total non-U.S.	95,164	105,414	60,951	261,529	434	56	41	531	3	296
Total U.S.	183,231	277,325	31,526	492,082	1,964	241	824	3,029	176	1,543
Loans held-for-sale and loans at fair value	4,621	—	—	4,621	183	NA	—	183	NA	—
Receivables from customers and other	—	—	—	17,461	—	NA	NA	—	NA	—
Total	\$283,016	\$ 382,739	\$ 92,477	\$775,693	\$2,581	\$ 297	\$ 865	\$ 3,743	\$ 179	\$1,839

(a) At December 31, 2012 and 2011, the Firm held an allowance for loan losses of \$310 million and \$496 million, respectively, related to nonaccrual retained loans resulting in allowance coverage ratios of 22% and 21%, respectively. Wholesale nonaccrual loans represented 0.49% and 0.91% of total wholesale loans at

December 31, 2012 and 2011, respectively.

Prior to the first quarter of 2012, reported amounts had only included defaulted derivatives; effective in the first (b)quarter of 2012, reported amounts in all periods include both defaulted derivatives as well as derivatives that have been risk rated as nonperforming.

#### Loans

In the normal course of its wholesale business, the Firm provides loans to a variety of customers, ranging from large corporate and institutional clients to high-net-worth individuals. For further discussion on loans, including information on credit quality indicators, see Note 14 on pages 250–275 of this Annual Report.

The Firm actively manages wholesale credit exposure. One way of managing credit risk is through sales of loans and lending-related commitments. During 2012 and 2011, the Firm sold \$8.4 billion and \$5.2 billion, respectively, of loans and commitments. These sale activities are not related to the Firm's securitization activities. For further discussion of securitization activity, see Liquidity Risk Management and Note 16 on pages 127–133 and 280–291 respectively, of this Annual Report.

The following table presents the change in the nonaccrual loan portfolio for the years ended December 31, 2012 and 2011. Nonaccrual wholesale loans decreased by \$1.0 billion from December 31, 2011, primarily reflecting paydowns.

#### Wholesale nonaccrual loan activity

Year ended December 31, (in millions)	2012	2011
Beginning balance	\$2,581	\$6,006
Additions	1,748	2,519
Reductions:		
Paydowns and other	1,784	2,841
Gross charge-offs	335	907
Returned to performing status	240	807
Sales	425	1,389
Total reductions	2,784	5,944
Net additions/(reductions)	(1,036)	(3,425)
Ending balance	\$1,545	\$2,581

## Management's discussion and analysis

The following table presents net charge-offs/recoveries, which are defined as gross charge-offs less recoveries, for the years ended December 31, 2012 and 2011. The amounts in the table below do not include gains or losses from sales of nonaccrual loans.

## Wholesale net charge-offs/recoveries

Year ended December 31, (in millions, except ratios)	2012	2011	
Loans – reported			
Average loans retained	\$291,980	\$245,111	
Gross charge-Offs	346	916	
Gross recoveries	(524	) (476	)
Net charge-offs/(recoveries)	(178	) 440	
Net charge-off/(recovery) rate	(0.06	)%0.18	%

## Receivables from customers

Receivables from customers primarily represent margin loans to prime and retail brokerage clients that are collateralized through a pledge of assets maintained in clients' brokerage accounts that are subject to daily minimum collateral requirements. In the event that the collateral value decreases, a maintenance margin call is made to the client to provide additional collateral into the account. If additional collateral is not provided by the client, the client's position may be liquidated by the Firm to meet the minimum collateral requirements.

## Lending-related commitments

JPMorgan Chase uses lending-related financial instruments, such as commitments and guarantees, to meet the financing needs of its customers. The contractual amounts of these financial instruments represent the maximum possible credit risk should the counterparties draw down on these commitments or the Firm fulfills its obligations under these guarantees, and the counterparties subsequently fails to perform according to the terms of these contracts. In the Firm's view, the total contractual amount of these wholesale lending-related commitments is not representative of the Firm's actual credit risk exposure or funding requirements. In determining the amount of credit risk exposure the Firm has to wholesale lending-related commitments, which is used as the basis for allocating credit risk capital to these commitments, the Firm has established a "loan-equivalent" amount for each commitment; this amount represents the portion of the unused commitment or other contingent exposure that is expected, based on average portfolio historical experience, to become drawn upon in an event of a default by an obligor. The loan-equivalent amount of the Firm's lending-related commitments was \$223.7 billion and \$206.5 billion as of December 31, 2012 and 2011, respectively.

## Derivative contracts

In the normal course of business, the Firm uses derivative instruments predominantly for market-making activities. Derivatives enable customers to manage exposures to fluctuations in interest rates, currencies and other markets. The Firm also uses derivative instruments to manage its own credit exposure. For further discussion of derivative contracts, see Note 5 and Note 6 on page 217 and pages 218–227, respectively, of this Annual Report. The following table summarizes the net derivative receivables for the periods presented.

## Derivative receivables

December 31, (in millions)	Derivative receivables		
	2012	2011	
Interest rate	\$39,205	\$46,369	
Credit derivatives	1,735	6,684	
Foreign exchange	14,142	17,890	
Equity	9,266	6,793	
Commodity	10,635	14,741	
Total, net of cash collateral	74,983	92,477	
	(13,658	) (21,807	)

Liquid securities and other cash collateral held against derivative receivables

Total, net of all collateral	\$61,325	\$70,670
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Derivative receivables reported on the Consolidated Balance Sheets were \$75.0 billion and \$92.5 billion at December 31, 2012 and 2011, respectively. These amounts represent the fair value of the derivative contracts after giving effect to legally enforceable master netting agreements, cash collateral held by the Firm and the CVA. However, in management's view, the appropriate measure of current credit risk should also take into consideration additional liquid securities (primarily U.S. government and agency securities and other G7 government bonds) and other cash collateral held by the Firm of \$13.7 billion and \$21.8 billion at December 31, 2012 and 2011, respectively, that may be used as security when the fair value of the client's exposure is in the Firm's favor, as shown in the table above.

In addition to the collateral described in the preceding paragraph, the Firm also holds additional collateral (including cash, U.S. government and agency securities, and other G7 government bonds) delivered by clients at the initiation of transactions, as well as collateral related to contracts that have a non-daily call frequency and collateral that the Firm has agreed to return but has not yet settled as of the reporting date. Though this collateral does not reduce the balances and is not included in the table above, it is available as security against potential exposure that could arise should the fair value of the client's derivative transactions move in the Firm's favor. As of December 31, 2012 and 2011, the Firm held \$22.6 billion and \$17.6 billion, respectively, of this additional collateral. The derivative receivables, net of all collateral, also does not include other credit enhancements, such as letters of credit. For additional information on the Firm's use of collateral agreements, see Note 6 on pages 218–227 of this Annual Report.

While useful as a current view of credit exposure, the net fair value of the derivative receivables does not capture the potential future variability of that credit exposure. To capture the potential future variability of credit exposure, the Firm calculates, on a client-by-client basis, three measures of potential derivatives-related credit loss: Peak, Derivative Risk Equivalent (“DRE”), and Average exposure (“AVG”). These measures all incorporate netting and collateral benefits, where applicable.

Peak exposure to a counterparty is an extreme measure of exposure calculated at a 97.5% confidence level. DRE exposure is a measure that expresses the risk of derivative exposure on a basis intended to be equivalent to the risk of loan exposures. The measurement is done by equating the unexpected loss in a derivative counterparty exposure (which takes into consideration both the loss volatility and the credit rating of the counterparty) with the unexpected loss in a loan exposure (which takes into consideration only the credit rating of the counterparty). DRE is a less extreme measure of potential credit loss than Peak and is the primary measure used by the Firm for credit approval of derivative transactions.

Finally, AVG is a measure of the expected fair value of the Firm's derivative receivables at future time periods, including the benefit of collateral. AVG exposure over the total life of the derivative contract is used as the primary metric for pricing purposes and is used to calculate credit capital and the CVA, as further described below. The three year AVG exposure was \$42.3 billion and \$53.6 billion at December 31, 2012 and 2011, respectively, compared with derivative receivables, net of all collateral, of \$61.3 billion and \$70.7 billion at December 31, 2012 and 2011, respectively.

The fair value of the Firm's derivative receivables incorporates an adjustment, the CVA, to reflect the credit quality of counterparties. The CVA is based on the Firm's AVG to a counterparty and the counterparty's credit spread in the credit derivatives market. The primary components of changes in CVA are credit spreads, new deal activity or unwinds, and changes in the underlying market environment. The Firm believes that active risk management is essential to controlling the dynamic credit risk in the derivatives portfolio. In addition, the Firm's risk management process takes into consideration the potential impact of wrong-way risk, which is broadly defined as the potential for increased correlation between the Firm's exposure to a counterparty (AVG) and the counterparty's credit quality. Many factors may influence the nature and magnitude of these correlations over time. To the extent that these correlations are identified, the Firm may adjust the CVA associated with that counterparty's AVG. The Firm risk manages exposure to changes in CVA by entering into credit derivative transactions, as well as interest rate, foreign exchange, equity and commodity derivative transactions.

The accompanying graph shows exposure profiles to derivatives over the next 10 years as calculated by the DRE and AVG metrics. The two measures generally show that exposure will decline after the first year, if no new trades are added to the portfolio.



## Management's discussion and analysis

The following table summarizes the ratings profile by derivative counterparty of the Firm's derivative receivables, including credit derivatives, net of other liquid securities collateral, for the dates indicated.

## Ratings profile of derivative receivables

Rating equivalent December 31, (in millions, except ratios)	2012		2011		
	Exposure net of all collateral	% of exposure net of all collateral	Exposure net of all collateral	% of exposure net of all collateral	
AAA/Aaa to AA-/Aa3	\$20,040	33	% \$25,100	35	%
A+/A1 to A-/A3	12,169	20	22,942	32	
BBB+/Baa1 to BBB-/Baa3	18,197	29	9,595	14	
BB+/Ba1 to B-/B3	9,636	16	10,545	15	
CCC+/Caa1 and below	1,283	2	2,488	4	
Total	\$61,325	100	% \$70,670	100	%

As noted above, the Firm uses collateral agreements to mitigate counterparty credit risk. The percentage of the Firm's derivatives transactions subject to collateral agreements – excluding foreign exchange spot trades, which

are not typically covered by collateral agreements due to their short maturity – was 88% as of December 31, 2012, unchanged compared with December 31, 2011.

## Credit derivatives

Credit derivatives are financial instruments whose value is derived from the credit risk associated with the debt of a third party issuer (the reference entity) and which allow one party (the protection purchaser) to transfer that risk to another party (the protection seller) when the reference entity suffers a credit event. If no credit event has occurred, the protection seller makes no payments to the protection purchaser.

For a more detailed description of credit derivatives, see Credit derivatives in Note 6 on pages 218–227 of this Annual Report.

The Firm uses credit derivatives for two primary purposes: first, in its capacity as a market-maker; and second, as an end-user, to manage the Firm's own credit risk associated with various exposures.

Included in end-user activities are credit derivatives used to mitigate the credit risk associated with traditional lending activities (loans and unfunded commitments) and derivatives counterparty exposure in the Firm's wholesale businesses ("Credit Portfolio Management" activities). Information on Credit Portfolio Management activities is provided in the table below.

In addition, the Firm uses credit derivatives as an end-user to manage other exposures, including credit risk arising from certain AFS securities and from certain securities held in the Firm's market making businesses. These credit derivatives, as well as the synthetic credit portfolio, are not included in Credit Portfolio Management activities; for further information on these credit derivatives as well as credit derivatives used in the Firm's capacity as a market maker in credit derivatives, see Credit derivatives in Note 6 on pages 226–227 of this Annual Report.

Credit Portfolio Management activities  
Credit Portfolio Management derivatives

December 31, (in millions)	Notional amount of protection purchased and sold <sup>(a)</sup>	
	2012	2011
Credit derivatives used to manage:		
Loans and lending-related commitments	\$2,166	\$3,488
Derivative receivables	25,347	22,883
Total net protection purchased	27,513	26,371
Total net protection sold	66	131
Credit Portfolio Management derivatives net notional	\$27,447	\$26,240

(a) Amounts are presented net, considering the Firm's net protection purchased or sold with respect to each underlying reference entity or index.

The credit derivatives used in Credit Portfolio Management activities do not qualify for hedge accounting under U.S. GAAP; these derivatives are reported at fair value, with gains and losses recognized in principal transactions revenue. In contrast, the loans and lending-related commitments being risk-managed are accounted for on an accrual basis. This asymmetry in accounting treatment, between loans and lending-related commitments and the credit derivatives used in credit portfolio management activities, causes earnings volatility that is not

representative, in the Firm's view, of the true changes in value of the Firm's overall credit exposure. In addition, the effectiveness of the Firm's credit default swap ("CDS") protection as a hedge of the Firm's exposures may vary depending on a number of factors, including the maturity of the Firm's CDS protection (which in some cases may be shorter than the Firm's exposures), the named reference entity (i.e., the Firm may experience losses on specific exposures that are different than the named reference entities in the purchased CDS), and the contractual terms of the CDS (which may have a defined credit event that does not align with an actual loss realized by the Firm).

The fair value related to the Firm's credit derivatives used for managing credit exposure, as well as the fair value related to the CVA (which reflects the credit quality of derivatives counterparty exposure), are included in the gains and losses realized on credit derivatives disclosed in the table below. These results can vary from period to period due to market conditions that affect specific positions in the portfolio.

Net gains and losses on credit portfolio hedges

Year ended December 31, (in millions)	2012		2011		2010	
Hedges of loans and lending-related commitments	\$(163	)	\$(32	)	\$(279	)
CVA and hedges of CVA	127		(769	)	(403	)
Net gains/(losses)	\$(36	)	\$(801	)	\$(682	)

COMMUNITY REINVESTMENT ACT EXPOSURE

The Community Reinvestment Act ("CRA") encourages banks to meet the credit needs of borrowers in all segments of their communities, including neighborhoods with low or moderate incomes. The Firm is a national leader in community development by providing loans, investments and community development services in communities across the United States.

At December 31, 2012 and 2011, the Firm's CRA loan portfolio was approximately \$16 billion and \$15 billion, respectively. At December 31, 2012 and 2011, 62% and

63%, respectively, of the CRA portfolio were residential mortgage loans; 18% and 17%, respectively, were business banking loans; 13% and 14%, respectively, were commercial real estate loans; and 7% and 6%, respectively, were other loans. CRA nonaccrual loans were 4% and 6%, respectively, of the Firm's total nonaccrual loans. For the years ended December 31, 2012 and 2011, net charge-offs in the CRA portfolio were 3% of the Firm's net charge-offs in

both years.

#### ALLOWANCE FOR CREDIT LOSSES

JPMorgan Chase's allowance for loan losses covers the consumer, including credit card, portfolio segments (primarily scored); and wholesale (risk-rated) portfolio. The allowance represents management's estimate of probable credit losses inherent in the Firm's loan portfolio. Management also determines an allowance for wholesale and certain consumer, excluding credit card, lending-related commitments.

The allowance for loan losses includes an asset-specific component, a formula-based component, and a component related to PCI loans. The asset-specific component and the PCI loan component are generally based on an estimate of

cash flows expected to be collected from specifically identified impaired or PCI loans. The formula-based component is based on a statistical calculation to provide for probable principal losses inherent in the remaining loan portfolios. Within the formula-based component, management applies judgment within an established framework to adjust the results of applying its statistical loss calculation. The determination of the appropriate adjustment is based on management's view of uncertainties that have occurred but are not yet reflected in the statistical calculation and that relate to current macroeconomic and political conditions, the quality of underwriting standards, and other relevant internal and external factors affecting

## Management's discussion and analysis

the credit quality of the portfolio. For a further discussion of the components of the allowance for credit losses, see Critical Accounting Estimates Used by the Firm on pages 178–182 and Note 15 on pages 276–279 of this Annual Report.

At least quarterly, the allowance for credit losses is reviewed by the Chief Risk Officer, the Chief Financial Officer and the Controller of the Firm, and discussed with the Risk Policy and Audit Committees of the Board of Directors of the Firm. As of December 31, 2012, JPMorgan Chase deemed the allowance for credit losses to be appropriate (i.e., sufficient to absorb probable credit losses inherent in the portfolio).

The allowance for credit losses was \$22.6 billion at December 31, 2012, a decrease of \$5.7 billion from \$28.3 billion at December 31, 2011.

The consumer, excluding credit card, allowance for loan losses decreased \$4.0 billion from December 31, 2011, predominantly due to a reduction in the allowance for the non-PCI residential real estate portfolio, reflecting the continuing trend of improving delinquencies and nonaccrual loans (excluding the impact of Chapter 7 loans and junior liens that are subordinate to senior liens that are 90 days or more past due, which have been included in nonaccrual loans beginning in 2012), which resulted in a lower level of estimated losses based on the Firm's base statistical loss calculation. The allowance also included a \$488 million reduction attributable to a refinement of the loss estimates associated with the Firm's compliance with its obligations under the global settlement, which reflected changes in implementation strategies adopted in the second quarter of 2012. The adjustment to the base statistical loss calculation that underlies the formula-based component of the allowance for credit losses for the consumer, excluding credit card, portfolio segment has declined over the past two years, predominantly because specific risks covered by this adjustment were subsequently incorporated into either the base statistical loss calculation or asset-specific reserves during that same time period.

The credit card allowance for loan losses decreased by \$1.5 billion since December 31, 2011, due to reductions in both the asset-specific allowance and the formula-based allowance. The reduction in the asset-specific allowance, which relates to loans restructured in TDRs, largely reflects the changing profile of the TDR portfolio. The volume of new TDRs, which have higher loss rates due to expected redefaults, continues to decrease, and the loss rate on existing TDRs is also decreasing over time as previously restructured loans season and continue to perform. In addition, effective June 30, 2012, the Firm changed its policy for recognizing charge-offs on restructured loans that do not comply with their modified payment terms based upon guidance received from the banking regulators; this policy change resulted in an acceleration of charge-offs against the asset-specific allowance. For the year ended December 31, 2012, the reduction in the formula-based

allowance was primarily driven by the continuing trend of improving delinquencies and bankruptcies (which resulted in a lower level of estimated losses based on the Firm's statistical loss calculation) and by lower levels of credit card outstandings. The adjustment to the base statistical loss calculation that underlies the formula-based component of the allowance for credit losses for the credit card portfolio segment has increased somewhat over the past two years, primarily to consider current macroeconomic conditions (including relatively high unemployment rates).

The wholesale allowance for loan losses decreased by \$173 million since December 31, 2011. The decrease was driven by recoveries, the restructuring of certain nonperforming loans and other portfolio activity, as well as continued improvements in the wholesale credit environment as evidenced by lower charge-offs, non-accrual assets and downgrade activity. The resulting decrease has been partially offset by an increase in the adjustment to the base statistical loss calculation in order to reflect inherent credit losses that have not been captured by current credit metrics and greater levels of uncertainty, due to the low level of criticized assets and limited downgrade activity in the portfolio.

For additional information about the credit quality of the Firm's loan portfolios, see Consumer Credit Portfolio on pages 138–149, Wholesale Credit Portfolio on pages 150–159, and Note 14 on pages 250–275 of this Annual Report. The allowance for lending-related commitments for both the consumer, excluding credit card, and wholesale portfolios, which is reported in other liabilities, was \$668 million and \$673 million at December 31, 2012 and 2011, respectively.

The credit ratios in the following table are based on retained loan balances, which exclude loans held-for-sale and loans accounted for at fair value.

## Summary of changes in the allowance for credit losses

Year ended December 31, (in millions, except ratios)	2012				2011			
	Consumer, excluding credit card	Credit card	Wholesale	Total	Consumer, excluding credit card	Credit card	Wholesale	Total
Allowance for loan losses								
Beginning balance at January 1,	\$16,294	\$6,999	\$4,316	\$27,609	\$16,471	\$11,034	\$4,761	\$32,266
Gross charge-offs	4,805	<sup>(d)</sup> 5,755	346	10,906	5,419	8,168	916	14,503
Gross recoveries	(508 )	(811 )	(524 )	(1,843 )	(547 )	(1,243 )	(476 )	(2,266 )
Net charge-offs/(recoveries)	4,297	<sup>(d)</sup> 4,944	(178 )	9,063	4,872	6,925	440	12,237
Provision for loan losses	302	3,444	(359 )	3,387	4,670	2,925	17	7,612
Other	(7 )	2	8	3	25	(35 )	(22 )	(32 )
Ending balance at December 31,	\$12,292	\$5,501	\$4,143	\$21,936	\$16,294	\$6,999	\$4,316	\$27,609
Impairment methodology								
Asset-specific <sup>(a)</sup>	\$729	\$1,681	\$319	\$2,729	\$828	\$2,727	\$516	\$4,071
Formula-based	5,852	3,820	3,824	13,496	9,755	4,272	3,800	17,827
PCI	5,711	—	—	5,711	5,711	—	—	5,711
Total allowance for loan losses	\$12,292	\$5,501	\$4,143	\$21,936	\$16,294	\$6,999	\$4,316	\$27,609
Allowance for lending-related commitments								
Beginning balance at January 1,	\$7	\$—	\$666	\$673	\$6	\$—	\$711	\$717
Provision for lending-related commitments	—	—	(2 )	(2 )	2	—	(40 )	(38 )
Other	—	—	(3 )	(3 )	(1 )	—	(5 )	(6 )
Ending balance at December 31,	\$7	\$—	\$661	\$668	\$7	\$—	\$666	\$673
Impairment methodology								
Asset-specific	\$—	\$—	\$97	\$97	\$—	\$—	\$150	\$150
Formula-based	7	—	564	571	7	—	516	523
Total allowance for lending-related commitments	\$7	\$—	\$661	\$668	\$7	\$—	\$666	\$673
Total allowance for credit losses	\$12,299	\$5,501	\$4,804	\$22,604	\$16,301	\$6,999	\$4,982	\$28,282
Memo:								
Retained loans, end of period	\$292,620	\$127,993	\$306,222	\$726,835	\$308,427	\$132,175	\$278,395	\$718,997
Retained loans, average	300,024	125,031	291,980	717,035	315,736	127,334	245,111	688,181

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PCI loans, end of period	59,737		—	19	59,756	65,546	—	21	65,567	
Credit ratios										
Allowance for loan losses to retained loans	4.20	%	4.30	% 1.35	% 3.02	% 5.28	% 5.30	% 1.55	% 3.84	%
Allowance for loan losses to retained nonaccrual loans <sup>(b)</sup>	134		NM	289	207	220	NM	180	281	
Allowance for loan losses to retained nonaccrual loans excluding credit card	134		NM	289	155	220	NM	180	210	
Net charge-off/(recovery) rates <sup>(c)</sup>	1.43		<sup>(d)</sup> 3.95	(0.06 )	1.26	1.54	5.44	0.18	1.78	
Credit ratios, excluding residential real estate PCI loans										
Allowance for loan losses to retained loans	2.83		4.30	1.35	2.43	4.36	5.30	1.55	3.35	
Allowance for loan losses to retained nonaccrual loans <sup>(b)</sup>	72		NM	289	153	143	NM	180	223	
Allowance for loan losses to retained nonaccrual loans excluding credit card <sup>(b)</sup>	72		NM	289	101	143	NM	180	152	
Net charge-off/(recovery) rates <sup>(c)</sup>	1.81	%	<sup>(d)</sup> 3.95	% (0.06 )	% 1.38	% 1.97	% 5.44	% 0.18	% 1.98	%

(a)

(a) Includes risk-rated loans that have been placed on nonaccrual status and loans that have been modified in a TDR.

(b) The Firm's policy is generally to exempt credit card loans from being placed on nonaccrual status as permitted by regulatory guidance.

(c) Charge-offs are not recorded on PCI loans until actual losses exceed estimated losses recorded as purchase accounting adjustments at the time of acquisition.

(d) Net charge-offs and net charge-off rates for the year ended December 31, 2012, included \$800 million of charge-offs of Chapter 7 loans. See Consumer Credit Portfolio on pages 138–149 of this Annual Report for further details.

## Management's discussion and analysis

## Provision for credit losses

For the year ended December 31, 2012, the provision for credit losses was \$3.4 billion, down by 55% from 2011. The consumer, excluding credit card, provision for credit losses was \$302 million in 2012, compared with \$4.7 billion in 2011, reflecting reductions in the allowance for loan losses due primarily to lower estimated losses in the non-PCI residential real estate portfolio as delinquency trends improved. These reductions were partially offset by the impact of charge-offs of Chapter 7 loans.

The credit card provision for credit losses was \$3.4 billion in 2012, compared with \$2.9 billion in 2011, reflecting a smaller current year reduction in the allowance for loan losses compared with the prior year, partially offset by lower net charge-offs in 2012.

In 2012 the wholesale provision for credit losses was a benefit of \$361 million, compared with a benefit of \$23 million in 2011. The current year period provision reflected recoveries, the restructuring of certain nonperforming loans, current credit trends and other portfolio activity. For further information on the provision for credit losses, see the Consolidated Results of Operations on pages 72–75 of this Annual Report.

Year ended December 31, (in millions)	Provision for loan losses			Provision for lending-related commitments			Total provision for credit losses		
	2012	2011	2010	2012	2011	2010	2012	2011	2010
Consumer, excluding credit card	\$302	\$4,670	\$9,458	\$—	\$2	\$(6)	\$302	\$4,672	\$9,452
Credit card	3,444	2,925	8,037	—	—	—	3,444	2,925	8,037
Wholesale	(359)	17	(673)	(2)	(40)	(177)	(361)	(23)	(850)
Total provision for credit losses	\$3,387	\$7,612	\$16,822	\$(2)	\$(38)	\$(183)	\$3,385	\$7,574	\$16,639



## MARKET RISK MANAGEMENT

Market risk is the exposure to an adverse change in the market value of portfolios and financial instruments caused by a change in their market prices.

### Market risk management

Market Risk is an independent risk management function that works in close partnership with the lines of business, including Corporate/Private Equity, to identify and monitor market risks throughout the Firm and to define market risk policies and procedures. The market risk function reports to the Firm's Chief Risk Officer.

Market Risk seeks to control risk, facilitate efficient risk/return decisions, reduce volatility in operating performance and provide transparency into the Firm's market risk profile for senior management, the Board of Directors and regulators. Market Risk is responsible for the following functions:

- Establishment of a market risk policy framework

- Independent measurement, monitoring and control of line of business and firmwide market risk

- Definition, approval and monitoring of limits

- Performance of stress testing and qualitative risk assessments

- Risk identification and classification

Each line of business is responsible for the management of the market risks within its units. The independent risk management group responsible for overseeing each line of business ensures that all material market risks are appropriately identified, measured, monitored and managed in accordance with the risk policy framework set out by Market Risk. The Firm's market risks arise primarily from the activities in CIB, Mortgage Production and Mortgage Servicing in CCB, and CIO in Corporate/Private Equity.

CIB makes markets in products across fixed income, foreign exchange, equities and commodities markets. This activity gives rise to market risk and may lead to a potential decline in net income as a result of changes in market prices and rates. In addition, CIB's credit portfolio exposes the Firm to market risks related to credit valuation adjustments ("CVA"), hedges of CVA and the fair value of hedges of the retained loan portfolio. Additional market risk positions result from debit valuation adjustments ("DVA") taken on structured notes and derivative liabilities to reflect the credit quality of the Firm; DVA is not included in VaR.

The Firm's Mortgage Production and Mortgage Servicing businesses includes the Firm's mortgage pipeline and warehouse loans, MSR's and all related hedges. These activities give rise to complex, non-linear interest rate risks, as well as basis risk. Non-linear risk arises primarily from prepayment options embedded in mortgages and changes in the probability of newly originated mortgage

commitments actually closing. Basis risk results from differences in the relative movements of the rate indices underlying mortgage exposure and other interest rates.

Corporate/Private Equity comprises Private Equity, Treasury and CIO. Treasury and CIO are predominantly responsible for measuring, monitoring, reporting and managing the Firm's liquidity, funding, capital and structural interest rate and foreign exchange risks. The risks managed by Treasury and CIO arise from the activities undertaken by the Firm's four major reportable business segments to serve their respective client bases, which generate both on- and off-balance sheet assets and liabilities.

### Risk measurement

#### Tools used to measure risk

Because no single measure can reflect all aspects of market risk, the Firm uses various metrics, both statistical and nonstatistical, including:

- Value-at-risk ("VaR")

- Economic-value stress testing

- Nonstatistical risk measures

- Loss advisories

- Profit and loss drawdowns

- Risk identification for large exposures ("RIFLEs")

- Nontrading interest rate-sensitive revenue-at-risk stress testing

Value-at-risk

JPMorgan Chase utilizes VaR, a statistical risk measure, to estimate the potential loss from adverse market moves in a normal market environment.

The Firm has one overarching VaR model framework used for risk management purposes across the Firm, which utilizes historical simulation based on data for the previous 12 months. The framework's approach assumes that historical changes in market values are representative of the distribution of potential outcomes in the immediate future. VaR is calculated assuming a one-day holding period and an expected tail-loss methodology, which approximates a 95% confidence level. This means that, assuming current changes in market values are consistent with the historical changes used in the simulation, the Firm would expect to incur losses greater than that predicted by VaR estimates five times in every 100 trading days.

Underlying the overall VaR model framework are individual VaR models that simulate historical market returns for individual products and/or risk factors. To capture material market risks as part of the Firm's risk management framework, comprehensive VaR model calculations are performed daily for businesses whose activities give rise to market risk. These VaR models are granular and incorporate numerous risk factors and inputs to simulate daily changes

## Management's discussion and analysis

in market values over the historical period; inputs are selected based on the risk profile of each portfolio as sensitivities and historical time series used to generate daily market values may be different for different products or risk management systems. The VaR model results across all portfolios are aggregated at the Firm level. Data sources used in VaR models may be the same as those used for financial statement valuations. However in cases where market prices are not observable, or where proxies are used in VaR historical time series, the sources may differ. In addition, the daily market data used in VaR models may be different than the independent third party data collected for VCG price testing in their monthly valuation process (see pages 196–200 of this Annual Report for further information on the Firm's valuation process.) VaR model calculations require a more timely (i.e., daily) data and consistent source for valuation and therefore it is not practical to use the monthly valuation process. VaR provides a consistent framework to measure risk profiles and levels of diversification across product types and is used for aggregating risks across businesses and monitoring limits. These VaR results are reported to senior management, the Board of Directors and regulators.

The Firm uses VaR as a statistical risk management tool for assessing risk under normal market conditions consistent with the day-to-day risk decisions made by the lines of business. VaR is not used to estimate the impact of stressed market conditions or to manage any impact from potential stress events. The Firm uses economic-value stress testing and other techniques to capture and manage market risk arising under stressed scenarios, as described further below.

Because VaR is based on historical data, it is an imperfect measure of market risk exposure and potential losses. For example, differences between current and historical market price volatility may result in fewer or greater VaR exceptions than the number indicated by the historical simulation. The VaR measurement also does not provide an estimate of the extent to which losses may exceed VaR results. In addition, based on their reliance on available historical data, limited time horizons, and other factors, VaR measures are inherently limited in their ability to measure certain risks and to predict losses, particularly those associated with market illiquidity and sudden or severe shifts in market conditions. As VaR cannot be used to determine future losses in the Firm's market risk positions, the Firm considers other metrics in addition to VaR to monitor and manage its market risk positions.

Separately, the Firm calculates a daily aggregated VaR in accordance with regulatory rules, which is used to derive the Firm's regulatory VaR based capital requirements. This regulatory VaR model framework currently assumes a ten business day holding period and an expected tail loss methodology, which approximates a 99% confidence level. Regulatory VaR is applied to positions as defined by the banking regulators' Basel I "Market Risk Rule", which are different than positions included in the Firm's internal risk management VaR. Certain positions are not included in the Firm's internal risk management VaR, while the Firm's internal risk management VaR includes some positions, such as CVA and its related credit hedges that are not included in Regulatory VaR. For further information, see Capital Management on pages 116–122 of this Annual Report. Effective in the first quarter of 2013, the Firm will implement regulatory VaR for positions as defined by the U.S. banking regulators' Basel 2.5 "Market Risk Rule".

The table below shows the results of the Firm's VaR measure using a 95% confidence level.

Total VaR										
As of or for the year ended	2012			2011			At December 31,			
December 31,							2012	2011		
(in millions)	Avg.	Min	Max	Avg.	Min	Max				
CIB trading VaR by risk type										
Fixed income	\$83	(a)	\$47	\$131	\$50	\$31	\$68	\$69	\$49	
Foreign exchange	10		6	22	11	6	19	8	19	
Equities	21		12	35	23	15	42	22	19	
Commodities and other	15		11	27	16	8	24	15	22	
Diversification benefit to CIB trading VaR	(45)	(b)	NM	(c)	NM	(c)	(42)	(b)	(55)	(b)
CIB trading VaR	84		50	128	58	34	80	75	54	
Credit portfolio VaR	25		16	42	33	19	55	18	42	
Diversification benefit to CIB trading and credit portfolio VaR	(13)	(b)	NM	(c)	NM	(c)	(15)	(b)	(20)	(b)
Total CIB trading and credit portfolio VaR	96	(a)(e)	58	142	76	42	102	84	(a)(e)	76
Other VaR										
Mortgage Production and Mortgage Servicing VaR	17		8	43	30	6	98	24	16	
Chief Investment Office ("CIO") VaR	92	(a)(d)	5	196	57	30	80	6	77	
Diversification benefit to total other VaR	(8)	(b)	NM	(c)	NM	(c)	(17)	(b)	(10)	(b)
Total other VaR	101		18	204	70	46	110	25	83	
Diversification benefit to total CIB and other VaR	(45)	(b)	NM	(c)	NM	(c)	(45)	(b)	(46)	(b)
Total VaR	\$152		\$93	\$254	\$101	\$67	\$147	\$98	\$113	

On July 2, 2012, CIO transferred its synthetic credit portfolio, other than a portion aggregating approximately \$12 billion notional, to CIB; CIO's retained portfolio was effectively closed out during the three months ended September 30, 2012. During the third quarter of 2012, the Firm applied a new VaR model to calculate VaR for both (a) the portion of the synthetic credit portfolio held by CIB, as well as the portion that was retained by CIO, and which was effectively closed out at September 30, 2012. For the three months ended December 31, 2012, this new VaR model resulted in a reduction to average fixed income VaR of \$11 million, average CIB trading and credit portfolio VaR of \$8 million, and average total VaR of \$7 million.

(b) Average portfolio VaR and period-end portfolio VaR were less than the sum of the VaR of the components described above, which is due to portfolio diversification. The diversification effect reflects the fact that the risks were not perfectly correlated.

(c) Designated as not meaningful ("NM"), because the minimum and maximum may occur on different days for different risk components, and hence it is not meaningful to compute a portfolio-diversification effect.

(d) Reference is made to CIO synthetic credit portfolio on pages 69–70 of this Annual Report regarding the Firm's restatement of its 2012 first quarter financial statements. The CIO VaR amount has not been recalculated for the first quarter to reflect the restatement. The 2012 full-year VaR does not include recalculated amounts for the first quarter of 2012.

(e) Effective in the fourth quarter of 2012, CIB's VaR includes the VaR of former reportable business segments, Investment Bank and Treasury & Securities Services ("TSS"), which were combined to form the CIB business segment as a result of the reorganization of the Firm's business segments. TSS VaR was not material and was previously classified within Other VaR. Prior period VaR disclosures were not revised as a result of the business

segment reorganization.

VaR measurement

CIB trading VaR includes substantially all market-making and client-driven activities as well as certain risk management activities in CIB. This includes the credit spread sensitivities to CVA and syndicated lending facilities that the Firm intends to distribute. For certain products, specific risk parameters are not captured in VaR. Reasons include the lack of inherent illiquidity and availability of appropriate historical data or suitable proxies. The Firm uses proxies to estimate the VaR for these and other products when daily time series are not available. It is likely that using an actual price-based time series for these products, if available, would affect the VaR results presented. While the overall impact to VaR is not material, the Firm uses alternative methods to capture and measure these risk parameters not otherwise captured in VaR, including economic-value stress testing, nonstatistical measures and risk identification for large exposures as described further below.

Credit portfolio VaR includes the derivative CVA, hedges of the CVA and hedges of the retained portfolio, which are reported in principal transactions revenue. Credit portfolio VaR does not include the retained loan portfolio, which is not reported at fair value.

Other VaR includes certain positions employed as part of the Firm's risk management function within the CIO and in the Mortgage Production and Mortgage Servicing businesses. CIO VaR includes positions, primarily in debt securities and derivatives, which are measured at fair value through earnings. Mortgage Production and Mortgage Servicing VaR includes the Firm's mortgage pipeline and warehouse loans, MSRs and all related hedges.

As noted above, CIB, Credit portfolio and other VaR does not include the retained loan portfolio, which is not reported at fair value; however, it does include hedges of those positions, which are reported at fair value. It also does not include DVA on structured notes and derivative liabilities to reflect the credit quality of the Firm; principal investments; certain foreign exchange positions used for net investment hedging of foreign currency operations; and longer-term securities investments managed by CIO that are primarily classified as available for sale. These positions are managed through the Firm's nontrading interest rate-sensitive revenue-at-risk and other cash flow-monitoring processes, rather than by using a VaR measure. Principal investing activities (including mezzanine financing, tax oriented investments, etc.) and private equity positions are managed using stress and scenario analyses and are not included in VaR. See the DVA sensitivity table on page 167 of this

## Management's discussion and analysis

Annual Report for further details. For a discussion of Corporate/Private Equity, see pages 102–104 of this Annual Report.

The Firm's VaR model calculations are continuously evaluated and enhanced in response to changes in the composition of the Firm's portfolios, changes in market conditions, improvements in the Firm's modeling techniques and other factors. Such changes will also affect historical comparisons of VaR results. Model changes go through a review and approval process by the Model Review Group prior to implementation into the operating environment. For further information, see Model risk on pages 125–126 of this Annual Report.

During the third quarter of 2012, the Firm applied a new VaR model to calculate VaR for the synthetic credit portfolio. (This model change went through the Firm's review and approval process by the Model Review Group prior to implementation of this model into the operating environment. For further information, see the Model risk on pages 125–126 of this Annual Report.)

For the six months ended December 31, 2012, this new VaR model resulted in a reduction to average fixed income VaR of \$19 million, average total CIB trading and credit portfolio VaR of \$18 million, average CIO VaR of \$9 million, and average total VaR of \$22 million. Prior period VaR results have not been recalculated using the new model. The new model uses data that references actual underlying indices, rather than being constructed through single name and index basis, which the Firm believes is a more direct representation of the risks that were in the portfolio. As a result, the Firm believes the new model, which was applied to both the portion of the synthetic credit portfolio held by CIB, as well as the portion that was retained by CIO, during the last six months of 2012 more appropriately captured the risks of the portfolio.

## 2012 and 2011 VaR results

As presented in the table above, average Total VaR was \$152 million for 2012, compared with \$101 million for 2011. The increase was primarily driven by the synthetic credit portfolio, partially offset by a decrease in market volatility in the fourth quarter of 2012.

Average total CIB trading and Credit portfolio VaR for the 2012 was \$96 million compared with \$76 million for 2011.

The increase was driven primarily by the addition of the synthetic credit portfolio in CIB on July 2, 2012.

Average CIO VaR for 2012 was \$92 million compared with \$57 million in 2011, predominantly reflecting the increased risk in the synthetic credit portfolio, during the first quarter of 2012. On July 2, 2012, CIO transferred its synthetic credit portfolio, other than a portion aggregating approximately \$12 billion notional, to CIB; CIO's retained portfolio was effectively closed out during the three months ended September 30, 2012.

Average Mortgage Production and Mortgage Servicing VaR was \$17 million for 2012 compared with \$30 million for 2011. These decreases were primarily driven by changes in the risk profile of the MSR Portfolio.

The Firm's average CIB and other VaR diversification benefit was \$45 million or 23% of the sum for 2012, compared with \$45 million or 31% of the sum for 2011. In general, over the course of the year, VaR exposure can vary significantly as positions change, market volatility fluctuates and diversification benefits change.

## VaR back-testing

The Firm conducts daily back-testing of VaR against its market risk-related revenue.

The following histogram illustrates the daily market risk-related gains and losses for CIB, CIO and Mortgage Production and Mortgage Servicing positions in CCB for the year ended December 31, 2012. This market risk-related revenue is defined as the change in value of: principal transactions revenue for CIB and CIO (excludes Private Equity gains/(losses) and unrealized and realized gains/(losses) from AFS securities and other investments held for the longer term); trading related net interest income for CIB, CIO and Mortgage Production and Mortgage Servicing in CCB; CIB brokerage commissions, underwriting fees or other revenue; revenue from syndicated lending facilities that the Firm intends to distribute; and mortgage fees and related income for the Firm's mortgage pipeline and warehouse loans, MSRs, and all related hedges. Daily firmwide market risk-related revenue excludes gains and losses from DVA.



The chart shows that for year ended December 31, 2012, the Firm posted market risk related gains on 220 of the 261 days in this period, with gains on eight days exceeding \$200 million. The chart includes year to date losses incurred in the synthetic credit portfolio. CIB and Credit Portfolio posted market risk-related gains on 254 days in the period. The inset graph looks at those days on which the Firm experienced losses and depicts the amount by which VaR exceeded the actual loss on each of those days. Of the

losses that were sustained on the 41 days of the 261 days in the trading period, the Firm sustained losses that exceeded the VaR measure on three of those days. These losses in excess of the VaR all occurred in the second quarter of 2012 and were due to the adverse effect of market movements on risk positions in the synthetic credit portfolio held by CIO. During the year ended December 31, 2012, CIB and Credit Portfolio experienced seven loss days; none of the losses on those days exceeded their respective VaR measures.

#### Other risk measures

##### Debit valuation adjustment sensitivity

The following table provides information about the gross sensitivity of DVA to a one-basis-point increase in JPMorgan Chase's credit spreads. This sensitivity represents the impact from a one-basis-point parallel shift in JPMorgan Chase's entire credit curve. However, the sensitivity at a single point in time multiplied by the change in credit spread at a single maturity point may not be representative of the actual DVA gain or loss realized within a period. The actual results reflect the movement in credit spreads across various maturities, which typically do not move in a parallel fashion, and is the product of a constantly changing exposure profile, among other factors.

##### Debit valuation adjustment sensitivity

(in millions)	One basis-point increase in JPMorgan Chase's credit spread
December 31, 2012	\$34
December 31, 2011	35

##### Economic-value stress testing

Along with VaR, stress testing is important in measuring and controlling risk. While VaR reflects the risk of loss due to adverse changes in markets using recent historical market behavior as an indicator of losses, stress testing captures the Firm's exposure to unlikely but plausible events in abnormal markets. The Firm runs weekly stress tests on market-related risks across the lines of business using multiple scenarios that assume significant changes in risk factors such as credit spreads, equity prices, interest rates, currency rates or commodity prices. The framework uses a grid-based approach, which calculates multiple magnitudes of stress for both market rallies and market sell-offs for



## Management's discussion and analysis

each risk factor. Stress-test results, trends and explanations based on current market risk positions are reported to the Firm's senior management and to the lines of business to allow them to better understand the sensitivity of positions to certain defined events and manage their risks with more transparency.

Stress scenarios are defined and reviewed by Market Risk, and significant changes are reviewed by the relevant Risk Committees, (For further details see Risk Governance, on pages 123–125 of this Annual Report). While most of these scenarios estimate losses based on significant market moves, such as an equity market collapse or credit crisis, the Firm also develops scenarios to quantify risk coming from specific portfolios or concentrations of risks, which attempt to capture certain idiosyncratic market movements. Scenarios may be redefined on an ongoing basis to reflect current market conditions. Ad hoc scenarios are run in response to specific market events or concerns. Furthermore, the Firm's stress testing framework is utilized in calculating results under scenarios mandated by the Federal Reserve's Comprehensive Capital Analysis and Review ("CCAR") and ICAAP ("Internal Capital Adequacy Assessment Process") processes.

## Nonstatistical risk measures

Nonstatistical risk measures include sensitivities to variables used to value positions, such as credit spread sensitivities, interest rate basis point values and market values. These measures provide granular information on the Firm's market risk exposure. They are aggregated by line-of-business and by risk type, and are used for tactical control and monitoring limits.

## Loss advisories and profit and loss drawdowns

Loss advisories and profit and loss drawdowns are tools used to highlight trading losses above certain levels of risk tolerance. Profit and loss drawdowns are defined as the decline in net profit and loss since the year-to-date peak revenue level.

## Risk identification for large exposures

Individuals who manage risk positions are responsible for identifying potential losses that could arise from specific, unusual events, such as a potential change in tax legislation, or a particular combination of unusual market moves. This information allows the Firm to monitor further earnings vulnerability not adequately covered by standard risk measures.

## Nontrading interest rate-sensitive revenue-at-risk (i.e., "earnings-at-risk")

The VaR and stress-test measures described above illustrate the total economic sensitivity of the Firm's Consolidated Balance Sheets to changes in market variables. The effect of interest rate exposure on reported net income is also important. Interest rate risk represents one of the Firm's significant market risk exposures. This risk arises not only from trading activities but also from the Firm's traditional

banking activities which include extension of loans and credit facilities, taking deposits and issuing debt (i.e., asset/liability management positions, accrual loans within CIB and CIO, and off-balance sheet positions). ALCO establishes the Firm's interest rate risk policies and sets risk guidelines. Treasury, working in partnership with the lines of business, calculates the Firm's interest rate risk profile weekly and reviews it with senior management.

Interest rate risk for nontrading activities can occur due to a variety of factors, including:

Differences in the timing among the maturity or repricing of assets, liabilities and off-balance sheet instruments. For example, if liabilities reprice more quickly than assets and funding interest rates are declining, net interest income will increase initially.

Differences in the amounts of assets, liabilities and off-balance sheet instruments that are repricing at the same time. For example, if more deposit liabilities are repricing than assets when general interest rates are declining, net interest income will increase initially.

Differences in the amounts by which short-term and long-term market interest rates change (for example, changes in the slope of the yield curve) because the Firm has the ability to lend at long-term fixed rates and borrow at variable or short-term fixed rates. Based on these scenarios, the Firm's net interest income would be affected negatively by a sudden and unanticipated increase in short-term rates paid on its liabilities (e.g., deposits) without a corresponding increase in long-term rates received on its assets (e.g., loans). Conversely, higher long-term rates received on assets

generally are beneficial to net interest income, particularly when the increase is not accompanied by rising short-term rates paid on liabilities.

The impact of changes in the maturity of various assets, liabilities or off-balance sheet instruments as interest rates change. For example, if more borrowers than forecasted pay down higher-rate loan balances when general interest rates are declining, net interest income may decrease initially.

The Firm manages interest rate exposure related to its assets and liabilities on a consolidated, corporate-wide basis. Business units transfer their interest rate risk to Treasury through a transfer-pricing system, which takes into account the elements of interest rate exposure that can be risk-managed in financial markets. These elements include asset and liability balances and contractual rates of interest, contractual principal payment schedules, expected prepayment experience, interest rate reset dates and maturities, rate indices used for repricing, and any interest rate ceilings or floors for adjustable rate products. All transfer-pricing assumptions are dynamically reviewed.

The Firm manages this interest rate risk generally through its investment securities portfolio and related derivatives.

The Firm evaluates its nontrading interest rate risk

exposure through the stress testing of earnings-at-risk, which measures the extent to which changes in interest rates will affect the Firm's core net interest income (see page 77 of this Annual Report for further discussion of core net interest income) and interest rate-sensitive fees ("nontrading interest rate-sensitive revenue"). Earnings-at-risk excludes the impact of trading activities and MSRs, as these sensitivities are captured under VaR.

The Firm conducts simulations of changes in nontrading interest rate-sensitive revenue under a variety of interest rate scenarios. Earnings-at-risk tests measure the potential change in this revenue, and the corresponding impact to the Firm's pretax net interest income, over the following 12 months. These tests highlight exposures to various interest rate-sensitive factors, such as the rates themselves (e.g., the prime lending rate), pricing strategies on deposits, optionality and changes in product mix. The tests include forecasted balance sheet changes, such as asset sales and securitizations, as well as prepayment and reinvestment behavior. Mortgage prepayment assumptions are based on current interest rates compared with underlying contractual rates, the time since origination, and other factors which are updated periodically based on historical experience and forward market expectations. The amount and pricing assumptions of deposits that have no stated maturity are based on historical performance, the competitive environment, customer behavior, and product mix.

Immediate changes in interest rates present a limited view of risk, and so a number of alternative scenarios are also reviewed. These scenarios include the implied forward curve, nonparallel rate shifts and severe interest rate shocks on selected key rates. These scenarios are intended to provide a comprehensive view of JPMorgan Chase's earnings-at-risk over a wide range of outcomes.

JPMorgan Chase's 12-month pretax net interest income sensitivity profiles.

(Excludes the impact of trading activities and MSRs)

December 31, (in millions)	Immediate change in rates			
	+200bp	+100bp	-100bp	-200bp
2012	\$3,886	\$2,145	NM	(a) NM (a)
2011	4,046	2,326	NM	(a) NM (a)

(a) Downward 100- and 200-basis-point parallel shocks result in a federal funds target rate of zero and negative three- and six-month treasury rates. The earnings-at-risk results of such a low-probability scenario are not meaningful.

The change in earnings-at-risk from December 31, 2011, resulted from investment portfolio repositioning, partially offset by higher expected deposit balances. The Firm's risk to rising rates was largely the result of widening deposit margins, which are currently compressed due to very low short-term interest rates, and ALM investment portfolio positioning.

Additionally, another interest rate scenario used by the Firm — involving a steeper yield curve with long-term rates rising by 100 basis points and short-term rates staying at current levels — results in a 12-month pretax net interest income benefit of \$778 million. The increase in net interest income under this scenario is due to reinvestment of maturing assets at the higher long-term rates, with funding costs remaining unchanged.

Risk monitoring and control

Limits

Market risk is controlled primarily through a series of limits set in the context of the market environment and business strategy. In setting limits, the Firm takes into consideration factors such as market volatility, product liquidity and accommodation of client business and management experience. The Firm maintains different levels of limits.

Corporate level limits include VaR and stress limits. Similarly, line of business limits include VaR and stress limits and may be supplemented by loss advisories, nonstatistical measurements and profit and loss drawdowns. Limits may also be allocated within the lines of business, as well at the portfolio level.

Limits are established by Market Risk in agreement with the lines of business. Limits are reviewed regularly by Market Risk and updated as appropriate, with any changes approved by lines of business management and Market Risk. Senior management, including the Firm's Chief Executive Officer and Chief Risk Officer, are responsible for reviewing and approving certain of these risk limits on an ongoing basis. All limits that have not been reviewed within

specified time periods by Market Risk are escalated to senior management. The lines of business are responsible for adhering to established limits against which exposures are monitored and reported.

Limit breaches are required to be reported in a timely manner by Risk Management to limit approvers, Market Risk and senior management. Market Risk consults with Firm senior management and lines of business senior management to determine the appropriate course of action required to return to compliance, which may include a reduction in risk in order to remedy the excess. Any Firm or line of business-level limits that are in excess for three business days or longer, or that are over limit by more than 30%, are escalated to senior management and the Firmwide Risk Committee.

Management's discussion and analysis

COUNTRY RISK MANAGEMENT

Country risk is the risk that a sovereign event or action alters the value or terms of contractual obligations of obligors, counterparties and issuers related to a country. The Firm has a comprehensive country risk management framework for assessing country risks, determining risk tolerance, and measuring and monitoring direct country exposures in the Firm's wholesale lines of business, including CIO. The Country Risk Management group is responsible for developing guidelines and policy for managing country risk in both emerging and developed countries. The Country Risk Management group actively monitors the wholesale portfolio, including CIO, to ensure the Firm's country risk exposures are diversified and that exposure levels are appropriate given the Firm's strategy and risk tolerance relative to a country.

Country risk organization

The Country Risk Management group is an independent risk management function which works in close partnership with other risk functions and across the wholesale lines of business, including CIO. The Country Risk Management governance consists of the following functions:

- Developing guidelines and policies consistent with a comprehensive country risk framework
- Assigning sovereign ratings and assessing country risks
- Measuring and monitoring country risk exposure across the Firm
- Managing country limits and reporting utilization to senior management
- Developing surveillance tools for early identification of potential country risk concerns
- Providing country risk scenario analysis

Country risk identification and measurement

The Firm is exposed to country risk through its wholesale lending, investing, and market-making activities, whether cross-border or locally funded. Country exposure includes activity with both government and private-sector entities in a country. Under the Firm's internal country risk management approach, country exposure is reported based on the country where the majority of the assets of the obligor, counterparty, issuer or guarantor are located or where the majority of its revenue is derived, which may be different than the domicile (legal residence) of the obligor, counterparty, issuer or guarantor. Country exposures are generally measured by considering the Firm's risk to an immediate default of the counterparty or obligor, with zero recovery.

• Lending exposures are measured at the total committed amount (funded and unfunded), net of the allowance for credit losses and cash and marketable securities collateral received

• AFS securities are measured at par value

• Securities financing exposures are measured at their receivable balance, net of collateral received

• Debt and equity securities in market-making and investing activities are measured at the fair value of all positions, including both long and short positions

• Counterparty exposure on derivative receivables, including credit derivative receivables, is measured at the derivative's fair value, net of the fair value of the related collateral

Credit derivatives protection purchased and sold are reported based on the underlying reference entity and is measured at the notional amount of protection purchased or sold, net of the fair value of the recognized derivative receivable or payable. Credit derivatives protection purchased and sold in the Firm's market-making activities are presented on a net basis, as such activities often result in selling and purchasing protection related to the same underlying reference entity, and which reflects the manner in which the Firm manages these exposures

In addition, the Firm also has indirect exposures to country risk (for example, related to the collateral received on securities financing receivables or related to client clearing activities). These indirect exposures are managed in the normal course of business through the Firm's credit, market, and operational risk governance, rather than through the country risk governance.

The Firm's internal country risk reporting differs from the reporting provided under FFIEC bank regulatory requirements. There are significant reporting differences in reporting methodology, including with respect to the treatment of collateral received and the benefit of credit derivative protection. For further information on the FFIEC's reporting methodology, see Cross-border outstandings on page 347 of the 2012 Form 10-K.



## Country risk monitoring and control

The Country Risk Management Group establishes guidelines for sovereign ratings reviews and limit management. In addition, the Country Risk Management group uses surveillance tools for early identification of potential country risk concerns, such as signaling models and ratings indicators. The limit framework includes a risk-tier approach and stress testing procedures for assessing the potential risk of loss associated with a significant sovereign crisis. Country ratings and limits activity are actively monitored and reported on a regular basis. Country limit requirements are reviewed and approved by senior management as often as necessary, but at least annually. For further information on market-risk stress testing the Firm performs in the normal course of business, see Market Risk Management on pages 163–169 of this Annual Report. For further information on credit loss estimates, see Critical Accounting Estimates – Allowance for credit losses on pages 178–180 of this Annual Report.

## Country risk reporting

The following table presents the Firm's top 20 exposures by country (excluding the U.S.). The selection of countries is based solely on the Firm's largest total exposures by country, based on the Firm's internal country risk management approach, and does not represent its view of any actual or potentially adverse credit conditions.

## Top 20 country exposures

December 31, 2012 (in billions)	Lending <sup>(a)</sup>	Trading and investing <sup>(b)(c)</sup>	Other <sup>(d)</sup>	Total exposure
United Kingdom	\$23.3	\$52.6	\$2.6	\$78.5
Germany	24.4	36.3	—	60.7
France	14.7	30.3	—	45.0
Netherlands	5.0	29.8	3.0	37.8
Switzerland	24.4	1.5	2.1	28.0
Australia	7.1	16.2	—	23.3
Canada	12.8	5.8	0.6	19.2
Brazil	5.9	13.0	—	18.9
India	7.3	7.9	0.7	15.9
Korea	6.5	7.8	0.6	14.9
China	8.0	3.9	1.3	13.2
Japan	3.7	7.7	—	11.4
Mexico	2.8	6.8	—	9.6
Italy	2.8	4.7	—	7.5
Singapore	3.8	1.8	1.2	6.8
Russia	4.6	1.9	—	6.5
Hong Kong	3.4	2.8	—	6.2
Sweden	3.5	1.9	0.5	5.9
Malaysia	1.5	3.6	0.7	5.8
Spain	3.1	1.6	—	4.7

Lending includes loans and accrued interest receivable, net of the allowance for loan losses, deposits with banks, (a) acceptances, other monetary assets, issued letters of credit net of participations, and undrawn commitments to extend credit. Excludes intra-day and operating exposures, such as from settlement and clearing activities.

(b) Includes market-making inventory, securities held in AFS accounts and hedging.

(c) Includes single-name and index and tranching credit derivatives for which one or more of the underlying reference entities is in a country listed in the above table.

(d) Includes capital invested in local entities and physical commodity inventory.





## Management's discussion and analysis

## Selected European exposure

Several European countries, including Spain, Italy, Ireland, Portugal and Greece, have been subject to continued credit deterioration due to weaknesses in their economic and fiscal situations. The Firm is closely monitoring its exposures in these countries and believes its exposure to these five countries is modest relative to the Firm's aggregate exposures. The Firm continues to conduct business and support client activity in these countries and, therefore, the Firm's aggregate net exposures and sector distribution may vary over time. In addition, the net exposures may be affected by changes in market conditions, including the effects of interest rates and credit spreads on market valuations.

The following table presents the Firm's direct exposure to the five countries listed below at December 31, 2012, as measured under the Firm's internal country risk management approach. For individual exposures, corporate clients represent approximately 78% of the Firm's non-sovereign exposure in these five countries, and substantially all of the remaining 22% of the non-sovereign exposure is to the banking sector.

December 31, 2012 (in billions)	Lending net of AFS Allowance <sup>(a)</sup>	securities <sup>(b)</sup>	Trading <sup>(c)</sup>	Derivative collateral <sup>(d)</sup>	Portfolio hedging <sup>(e)</sup>	Total exposure
<b>Spain</b>						
Sovereign	\$—	\$0.5	\$(0.4)	\$—	\$(0.1)	)\$—
Non-sovereign	3.1	—	5.2	(3.3)	(0.3)	)4.7
Total Spain exposure	\$3.1	\$0.5	\$4.8	\$(3.3)	\$(0.4)	)\$4.7
<b>Italy</b>						
Sovereign	\$—	\$—	\$11.6	\$(1.4)	\$(4.9)	)\$5.3
Non-sovereign	2.8	—	1.0	(1.2)	(0.4)	)2.2
Total Italy exposure	\$2.8	\$—	\$12.6	\$(2.6)	\$(5.3)	)\$7.5
<b>Ireland</b>						
Sovereign	\$—	\$0.3	\$—	\$—	\$(0.3)	)\$—
Non-sovereign	0.5	—	1.7	(0.3)	—	)1.9
Total Ireland exposure	\$0.5	\$0.3	\$1.7	\$(0.3)	\$(0.3)	)\$1.9
<b>Portugal</b>						
Sovereign	\$—	\$—	\$0.4	\$—	\$(0.3)	)\$0.1
Non-sovereign	0.5	—	(0.4)	(0.4)	(0.1)	)0.4
Total Portugal exposure	\$0.5	\$—	\$—	\$(0.4)	\$(0.4)	)\$0.3
<b>Greece</b>						
Sovereign	\$—	\$—	\$0.1	\$—	\$—	\$0.1
Non-sovereign	0.1	—	0.7	(0.9)	—	(0.1)
Total Greece exposure	\$0.1	\$—	\$0.8	\$(0.9)	)\$—	\$—
<b>Total exposure</b>	<b>\$7.0</b>	<b>\$0.8</b>	<b>\$19.9</b>	<b>\$(7.5)</b>	<b>\$(6.4)</b>	<b>)\$13.8</b>

Lending includes loans and accrued interest receivable, deposits with banks, acceptances, other monetary assets, issued letters of credit net of participations, and undrawn commitments to extend credit. Excludes intra-day and operating exposures, such as from settlement and clearing activities. Amounts are presented net of the allowance (a) for credit losses of \$116 million (Spain), \$79 million (Italy), \$9 million (Ireland), \$15 million (Portugal), and \$12 million (Greece) specifically attributable to these countries. Includes \$2.4 billion of unfunded lending exposure at December 31, 2012. These exposures consist typically of committed, but unused corporate credit agreements, with market-based lending terms and covenants.

(b) The fair value of AFS securities was approximately \$0.7 billion at December 31, 2012. The table above reflects AFS securities measured at par value.

(c)

Primarily includes: \$19.9 billion of counterparty exposure on derivative and securities financings, \$3.7 billion of issuer exposure on debt and equity securities held in trading, \$(3.6) billion of net protection from credit derivatives, including \$(4.1) billion related to the synthetic credit portfolio managed by CIB. Securities financings of approximately \$17.9 billion were collateralized with approximately \$20.2 billion of cash and marketable securities as of December 31, 2012.

(d) Includes cash and marketable securities pledged to the Firm, of which approximately 97% of the collateral was cash at December 31, 2012.

(e) Reflects net protection purchased through the Firm's credit portfolio management activities, which are managed separately from its market-making activities. Predominantly includes single-name CDS and also includes index credit derivatives and short bond positions. It does not include the synthetic credit portfolio.

## Effect of credit derivatives on selected European exposures

Country exposures in the Selected European exposure table above have been reduced by purchasing protection through single name, index, and tranching credit derivatives. The following table presents the effect of purchased and sold credit derivatives on the trading and portfolio hedging activities in the Selected European exposure table.

December 31, 2012 (in billions)	Trading			Portfolio hedging		
	Purchased	Sold	Net	Purchased	Sold	Net
Spain	\$(121.2 )	\$120.2	\$(1.0 )	\$(1.2 )	\$0.9	\$(0.3 )
Italy	(157.9 )	156.5	(1.4 )	(11.0 )	5.9	(5.1 )
Ireland	(7.1 )	7.2	0.1	(1.0 )	0.7	(0.3 )
Portugal	(43.2 )	42.2	(1.0 )	(0.5 )	0.1	(0.4 )
Greece	(11.7 )	11.4	(0.3 )	—	—	—
Total	\$(341.1 )	\$337.5	\$(3.6 )	\$(13.7 )	\$7.6	\$(6.1 )

Under the Firm's internal country risk management approach, generally credit derivatives are reported based on the country where the majority of the assets of the reference entity are located. Exposures are measured assuming that all of the reference entities in a particular country default simultaneously with zero recovery. For example, single-name and index credit derivatives are measured at the notional amount, net of the fair value of the derivative receivable or payable. Exposures for index credit derivatives, which may include several underlying reference entities, are determined by evaluating the relevant country for each of the reference entities underlying the named index, and allocating the applicable amount of the notional and fair value of the index credit derivative to each of the relevant countries. Tranching credit derivatives are measured at the modeled change in value of the derivative assuming the simultaneous default of all underlying reference entities in a specific country; this approach considers the tranching nature of the derivative (i.e., that some tranches are subordinate to others) and the Firm's own position in the structure. The total line in the table above represents the simple sum of the individual countries. Changes in the Firm's methodology or assumptions would produce different results.

The credit derivatives reflected in the "Trading" column include those from the Firm's market-making activities as well as \$(4.1) billion of net purchased protection in the synthetic credit portfolio managed by CIB beginning in July 2012. Based on scheduled maturities and risk reduction actions being taken in the synthetic credit portfolio, the amount of protection provided by the synthetic credit portfolio relative to the five named countries is likely to be substantially reduced over time.

The credit derivatives reflected in the "Portfolio hedging" column are used in the Firm's Credit Portfolio Management activities, which are intended to mitigate the credit risk associated with traditional lending activities and derivative counterparty exposure. These credit derivatives include both purchased and sold protection, where the sold

protection is generally used to close out purchased protection when appropriate under the Firm's risk mitigation strategies. In its Credit Portfolio Management activities, the Firm generally seeks to purchase credit protection with a maturity date that is the same or similar to the maturity date of the exposures for which the protection was purchased. However, there are instances where the purchased protection has a shorter maturity date than the maturity date of the exposure for which the protection was purchased. These exposures are actively monitored and managed by the Firm. The effectiveness of the Firm's CDS protection as a hedge of the Firm's exposures may vary depending upon a number of factors, including the contractual terms of the CDS. For further information about credit derivatives see Credit derivatives on pages 158–159, and Note 6 on pages 218–227 of this Annual Report.

The Firm's net presentation of purchased and sold credit derivatives reflects the manner in which this exposure is managed, and reflects, in the Firm's view, the substantial mitigation of market and counterparty credit risk in its credit derivative activities. Market risk is substantially mitigated because market-making activities, and to a lesser extent, hedging activities, often result in selling and purchasing protection related to the same underlying reference entity. For example, in each of the five countries as of December 31, 2012, the protection sold by the Firm was more than 92% offset by protection purchased on the identical reference entity.

In addition, counterparty credit risk has been substantially mitigated by the master netting and collateral agreements in place for these credit derivatives. As of December 31, 2012, 99% of the purchased protection presented in the table

above is purchased under contracts that require posting of cash collateral; 92% is purchased from investment-grade counterparties domiciled outside of the selected European countries; and 69% of the protection purchased offsets protection sold on the identical reference entity, with the identical counterparty subject to a master netting agreement.

Management's discussion and analysis

**PRINCIPAL RISK MANAGEMENT**

Principal investments are predominantly privately-held assets and instruments typically representing an ownership or junior capital position, that have unique risks due to their illiquidity and junior capital status, as well as lack of observable valuation data. Such investing activities, including mezzanine financing, tax-oriented investments and private equity positions, are typically intended to be held over extended investment periods and, accordingly, the Firm has no expectation for short-term gain with respect to these investments. All investments are approved by investment committees that include executives who are not part of the investing businesses. An independent valuation function is responsible for reviewing the appropriateness of the carrying values of principal investments, including private equity, in accordance with relevant accounting, valuation and risk policies.

The Firm's approach to managing principal risk is consistent with the Firm's general risk governance structure. Targeted levels for total and annual investments are established in order to manage the overall size of the portfolios. Industry and geographic concentration limits are in place and intended to ensure diversification of the portfolios. The Firm also conducts stress testing on these portfolios using specific scenarios that estimate losses based on significant market moves.

The Firm's merchant banking business is managed in Corporate/Private Equity (for detailed information, see Private Equity portfolio on page 104 of this Annual Report); other lines of business may also conduct some principal investing activities, including private equity positions, which are captured within their respective financial results.

## OPERATIONAL RISK MANAGEMENT

Operational risk is the risk of loss resulting from inadequate or failed processes or systems, human factors or external events.

### Overview

Operational risk is inherent in each of the Firm's businesses and support activities. Operational risk can manifest itself in various ways, including errors, fraudulent acts, business interruptions, inappropriate behavior of employees, or vendors that do not perform in accordance with their arrangements. These events could result in financial losses, including litigation and regulatory fines, as well as other damage to the Firm, including reputational harm. To monitor and control operational risk, the Firm maintains an overall framework that includes strong oversight and governance, comprehensive policies, consistent practices across the lines of business, and enterprise risk management tools intended to provide a sound and well-controlled operational environment.

The framework clarifies:

- Ownership of the risk by the businesses and functional areas
- Monitoring and validation by business control officers
- Oversight by independent risk management
- Governance through business risk & control committees
- Independent review by Internal Audit

The goal is to keep operational risk at appropriate levels, in light of the Firm's financial strength, the characteristics of its businesses, the markets in which it operates, and the competitive and regulatory environment to which it is subject. In order to strengthen focus on the Firm's control environment and drive consistent practices across businesses and functional areas, the Firm established a new Firmwide Oversight and Control Group during 2012. This group is dedicated to enhancing the Firm's control framework, and to looking within and across the lines of business and the Corporate functions (including CIO) to identify and remediate control issues. The Firmwide Oversight and Control Group will work closely with all control disciplines - partnering with compliance, risk, audit and other functions - in order to provide a cohesive and centralized view of control functions and control issues. Among other things, Oversight and Control will enable the Firm to detect problems and escalate issues quickly, get the right people involved to understand the common themes and interdependencies among various business and control issues, and effectively remediate these issues across all affected areas of the Firm. As a result, the group will facilitate an effective control framework and operational risk management across the Firm.

The Operational risk management framework

The Firm's approach to operational risk management is

intended to identify potential issues and mitigate losses by supplementing traditional control-based approaches to

operational risk with risk measures, tools and disciplines that are risk-specific, consistently applied and utilized firmwide. Key themes are transparency of information, escalation of key issues and accountability for issue resolution. In addition to the standard Basel risk event categories, the Firm has developed the operational risk categorization taxonomy below for purposes of identification, monitoring, reporting and analysis:

Fraud risk

Improper market practices

Improper client management

Processing error

Financial reporting error

Information risk

Technology risk (including cybersecurity risk)

Third-party risk

Disruption & safety risk

Employee risk

Risk management error (including model risk)

Key components of the Operational Risk Management Framework include:

#### Control assessment

In order to evaluate the effectiveness of the control environment in mitigating operational risk, the businesses utilize the Firm's standard self-assessment process and supporting architecture. The goal of the self-assessment process is for each business to identify the key operational risks specific to its environment and assess the degree to which it maintains appropriate controls. Action plans are developed for control issues that are identified, and businesses are held accountable for tracking and resolving issues on a timely basis.

#### Risk monitoring

The Firm has a process for monitoring operational risk event data, which permits analysis of errors and losses as well as trends. Such analysis, performed both at a line of business level and by risk-event type, enables identification of the causes associated with risk events faced by the businesses. Where available, the internal data can be supplemented with external data for comparative analysis with industry patterns.

#### Risk reporting and analysis

Operational risk management reports provide information, including actual operational loss levels, self-assessment results and the status of issue resolution to the lines of business and senior management. The purpose of these reports is to enable management to maintain operational risk at appropriate levels within each line of business, to escalate issues and to provide consistent data aggregation across the Firm's businesses and support areas.

#### Risk measurement

Operational risk is measured using a statistical model based on the loss distribution approach. The operational risk

## Management's discussion and analysis

capital model uses actual losses, a comprehensive inventory of forward looking potential loss scenarios with adjustments to reflect changes in the quality of the control environment in determining Firmwide operational risk capital. This methodology is designed to comply with the advanced measurement rules under the Basel II Framework.

### Operational risk management system

The Firm's operational risk framework is supported by Phoenix, an internally designed operational risk system, which integrates the individual components of the operational risk management framework into a unified, web-based tool.

Phoenix enhances the capture, reporting and analysis of operational risk data by enabling risk identification, measurement, monitoring, reporting and analysis to be done in an integrated manner across the Firm.

### Audit alignment

Internal Audit utilizes a risk-based program of audit coverage to provide an independent assessment of the design and effectiveness of key controls over the Firm's operations, regulatory compliance and reporting. This includes reviewing the operational risk framework, the effectiveness of the business self-assessment process, and the loss data-collection and reporting activities.

### Insurance

One of the ways operational loss is mitigated is through insurance maintained by the Firm. The Firm purchases insurance to be in compliance with local laws and regulations, as well as to serve other needs. Insurance may also be required by third parties with whom the Firm does business. The insurance purchased is reviewed and approved by senior management.

### Cybersecurity

The Firm devotes significant resources to maintain and regularly update its systems and processes that are designed to protect the security of the Firm's computer systems, software, networks and other technology assets against attempts by third parties to obtain unauthorized access to confidential information, destroy data, disrupt or degrade service, sabotage systems or cause other damage. The Firm and several other U.S. financial institutions continue to experience significant distributed denial-of-service attacks from technically sophisticated and well-resourced third parties which are intended to disrupt consumer online banking services. The Firm has also experienced other attempts to breach the security of the Firm's systems and data. These cyberattacks have not, to date, resulted in any material disruption of the Firm's operations, material harm to the Firm's customers, and have not had a material adverse effect on the Firm's results of operations.

### Business resiliency

JPMorgan Chase's global resiliency and crisis management program is intended to ensure that the Firm has the ability to recover its critical business functions and supporting assets (i.e., staff, technology and facilities) in the event of a business interruption, and to remain in compliance with global laws and regulations as they relate to resiliency risk. The program includes corporate governance, awareness and training, as well as strategic and tactical initiatives to ensure that risks are properly identified, assessed, and managed.

The Firm's Global Resiliency team has established comprehensive and qualitative tracking and reporting of resiliency plans in order to proactively anticipate and manage various potential disruptive circumstances such as severe weather, technology and communications outages, flooding, mass transit shutdowns and terrorist threats, among others. The resiliency measures utilized by the Firm include backup infrastructure for data centers, a geographically distributed workforce, dedicated recovery facilities, ensuring technological capabilities to support remote work capacity for displaced staff and accommodation of employees at alternate locations. JPMorgan Chase continues to coordinate its global resiliency program across the Firm and mitigate business continuity risks by reviewing and testing recovery procedures. The strength and proficiency of the Firm's global resiliency program has played an integral role in maintaining the Firm's business operations during and quickly after various events that have resulted in business interruptions, such as Superstorm Sandy and Hurricane Isaac in the U.S., monsoon rains in the Philippines, tsunamis in Asia, and earthquakes in Latin America.





## LEGAL, FIDUCIARY AND REPUTATION RISK MANAGEMENT

The Firm's success depends not only on its prudent management of the liquidity, credit, market, principal, and operational risks that are part of its business risk, but equally on the maintenance among its many constituents —customers and clients, investors, regulators, as well as the general public — of a reputation for business practices of the highest quality. Attention to reputation has always been a key aspect of the Firm's practices, and maintenance of the Firm's reputation is the responsibility of each individual employee at the Firm. JPMorgan Chase bolsters this individual responsibility in many ways, including through the Firm's Code of Conduct (the "Code"), which is based on the Firm's fundamental belief that no one should ever sacrifice integrity – or give the impression that he or she has – even if one thinks it would help the Firm's business. The Code requires prompt reporting of any known or suspected violation of the Code, any internal Firm policy, or any law or regulation applicable to the Firm's business. It also requires the reporting of any illegal conduct, or conduct that violates the underlying principles of the Code, by any of the Firm's customers, suppliers, contract workers, business partners or agents. Concerns may be reported anonymously and the Firm prohibits retaliation against employees for the good faith reporting of any actual or suspected violations of the Code.

In addition to training of employees with regard to the principles and requirements of the Code, and requiring annual affirmation by each employee of compliance with the Code, the Firm has established policies and procedures, and has in place various oversight functions, intended to promote the Firm's culture of "doing the right thing." These

include a Conflicts Office which examines wholesale transactions with the potential to create conflicts of interest for the Firm and a Reputation Risk Office that reviews transactions or activities that may give rise to reputation risk for the Firm. Each line of business also has a risk committee which includes in its mandate the oversight of reputational risks in its business that may produce significant losses or reputational damage to the Firm.

### Fiduciary Risk Management

Fiduciary Risk Management is part of the relevant line-of-business risk committees. Senior business, legal and compliance management, who have particular responsibility for fiduciary issues, work with the relevant businesses' risk committees with the goal of ensuring that the businesses providing investment or risk management products or services that give rise to fiduciary duties to clients perform at the appropriate standard relative to their fiduciary relationship with a client. Of particular focus are the policies and practices that address a business' responsibilities to a client, including performance and service requirements and expectations; client suitability determinations; and disclosure obligations and communications. In this way, the relevant line-of-business risk committees provide oversight of the Firm's efforts to monitor, measure and control the performance and risks that may arise in the delivery of products or services to clients that give rise to such fiduciary duties, as well as those stemming from any of the Firm's fiduciary responsibilities under the Firm's various employee benefit plans.

## Management's discussion and analysis

## CRITICAL ACCOUNTING ESTIMATES USED BY THE FIRM

JPMorgan Chase's accounting policies and use of estimates are integral to understanding its reported results. The Firm's most complex accounting estimates require management's judgment to ascertain the value of assets and liabilities. The Firm has established detailed policies and control procedures intended to ensure that valuation methods, including any judgments made as part of such methods, are well-controlled, independently reviewed and applied consistently from period to period. In addition, the policies and procedures are intended to ensure that the process for changing methodologies occurs in an appropriate manner. The Firm believes its estimates for determining the value of its assets and liabilities are appropriate. The following is a brief description of the Firm's critical accounting estimates involving significant valuation judgments.

## Allowance for credit losses

JPMorgan Chase's allowance for credit losses covers the retained consumer and wholesale loan portfolios, as well as the Firm's consumer and wholesale lending-related commitments. The allowance for loan losses is intended to adjust the value of the Firm's loan assets to reflect probable credit losses inherent in the loan portfolio as of the balance sheet date. Similarly, the allowance for lending-related commitments is established to cover probable credit losses inherent in the lending-related commitments portfolio as of the balance sheet date.

The allowance for loan losses includes an asset-specific component, a formula-based component and a component related to PCI loans. The asset-specific allowance for loan losses for each of the Firm's portfolio segments is generally measured as the difference between the recorded investment in the impaired loan and the present value of the cash flows expected to be collected, discounted at the loan's original effective interest rate. Estimating the timing and amounts of future cash flows is highly judgmental as these cash flow projections further rely upon estimates such as redefault rates, loss severities, the amounts and timing of prepayments and other factors that are reflective of current and expected future market conditions. These estimates are, in turn, dependent on factors such as the level of future home prices, the duration of current weak overall economic conditions, and other macroeconomic and portfolio-specific factors. All of these estimates and assumptions require significant management judgment and certain assumptions are highly subjective.

For further discussion of the methodologies used in establishing the Firm's allowance for credit losses, see Allowance for Credit Losses on pages 159–162 and Note 15 on pages 276–279 of this Annual Report.

The determination of the formula-based allowance for credit losses also involves significant judgment on a number of matters, as discussed below.

## Consumer loans and lending-related commitments, excluding PCI loans

The formula-based allowance for credit losses for the consumer portfolio, including credit card, is calculated by applying statistical expected loss factors to outstanding principal balances over an estimated loss emergence period to arrive at an estimate of losses in the portfolio. The loss emergence period represents the time period between the date at which the loss is estimated to have been incurred and the ultimate realization of that loss (through a charge-off). Estimated loss emergence periods may vary by product and may change over time; management applies judgment in estimating loss emergence periods, using available credit information and trends. In addition, management applies judgment to the statistical loss estimates for each loan portfolio category, using delinquency trends and other risk characteristics to estimate probable credit losses inherent in the portfolio. Management uses additional statistical methods and considers portfolio and collateral valuation trends to review the appropriateness of the primary statistical loss estimate.

The statistical calculation is then adjusted to take into consideration model imprecision, external factors and current economic events that have occurred but that are not yet reflected in the factors used to derive the statistical calculation; these adjustments are accomplished in part by analyzing the historical loss experience for each major product segment. In the current economic environment, it is difficult to predict whether historical loss experience is indicative of future loss levels. Management applies judgment in making this adjustment, taking into account uncertainties associated with current macroeconomic and political conditions, quality of underwriting standards, borrower behavior, the estimated effects of the mortgage foreclosure-related settlement with federal and state officials, uncertainties regarding the ultimate success of loan modifications, the potential impact of payment recasts within the

HELOC portfolio, and other relevant internal and external factors affecting the credit quality of the portfolio. In certain instances, the interrelationships between these factors create further uncertainties. For example, the performance of a HELOC that experiences a payment recast may be affected by both the quality of underwriting standards applied in originating the loan and the general economic conditions in effect at the time of the payment recast. For junior lien products, management considers the delinquency and/or modification status of any senior liens in determining the adjustment. The application of different inputs into the statistical calculation, and the assumptions used by management to adjust the statistical calculation, are subject to management judgment, and emphasizing one input or assumption over another, or considering other

inputs or assumptions, could affect the estimate of the allowance for loan losses for the consumer credit portfolio. Overall, the allowance for credit losses for the consumer portfolio, including credit card, is sensitive to changes in the economic environment, delinquency status, the realizable value of collateral, FICO scores, borrower behavior and other risk factors. Significant judgment is required to estimate the duration of current weak overall economic conditions, as well as the impact on housing prices and the labor market. The allowance for credit losses is highly sensitive to both home prices and unemployment rates, and in the current market it is difficult to estimate how potential changes in one or both of these factors might affect the allowance for credit losses. For example, while both factors are important determinants of overall allowance levels, changes in one factor or the other may not occur at the same rate, or changes may be directionally inconsistent such that improvement in one factor may offset deterioration in the other. In addition, changes in these factors would not necessarily be consistent across all geographies or product types. Finally, it is difficult to predict the extent to which changes in both or either of these factors would ultimately affect the frequency of losses, the severity of losses or both.

#### PCI loans

In connection with the Washington Mutual transaction, JPMorgan Chase acquired certain PCI loans, which are accounted for as described in Note 14 on pages 250–275 of this Annual Report. The allowance for loan losses for the PCI portfolio is based on quarterly estimates of the amount of principal and interest cash flows expected to be collected over the estimated remaining lives of the loans.

These cash flow projections are based on estimates regarding default rates, loss severities, the amounts and timing of prepayments and other factors that are reflective of current and expected future market conditions. These estimates are dependent on assumptions regarding the level of future home price declines, and the duration of current weak overall economic conditions, among other factors. These estimates and assumptions require significant management judgment and certain assumptions are highly subjective.

#### Wholesale loans and lending-related commitments

The Firm's methodology for determining the allowance for loan losses and the allowance for lending-related commitments requires the early identification of credits that are deteriorating. The Firm uses a risk-rating system to determine the credit quality of its wholesale loans. Wholesale loans are reviewed for information affecting the obligor's ability to fulfill its obligations. In assessing the risk rating of a particular loan, among the factors considered are the obligor's debt capacity and financial flexibility, the level of the obligor's earnings, the amount and sources for repayment, the level and nature of contingencies, management strength, and the industry and geography in which the obligor operates. These factors are based on an

evaluation of historical and current information and involve subjective assessment and interpretation. Emphasizing one factor over another or considering additional factors could affect the risk rating assigned by the Firm to that loan. The Firm applies its judgment to establish loss factors used in calculating the allowances. Wherever possible, the Firm uses independent, verifiable data or the Firm's own historical loss experience in its models for estimating the allowances. Many factors can affect estimates of loss, including volatility of loss given default, probability of default and rating migrations. Consideration is given as to the particular source of external data used as well as the time period to which loss data relates (for example, point-in-time loss estimates and estimates that reflect longer views of the credit cycle). Finally, differences in loan characteristics between the Firm's specific loan portfolio and those reflected in the external data could also affect loss estimates. The application of different inputs would change the amount of the allowance for credit losses determined appropriate by the Firm.

Management also applies its judgment to adjust the loss factors derived, taking into consideration model imprecision, external factors and economic events that have occurred but are not yet reflected in the loss factors. Historical experience of both loss given default and probability of default are considered when estimating these adjustments. Factors related to concentrated and deteriorating industries also are incorporated where relevant. These estimates are based on management's view of uncertainties that relate to current macroeconomic and political conditions, quality of underwriting standards and other relevant internal and external factors affecting the credit quality of the current portfolio.

#### Allowance for credit losses sensitivity

As noted above, the Firm's allowance for credit losses is sensitive to numerous factors, depending on the portfolio. Changes in economic conditions or in the Firm's assumptions could affect the Firm's estimate of probable credit losses inherent in the portfolio at the balance sheet date. For example, deterioration in the following inputs would have the following effects on the Firm's modeled loss estimates as of December 31, 2012, without consideration of any offsetting or correlated effects of other inputs in the Firm's allowance for loan losses:

A 5% decline in housing prices from current levels, accompanied by an assumed corresponding change in the unemployment rate, for the residential real estate portfolio, excluding PCI loans, could result in an increase to modeled annual loss estimates of approximately \$200 million.

A 5% decline in housing prices from current levels, accompanied by an assumed corresponding change in the unemployment rate, could result in an increase in credit loss estimates for PCI loans of approximately \$600 million.

## Management's discussion and analysis

A 50 basis point deterioration in forecasted credit card loss rates could imply an increase to modeled annualized credit card loan loss estimates of approximately \$800 million.

A one-notch downgrade in the Firm's internal risk ratings for its entire wholesale loan portfolio could imply an increase in the Firm's modeled loss estimates of approximately \$2.1 billion.

The purpose of these sensitivity analyses is to provide an indication of the isolated impacts of hypothetical alternative assumptions on modeled loss estimates. The changes in the inputs presented above are not intended to imply management's expectation of future deterioration of those risk factors.

These analyses are not intended to estimate changes in the overall allowance for loan losses, which would also be influenced by the judgment management applies to the modeled loss estimates to reflect the uncertainty and imprecision of these modeled loss estimates based on then current circumstances and conditions.

It is difficult to estimate how potential changes in specific factors might affect the allowance for credit losses because management considers a variety of factors and inputs in estimating the allowance for credit losses. Changes in these factors and inputs may not occur at the same rate and may not be consistent across all geographies or product types, and changes in factors may be directionally inconsistent, such that improvement in one factor may offset deterioration in other factors. In addition, it is difficult to predict how changes in specific economic conditions or assumptions could affect borrower behavior or other factors considered by management in estimating the allowance for credit losses. Given the process the Firm follows in evaluating the risk factors related to its loans, including risk ratings, home price assumptions, and credit card loss estimates, management believes that its current estimate of the allowance for credit loss is appropriate.

## Fair value of financial instruments, MSRs and commodities inventory

JPMorgan Chase carries a portion of its assets and liabilities at fair value. The majority of such assets and liabilities are measured at fair value on a recurring basis. Certain assets and liabilities are measured at fair value on a nonrecurring basis, including certain mortgage, home equity and other loans, where the carrying value is based on the fair value of the underlying collateral.

## Assets measured at fair value

The following table includes the Firm's assets measured at fair value and the portion of such assets that are classified within level 3 of the valuation hierarchy. For further information, see Note 3 on pages 196–214 of this

Annual Report.

December 31, 2012

(in billions, except ratio data)

	Total assets at fair value	Total level 3 assets	
Trading debt and equity instruments	\$375.0	\$25.6	
Derivative receivables	75.0	23.3	
Trading assets	450.0	48.9	
AFS securities	371.1	28.9	
Loans	2.6	2.3	
MSRs	7.6	7.6	
Private equity investments	7.8	7.2	
Other	43.1	4.2	
Total assets measured at fair value on a recurring basis	882.2	99.1	
Total assets measured at fair value on a nonrecurring basis	5.1	4.4	
Total assets measured at fair value	\$887.3	\$103.5	(a)
Total Firm assets	\$2,359.1		
Level 3 assets as a percentage of total Firm assets		4.4	%
Level 3 assets as a percentage of total Firm assets at fair value		11.7	%

## Valuation

Fair value is defined as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. The Firm has an established and well-documented process for determining fair value, for further details see Note 3 on pages 196–214 of this Annual Report. Fair value is

based on quoted market prices, where available. If listed prices or quotes are not available for an instrument or a similar instrument, fair value is generally based on models that consider relevant transaction characteristics (such as maturity) and use as inputs market-based or independently sourced parameters.

Estimating fair value requires the application of judgment. The type and level of judgment required is largely dependent on the amount of observable market information available to the Firm. For instruments valued using internally developed models that use significant unobservable inputs and are therefore classified within level 3 of the valuation hierarchy, judgments used to estimate fair value are more significant than those required when estimating the fair value of instruments classified within levels 1 and 2.

In arriving at an estimate of fair value for an instrument within level 3, management must first determine the appropriate model to use. Second, due to the lack of observability of significant inputs, management must assess all relevant empirical data in deriving valuation inputs — including, for example, transaction details, yield curves, interest rates, prepayment rates, default rates, volatilities, correlations, equity or debt prices, valuations of comparable instruments, foreign exchange rates and credit



curves. Finally, management judgment must be applied to assess the appropriate level of valuation adjustments to reflect counterparty credit quality, the Firm's credit-worthiness, liquidity considerations, unobservable parameters, and for certain portfolios that meet specified criteria, the size of the net open risk position. The judgments made are typically affected by the type of product and its specific contractual terms, and the level of liquidity for the product or within the market as a whole. For further discussion of the valuation of level 3 instruments, including unobservable inputs used, see Note 3 on pages 196–214 of this Annual Report.

Imprecision in estimating unobservable market inputs or other factors can affect the amount of gain or loss recorded for a particular position. Furthermore, while the Firm believes its valuation methods are appropriate and consistent with those of other market participants, the methods and assumptions used reflect management judgment and may vary across the Firm's businesses and portfolios.

The Firm uses various methodologies and assumptions in the determination of fair value. The use of different methodologies or assumptions to those used by the Firm could result in a different estimate of fair value at the reporting date. For a detailed discussion of the Firm's valuation process and hierarchy, and its determination of fair value for individual financial instruments, see Note 3 on pages 196–214 of this Annual Report.

#### Goodwill impairment

Under U.S. GAAP, goodwill must be allocated to reporting units and tested for impairment at least annually. The Firm's process and methodology used to conduct goodwill impairment testing is described in Note 17 on pages 291–295 of this Annual Report.

Management applies significant judgment when estimating the fair value of its reporting units. Estimates of fair value are dependent upon estimates of (a) the future earnings potential of the Firm's reporting units, including the estimated effects of regulatory and legislative changes, such as the Dodd-Frank Act, the CARD Act, and limitations on non-sufficient funds and overdraft fees and (b) the relevant cost of equity and long-term growth rates. Imprecision in estimating these factors can affect the estimated fair value of the reporting units.

Based upon the updated valuations for all of its reporting units, the Firm concluded that goodwill allocated to its reporting units was not impaired at December 31, 2012, nor was any goodwill written off during 2012. The fair values of almost all of the Firm's reporting units exceeded their carrying values by substantial amounts (excess fair value as a percent of carrying value ranged from approximately 30% to 180%) and did not indicate a significant risk of goodwill impairment based on current projections and valuations.

However, the fair value of the Firm's mortgage lending business exceeded its carrying value by less than 10% and the associated goodwill remains at an elevated risk for goodwill impairment due to its exposure to U.S. consumer credit risk and the effects of regulatory and legislative changes. The assumptions used in the valuation of this business include (a) estimates of future cash flows for the business (which are dependent on portfolio outstanding balances, net interest margin, operating expense, credit losses and the amount of capital necessary given the risk of business activities), and (b) the cost of equity used to discount those cash flows to a present value. Each of these factors requires significant judgment and the assumptions used are based on management's best estimate and most current projections, derived from the Firm's business forecasting process reviewed with senior management.

The projections for all of the Firm's reporting units are consistent with the short-term assumptions discussed in the Business Outlook on pages 68–69 of this Annual Report, and, in the longer term, incorporate a set of macroeconomic assumptions and the Firm's best estimates of long-term growth and returns of its businesses. Where possible, the Firm uses third-party and peer data to benchmark its assumptions and estimates.

Deterioration in economic market conditions, increased estimates of the effects of recent regulatory or legislative changes, or additional regulatory or legislative changes may result in declines in projected business performance beyond management's current expectations. For example, in the Firm's mortgage lending business, such declines could result from increases in costs to resolve foreclosure-related matters or from deterioration in economic conditions that result in increased credit losses, including decreases in home prices beyond management's current expectations. In addition, the earnings or estimated cost of equity of the Firm's capital markets businesses could also be affected by regulatory or legislative changes. Declines in business performance, increases in equity capital requirements, or increases in the estimated cost of equity, could cause the estimated fair values of the Firm's reporting units or their

associated goodwill to decline, which could result in a material impairment charge to earnings in a future period related to some portion of the associated goodwill.

For additional information on goodwill, see Note 17 on pages 291–295 of this Annual Report.

## Management's discussion and analysis

## Income taxes

JPMorgan Chase is subject to the income tax laws of the various jurisdictions in which it operates, including U.S. federal, state and local and non-U.S. jurisdictions. These laws are often complex and may be subject to different interpretations. To determine the financial statement impact of accounting for income taxes, including the provision for income tax expense and unrecognized tax benefits, JPMorgan Chase must make assumptions and judgments about how to interpret and apply these complex tax laws to numerous transactions and business events, as well as make judgments regarding the timing of when certain items may affect taxable income in the U.S. and non-U.S. tax jurisdictions.

JPMorgan Chase's interpretations of tax laws around the world are subject to review and examination by the various taxing authorities in the jurisdictions where the Firm operates, and disputes may occur regarding its view on a tax position. These disputes over interpretations with the various taxing authorities may be settled by audit, administrative appeals or adjudication in the court systems of the tax jurisdictions in which the Firm operates. JPMorgan Chase regularly reviews whether it may be assessed additional income taxes as a result of the resolution of these matters, and the Firm records additional reserves as appropriate. In addition, the Firm may revise its estimate of income taxes due to changes in income tax laws, legal interpretations and tax planning strategies. It is possible that revisions in the Firm's estimate of income taxes may materially affect the Firm's results of operations in any reporting period. The Firm's provision for income taxes is composed of current and deferred taxes. Deferred taxes arise from differences between assets and liabilities measured for financial reporting versus income tax return purposes. Deferred tax assets are recognized if, in management's judgment, their realizability is determined to be more likely than not. The Firm has also recognized deferred tax assets in connection with certain net operating losses. The Firm performs regular reviews to ascertain whether deferred tax assets are realizable. These reviews include management's estimates and assumptions regarding future taxable income, which also incorporates various tax planning strategies, including strategies that may be available to utilize net operating losses before they expire. In connection with these reviews, if it is determined that a deferred tax asset is not realizable, a valuation allowance is established. The valuation allowance may be reversed in a subsequent reporting period if the Firm determines that, based on revised estimates of future taxable income or changes in tax planning strategies, it is more likely than not that all or part of the deferred tax asset will become realizable. As of December 31, 2012, management has determined it is more likely than not that the Firm will realize its deferred tax assets, net of the existing valuation allowance.

JPMorgan Chase does not provide U.S. federal income taxes on the undistributed earnings of certain non-U.S. subsidiaries, to the extent that such earnings have been reinvested abroad for an indefinite period of time. Changes to the income tax rates applicable to these non-U.S. subsidiaries may have a material impact on the effective tax rate in a future period if such changes were to occur.

The Firm adjusts its unrecognized tax benefits as necessary when additional information becomes available. Uncertain tax positions that meet the more-likely-than-not recognition threshold are measured to determine the amount of benefit to recognize. An uncertain tax position is measured at the largest amount of benefit that management believes is more likely than not to be realized upon settlement. It is possible that the reassessment of JPMorgan Chase's unrecognized tax benefits may have a material impact on its effective tax rate in the period in which the reassessment occurs. For additional information on income taxes, see Note 26 on pages 303–305 of this Annual Report.

## Litigation reserves

For a description of the significant estimates and judgments associated with establishing litigation reserves, see Note 31 on pages 316–325 of this Annual Report.

## ACCOUNTING AND REPORTING DEVELOPMENTS

### Fair value measurement and disclosures

In May 2011, the Financial Accounting Standards Board (“FASB”) issued guidance that amends the requirements for fair value measurement and disclosure. The guidance changes and clarifies certain existing requirements related to portfolios of financial instruments and valuation adjustments, requires additional disclosures for fair value measurements categorized in level 3 of the fair value hierarchy (including disclosure of the range of inputs used in certain valuations), and requires additional disclosures for certain financial instruments that are not carried at fair value. The guidance was effective in the first quarter of 2012, and the Firm adopted the new guidance, effective January 1, 2012. The application of this guidance did not have a material effect on the Firm’s Consolidated Balance Sheets or results of operations.

### Accounting for repurchase and similar agreements

In April 2011, the FASB issued guidance that amends the criteria used to assess whether repurchase and similar agreements should be accounted for as financings or sales (purchases) with forward agreements to repurchase (resell). Specifically, the guidance eliminates circumstances in which the lack of adequate collateral maintenance requirements could result in a repurchase agreement being accounted for as a sale. The guidance was effective for new transactions or existing transactions that were modified beginning January 1, 2012. The Firm has accounted for its repurchase and similar agreements as secured financings, and therefore, the application of this guidance did not have an impact on the Firm’s Consolidated Balance Sheets or results of operations.

### Presentation of other comprehensive income

In June 2011, the FASB issued guidance that modifies the presentation of other comprehensive income in the Consolidated Financial Statements. The guidance requires that items of net income, items of other comprehensive income, and total comprehensive income be presented in one continuous statement or in two separate but consecutive statements. The guidance was effective in the first quarter of 2012, and the Firm adopted the new guidance by electing the two-statement approach, effective January 1, 2012. The application of this guidance only affected the presentation of the Consolidated Financial Statements and had no impact on the Firm’s Consolidated Balance Sheets or results of operations.

In February 2013, the FASB issued guidance that requires enhanced disclosures of any reclassifications out of accumulated other comprehensive income. The guidance is effective in the first quarter of 2013. The application of this guidance will impact disclosures and will have no impact on the Firm’s Consolidated Balance Sheets or results of operations.

### Balance sheet netting

In December 2011, the FASB issued guidance that requires enhanced disclosures about certain financial assets and liabilities that are subject to enforceable master netting agreements or similar agreements, or that have otherwise been offset on the balance sheet under certain specific conditions that permit net presentation. In January 2013, the FASB clarified that the scope of this guidance is limited to derivatives, repurchase and reverse repurchase agreements, and securities borrowing and lending transactions. The guidance will become effective in the first quarter of 2013. The application of this guidance will only affect the disclosure of these instruments and will have no impact on the Firm’s Consolidated Balance Sheets or results of operations.

## Management's discussion and analysis

## NONEXCHANGE TRADED COMMODITY DERIVATIVE CONTRACTS AT FAIR VALUE

In the normal course of business, JPMorgan Chase trades nonexchange-traded commodity derivative contracts. To determine the fair value of these contracts, the Firm uses various fair value estimation techniques, primarily based on internal models with significant observable market parameters. The Firm's nonexchange-traded commodity derivative contracts are primarily energy-related.

The following table summarizes the changes in fair value for nonexchange-traded commodity derivative contracts for the year ended December 31, 2012.

Year ended December 31, 2012 (in millions)	Asset position	Liability position
Net fair value of contracts outstanding at January 1, 2012	\$ 13,122	\$ 13,517
Effect of legally enforceable master netting agreements	33,495	35,695
Gross fair value of contracts outstanding at January 1, 2012	46,617	49,212
Contracts realized or otherwise settled	(23,889)	(26,321)
Fair value of new contracts	19,357	21,502
Changes in fair values attributable to changes in valuation techniques and assumptions	—	—
Other changes in fair value	(4,934)	(3,072)
Gross fair value of contracts outstanding at December 31, 2012	37,151	41,321
Effect of legally enforceable master netting agreements	(28,856)	(30,505)
Net fair value of contracts outstanding at December 31, 2012	\$ 8,295	\$ 10,816

The following table indicates the maturities of nonexchange-traded commodity derivative contracts at December 31, 2012.

December 31, 2012 (in millions)	Asset position	Liability position
Maturity less than 1 year	\$ 21,878	\$ 23,129
Maturity 1–3 years	12,029	12,424
Maturity 4–5 years	1,947	2,155
Maturity in excess of 5 years	1,297	3,613
Gross fair value of contracts outstanding at December 31, 2012	37,151	41,321
Effect of legally enforceable master netting agreements	(28,856)	(30,505)
Net fair value of contracts outstanding at December 31, 2012	\$ 8,295	\$ 10,816

## FORWARD-LOOKING STATEMENTS

From time to time, the Firm has made and will make forward-looking statements. These statements can be identified by the fact that they do not relate strictly to historical or current facts. Forward-looking statements often use words such as “anticipate,” “target,” “expect,” “estimate,” “intend,” “plan,” “goal,” “believe,” or other words of similar meaning. Forward-looking statements provide JPMorgan Chase’s current expectations or forecasts of future events, circumstances, results or aspirations. JPMorgan Chase’s disclosures in this Annual Report contain forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. The Firm also may make forward-looking statements in its other documents filed or furnished with the Securities and Exchange Commission. In addition, the Firm’s senior management may make forward-looking statements orally to analysts, investors, representatives of the media and others.

All forward-looking statements are, by their nature, subject to risks and uncertainties, many of which are beyond the Firm’s control. JPMorgan Chase’s actual future results may differ materially from those set forth in its forward-looking statements. While there is no assurance that any list of risks and uncertainties or risk factors is complete, below are certain factors which could cause actual results to differ from those in the forward-looking statements:

- Local, regional and international business, economic and political conditions and geopolitical events;
- Changes in laws and regulatory requirements, including as a result of recent financial services legislation;
- Changes in trade, monetary and fiscal policies and laws;
- Securities and capital markets behavior, including changes in market liquidity and volatility;
- Changes in investor sentiment or consumer spending or savings behavior;
- Ability of the Firm to manage effectively its capital and liquidity, including approval of its capital plans by banking regulators;
- Changes in credit ratings assigned to the Firm or its subsidiaries;
- Damage to the Firm’s reputation;
- Ability of the Firm to deal effectively with an economic slowdown or other economic or market disruption;
- Technology changes instituted by the Firm, its counterparties or competitors;
- Mergers and acquisitions, including the Firm’s ability to integrate acquisitions;
- Ability of the Firm to develop new products and services, and the extent to which products or services previously sold by the Firm (including but not limited to mortgages and asset-backed securities) require the Firm to incur liabilities or absorb losses not contemplated at their initiation or origination;
- Ability of the Firm to address enhanced bank regulatory and other governmental agency requirements affecting its mortgage business;
- Ability of the Firm to implement successfully the actions required under the various Consent Orders entered into with its banking regulators;
- Acceptance of the Firm’s new and existing products and services by the marketplace and the ability of the Firm to increase market share;
- Ability of the Firm to attract and retain employees;
- Ability of the Firm to control expense;
- Competitive pressures;
- Changes in the credit quality of the Firm’s customers and counterparties;
- Adequacy of the Firm’s risk management framework, disclosure controls and procedures and internal control over financial reporting, and the effectiveness of such controls and procedures in preventing control lapses or deficiencies;
- Efficacy of the models used by the Firm in valuing, measuring, monitoring and managing positions and risk;
- Adverse judicial or regulatory proceedings;
- Changes in applicable accounting policies;
- Ability of the Firm to determine accurate values of certain assets and liabilities;
- Occurrence of natural or man-made disasters or calamities or conflicts, including any effect of any such disasters, calamities or conflicts on the Firm’s power generation facilities and the Firm’s other commodity-related activities;
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Ability of the Firm to maintain the security of its financial, accounting, technology, data processing and other operating systems and facilities;

The other risks and uncertainties detailed in Part I, Item 1A: Risk Factors in the Firm's Annual Report on Form 10-K for the year ended December 31, 2012.

Any forward-looking statements made by or on behalf of the Firm speak only as of the date they are made, and JPMorgan Chase does not undertake to update forward-looking statements to reflect the impact of circumstances or events that arise after the date the forward-looking statements were made. The reader should, however, consult any further disclosures of a forward-looking nature the Firm may make in any subsequent Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q, or Current Reports on Form 8-K.

Management's report on internal control over financial reporting

Management of JPMorgan Chase & Co. ("JPMorgan Chase" or the "Firm") is responsible for establishing and maintaining adequate internal control over financial reporting. Internal control over financial reporting is a process designed by, or under the supervision of, the Firm's principal executive and principal financial officers, or persons performing similar functions, and effected by JPMorgan Chase's Board of Directors, management and other personnel, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with accounting principles generally accepted in the United States of America. JPMorgan Chase's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records, that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the Firm's assets; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the Firm are being made only in accordance with authorizations of JPMorgan Chase's management and directors; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of the Firm's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Management has completed an assessment of the effectiveness of the Firm's internal control over financial reporting as of December 31, 2012. In making the assessment, management used the framework in "Internal Control - Integrated Framework" promulgated by the Committee of Sponsoring Organizations of the Treadway Commission, commonly referred to as the "COSO" criteria.

Based upon the assessment performed, management concluded that as of December 31, 2012, JPMorgan Chase's internal control over financial reporting was effective based upon the COSO criteria. Additionally, based upon management's assessment, the Firm determined that there were no material weaknesses in its internal control over financial reporting as of December 31, 2012.

The effectiveness of the Firm's internal control over financial reporting as of December 31, 2012, has been audited by PricewaterhouseCoopers LLP, an independent registered public accounting firm, as stated in their report which appears herein.

James Dimon  
Chairman and Chief Executive Officer

Marianne Lake  
Executive Vice President and Chief Financial Officer

February 28, 2013



Report of independent registered public accounting firm

To the Board of Directors and Stockholders of JPMorgan Chase & Co.:

In our opinion, the accompanying consolidated balance sheets and the related consolidated statements of income, comprehensive income, changes in stockholders' equity and cash flows present fairly, in all material respects, the financial position of JPMorgan Chase & Co. and its subsidiaries (the "Firm") at December 31, 2012 and 2011, and the results of their operations and their cash flows for each of the three years in the period ended December 31, 2012 in conformity with accounting principles generally accepted in the United States of America. Also in our opinion, the Firm maintained, in all material respects, effective internal control over financial reporting as of December 31, 2012, based on criteria established in Internal Control - Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). The Firm's management is responsible for these financial statements, for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying "Management's report on internal control over financial reporting". Our responsibility is to express opinions on these financial statements and on the Firm's internal control over financial reporting based on our integrated audits. We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the financial statements are free of material misstatement and whether effective internal control over financial reporting was maintained in all material respects. Our audits of the financial statements included examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements, assessing the accounting principles used and significant estimates made by management, and evaluating the overall financial statement presentation. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a

material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audits also included performing such other procedures as we considered necessary in the circumstances. We believe that our audits provide a reasonable basis for our opinions.

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (ii) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

February 28, 2013

PricewaterhouseCoopers LLP 300 Madison Avenue New York, NY 10017

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## Consolidated statements of income

Year ended December 31, (in millions, except per share data)	2012	2011	2010
Revenue			
Investment banking fees	\$5,808	\$5,911	\$6,190
Principal transactions	5,536	10,005	10,894
Lending- and deposit-related fees	6,196	6,458	6,340
Asset management, administration and commissions	13,868	14,094	13,499
Securities gains <sup>(a)</sup>	2,110	1,593	2,965
Mortgage fees and related income	8,687	2,721	3,870
Card income	5,658	6,158	5,891
Other income	4,258	2,605	2,044
Noninterest revenue	52,121	49,545	51,693
Interest income	56,063	61,293	63,782
Interest expense	11,153	13,604	12,781
Net interest income	44,910	47,689	51,001
Total net revenue	97,031	97,234	102,694
Provision for credit losses	3,385	7,574	16,639
Noninterest expense			
Compensation expense	30,585	29,037	28,124
Occupancy expense	3,925	3,895	3,681
Technology, communications and equipment expense	5,224	4,947	4,684
Professional and outside services	7,429	7,482	6,767
Marketing	2,577	3,143	2,446
Other expense	14,032	13,559	14,558
Amortization of intangibles	957	848	936
Total noninterest expense	64,729	62,911	61,196
Income before income tax expense	28,917	26,749	24,859
Income tax expense	7,633	7,773	7,489
Net income	\$21,284	\$18,976	\$17,370
Net income applicable to common stockholders	\$19,877	\$17,568	\$15,764
Net income per common share data			
Basic earnings per share	\$5.22	\$4.50	\$3.98
Diluted earnings per share	5.20	4.48	3.96
Weighted-average basic shares	3,809.4	3,900.4	3,956.3
Weighted-average diluted shares	3,822.2	3,920.3	3,976.9
Cash dividends declared per common share	\$1.20	\$1.00	\$0.20
(a) The following other-than-temporary impairment losses are included in securities gains for the periods presented.			
Year ended December 31, (in millions)	2012	2011	2010
Debt securities the Firm does not intend to sell that have credit losses			
Total other-than-temporary impairment losses	\$(113)	\$(27)	\$(94)
Losses recorded in/(reclassified from) other comprehensive income	85	(49)	(6)
Total credit losses recognized in income	(28)	(76)	(100)

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Securities the Firm intends to sell	(15	)	—	—
Total other-than-temporary impairment losses recognized in income	\$(43	)	\$(76	) \$(100

The Notes to Consolidated Financial Statements are an integral part of these statements.

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## Consolidated statements of comprehensive income

Year ended December 31, (in millions)	2012	2011	2010
Net income	\$21,284	\$18,976	\$17,370
Other comprehensive income, after-tax			
Unrealized gains on AFS securities	3,303	1,067	610
Translation adjustments, net of hedges	(69)	) (279)	) 269
Cash flow hedges	69	(155)	) 25
Defined benefit pension and OPEB plans	(145)	) (690)	) 332
Total other comprehensive income, after-tax	3,158	(57)	) 1,236
Comprehensive income	\$24,442	\$18,919	\$18,606

The Notes to Consolidated Financial Statements are an integral part of these statements.

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Consolidated balance sheets

December 31, (in millions, except share data)	2012	2011
<b>Assets</b>		
Cash and due from banks	\$53,723	\$59,602
Deposits with banks	121,814	85,279
Federal funds sold and securities purchased under resale agreements (included \$24,258 and \$22,191 at fair value)	296,296	235,314
Securities borrowed (included \$10,177 and \$15,308 at fair value)	119,017	142,462
Trading assets (included assets pledged of \$108,784 and \$89,856)	450,028	443,963
Securities (included \$371,145 and \$364,781 at fair value and assets pledged of \$71,167 and \$94,691)	371,152	364,793
Loans (included \$2,555 and \$2,097 at fair value)	733,796	723,720
Allowance for loan losses	(21,936)	(27,609)
Loans, net of allowance for loan losses	711,860	696,111
Accrued interest and accounts receivable	60,933	61,478
Premises and equipment	14,519	14,041
Goodwill	48,175	48,188
Mortgage servicing rights	7,614	7,223
Other intangible assets	2,235	3,207
Other assets (included \$16,458 and \$16,499 at fair value and assets pledged of \$1,127 and \$1,316)	101,775	104,131
<b>Total assets<sup>(a)</sup></b>	<b>\$2,359,141</b>	<b>\$2,265,792</b>
<b>Liabilities</b>		
Deposits (included \$5,733 and \$4,933 at fair value)	\$1,193,593	\$1,127,806
Federal funds purchased and securities loaned or sold under repurchase agreements (included \$4,388 and \$6,817 at fair value)	240,103	213,532
Commercial paper	55,367	51,631
Other borrowed funds (included \$11,591 and \$9,576 at fair value)	26,636	21,908
Trading liabilities	131,918	141,695
Accounts payable and other liabilities (included \$36 and \$51 at fair value)	195,240	202,895
Beneficial interests issued by consolidated variable interest entities (included \$1,170 and \$1,250 at fair value)	63,191	65,977
Long-term debt (included \$30,788 and \$34,720 at fair value)	249,024	256,775
<b>Total liabilities<sup>(a)</sup></b>	<b>2,155,072</b>	<b>2,082,219</b>
<b>Commitments and contingencies (see Notes 29, 30 and 31 of this Annual Report)</b>		
<b>Stockholders' equity</b>		
Preferred stock (\$1 par value; authorized 200,000,000 shares: issued 905,750 and 780,000 shares)	9,058	7,800
Common stock (\$1 par value; authorized 9,000,000,000 shares; issued 4,104,933,895 shares)	4,105	4,105
Capital surplus	94,604	95,602
Retained earnings	104,223	88,315
Accumulated other comprehensive income/(loss)	4,102	944
Shares held in RSU Trust, at cost (479,126 and 852,906 shares)	(21)	(38)
Treasury stock, at cost (300,981,690 and 332,243,180 shares)	(12,002)	(13,155)
<b>Total stockholders' equity</b>	<b>204,069</b>	<b>183,573</b>
<b>Total liabilities and stockholders' equity</b>	<b>\$2,359,141</b>	<b>\$2,265,792</b>

(a) The following table presents information on assets and liabilities related to VIEs that are consolidated by the Firm at December 31, 2012 and 2011. The difference between total VIE assets and liabilities represents the Firm's

interests in those entities, which were eliminated in consolidation.

December 31, (in millions)	2012	2011
Assets		
Trading assets	\$ 11,966	\$ 12,079
Loans	82,723	86,754
All other assets	2,090	2,638
Total assets	\$96,779	\$ 101,471
Liabilities		
Beneficial interests issued by consolidated variable interest entities	\$63,191	\$65,977
All other liabilities	1,244	1,487
Total liabilities	\$64,435	\$67,464

The assets of the consolidated VIEs are used to settle the liabilities of those entities. The holders of the beneficial interests do not have recourse to the general credit of JPMorgan Chase. At both December 31, 2012 and 2011, the Firm provided limited program-wide credit enhancement of \$3.1 billion related to its Firm-administered multi-seller conduits, which are eliminated in consolidation. For further discussion, see Note 16 on pages 280–291 of this Annual Report.

The Notes to Consolidated Financial Statements are an integral part of these statements.

## Consolidated statements of changes in stockholders' equity

Year ended December 31, (in millions, except per share data)	2012	2011	2010
<b>Preferred stock</b>			
Balance at January 1	\$7,800	\$7,800	\$8,152
Issuance of preferred stock	1,258	—	—
Redemption of preferred stock	—	—	(352 )
Balance at December 31	9,058	7,800	7,800
<b>Common stock</b>			
Balance at January 1 and December 31	4,105	4,105	4,105
<b>Capital surplus</b>			
Balance at January 1	95,602	97,415	97,982
Shares issued and commitments to issue common stock for employee stock-based compensation awards, and related tax effects	(736 )	(1,688 )	706
Other	(262 )	(125 )	(1,273 )
Balance at December 31	94,604	95,602	97,415
<b>Retained earnings</b>			
Balance at January 1	88,315	73,998	62,481
Cumulative effect of changes in accounting principles	—	—	(4,376 )
Net income	21,284	18,976	17,370
<b>Dividends declared:</b>			
Preferred stock	(647 )	(629 )	(642 )
Common stock (\$1.20, \$1.00 and \$0.20 per share for 2012, 2011 and 2010, respectively)	(4,729 )	(4,030 )	(835 )
Balance at December 31	104,223	88,315	73,998
<b>Accumulated other comprehensive income/(loss)</b>			
Balance at January 1	944	1,001	(91 )
Cumulative effect of changes in accounting principles	—	—	(144 )
Other comprehensive (loss)/income	3,158	(57 )	1,236
Balance at December 31	4,102	944	1,001
<b>Shares held in RSU Trust, at cost</b>			
Balance at January 1	(38 )	(53 )	(68 )
Reissuance from RSU Trust	17	15	15
Balance at December 31	(21 )	(38 )	(53 )
<b>Treasury stock, at cost</b>			
Balance at January 1	(13,155 )	(8,160 )	(7,196 )
Purchase of treasury stock	(1,415 )	(8,741 )	(2,999 )
Reissuance from treasury stock	2,574	3,750	2,040
Share repurchases related to employee stock-based compensation awards	(6 )	(4 )	(5 )
Balance at December 31	(12,002 )	(13,155 )	(8,160 )
Total stockholders' equity	\$204,069	\$183,573	\$176,106

The Notes to Consolidated Financial Statements are an integral part of these statements.



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Consolidated statements of cash flows

Year ended December 31, (in millions)	2012	2011	2010
Operating activities			
Net income	\$21,284	\$18,976	\$17,370
Adjustments to reconcile net income to net cash provided by/(used in) operating activities:			
Provision for credit losses	3,385	7,574	16,639
Depreciation and amortization	4,190	4,257	4,029
Amortization of intangibles	957	848	936
Deferred tax expense/(benefit)	1,130	1,693	(968 )
Investment securities gains	(2,110 )	(1,593 )	(2,965 )
Stock-based compensation	2,545	2,675	3,251
Originations and purchases of loans held-for-sale	(34,026 )	(52,561 )	(37,085 )
Proceeds from sales, securitizations and paydowns of loans held-for-sale	33,202	54,092	40,155
Net change in:			
Trading assets	(5,379 )	36,443	(72,082 )
Securities borrowed	23,455	(18,936 )	(3,926 )
Accrued interest and accounts receivable	1,732	8,655	443
Other assets	(4,683 )	(15,456 )	(12,452 )
Trading liabilities	(3,921 )	7,905	19,344
Accounts payable and other liabilities	(13,069 )	35,203	17,325
Other operating adjustments	(3,613 )	6,157	6,234
Net cash provided by/(used in) operating activities	25,079	95,932	(3,752 )
Investing activities			
Net change in:			
Deposits with banks	(36,595 )	(63,592 )	41,625
Federal funds sold and securities purchased under resale agreements	(60,821 )	(12,490 )	(26,957 )
Held-to-maturity securities:			
Proceeds	4	6	7
Available-for-sale securities:			
Proceeds from maturities	112,633	86,850	92,740
Proceeds from sales	81,957	68,631	118,600
Purchases	(189,630)	(202,309)	(179,487)
Proceeds from sales and securitizations of loans held-for-investment	6,430	10,478	9,476
Other changes in loans, net	(30,491 )	(58,365 )	3,022
Net cash received from/(used in) business acquisitions or dispositions	88	102	(4,910 )
All other investing activities, net	(3,400 )	(63 )	(114 )
Net cash (used in)/provided by investing activities	(119,825)	(170,752)	54,002
Financing activities			
Net change in:			
Deposits	67,250	203,420	(9,637 )
Federal funds purchased and securities loaned or sold under repurchase agreements	26,546	(63,116 )	15,202
Commercial paper and other borrowed funds	9,315	7,230	(6,869 )
Beneficial interests issued by consolidated variable interest entities	345	1,165	2,426
Proceeds from long-term borrowings and trust preferred capital debt securities	86,271	54,844	55,181
Payments of long-term borrowings and trust preferred capital debt securities	(96,473 )	(82,078 )	(99,043 )
Excess tax benefits related to stock-based compensation	255	867	26
Redemption of preferred stock	—	—	(352 )
Proceeds from issuance of preferred stock	1,234	—	—

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Treasury stock and warrants repurchased	(1,653 )	(8,863 )	(2,999 )
Dividends paid	(5,194 )	(3,895 )	(1,486 )
All other financing activities, net	(189 )	(1,868 )	(1,666 )
Net cash provided by/(used in) financing activities	87,707	107,706	(49,217 )
Effect of exchange rate changes on cash and due from banks	1,160	(851 )	328
Net (decrease)/increase in cash and due from banks	(5,879 )	32,035	1,361
Cash and due from banks at the beginning of the period	59,602	27,567	26,206
Cash and due from banks at the end of the period	\$53,723	\$59,602	\$27,567
Cash interest paid	\$11,161	\$13,725	\$12,404
Cash income taxes paid, net	2,050	8,153	9,747

The Notes to Consolidated Financial Statements are an integral part of these statements.

## Notes to consolidated financial statements

## Note 1 – Basis of presentation

JPMorgan Chase & Co. (“JPMorgan Chase” or the “Firm”), a financial holding company incorporated under Delaware law in 1968, is a leading global financial services firm and one of the largest banking institutions in the United States of America (“U.S.”), with operations worldwide. The Firm is a leader in investment banking, financial services for consumers and small business, commercial banking, financial transaction processing, asset management and private equity. For a discussion of the Firm’s business segments, see Note 33 on pages 326–329 of this Annual Report. The accounting and financial reporting policies of JPMorgan Chase and its subsidiaries conform to accounting principles generally accepted in the U.S. (“U.S. GAAP”). Additionally, where applicable, the policies conform to the accounting and reporting guidelines prescribed by regulatory authorities.

Certain amounts reported in prior periods have been reclassified to conform with the current presentation.

## Consolidation

The Consolidated Financial Statements include the accounts of JPMorgan Chase and other entities in which the Firm has a controlling financial interest. All material intercompany balances and transactions have been eliminated. The Firm determines whether it has a controlling financial interest in an entity by first evaluating whether the entity is a voting interest entity or a variable interest entity (“VIE”).

## Voting Interest Entities

Voting interest entities are entities that have sufficient equity and provide the equity investors voting rights that enable them to make significant decisions relating to the entity’s operations. For these types of entities, the Firm’s determination of whether it has a controlling interest is primarily based on the amount of voting equity interests held. Entities in which the Firm has a controlling financial interest, through ownership of the majority of the entities’ voting equity interests, or through other contractual rights that give the Firm control, are consolidated by the Firm. Investments in companies in which the Firm has significant influence over operating and financing decisions (but does not own a majority of the voting equity interests) are accounted for (i) in accordance with the equity method of accounting (which requires the Firm to recognize its proportionate share of the entity’s net earnings), or (ii) at fair value if the fair value option was elected at the inception of the Firm’s investment. These investments are generally included in other assets, with income or loss included in other income.

Certain Firm-sponsored asset management funds are structured as limited partnerships or limited liability companies. For many of these entities, the Firm is the general partner or managing member, but the non-affiliated partners or members have the ability to remove the Firm as the general partner or managing member without cause (i.e., kick-out rights), based on a simple majority vote, or the non-affiliated partners or members have rights to participate in important decisions. Accordingly, the Firm does not consolidate these funds. In the limited cases where the nonaffiliated partners or members do not have substantive kick-out or participating rights, the Firm consolidates the funds.

The Firm’s investment companies make investments in both publicly-held and privately-held entities, including investments in buyouts, growth equity and venture opportunities. These investments are accounted for under investment company guidelines and accordingly, irrespective of the percentage of equity ownership interests held, are carried on the Consolidated Balance Sheets at fair value, and are recorded in other assets.

## Variable Interest Entities

VIEs are entities that, by design, either (1) lack sufficient equity to permit the entity to finance its activities without additional subordinated financial support from other parties, or (2) have equity investors that do not have the ability to make significant decisions relating to the entity’s operations through voting rights, or do not have the obligation to absorb the expected losses, or do not have the right to receive the residual returns of the entity.

The most common type of VIE is a special purpose entity (“SPE”). SPEs are commonly used in securitization transactions in order to isolate certain assets and distribute the cash flows from those assets to investors. The basic SPE structure involves a company selling assets to the SPE; the SPE funds the purchase of those assets by issuing securities to investors. The legal documents that govern the transaction specify how the cash earned on the assets must be allocated to the SPE’s investors and other parties that have rights to those cash flows. SPEs are generally structured

to insulate investors from claims on the SPE's assets by creditors of other entities, including the creditors of the seller of the assets.

The primary beneficiary of a VIE (i.e., the party that has a controlling financial interest) is required to consolidate the assets and liabilities of the VIE. The primary beneficiary is the party that has both (1) the power to direct the activities of the VIE that most significantly impact the VIE's economic performance; and (2) through its interests in the VIE, the obligation to absorb losses or the right to receive benefits from the VIE that could potentially be significant to the VIE.

## Notes to consolidated financial statements

To assess whether the Firm has the power to direct the activities of a VIE that most significantly impact the VIE's economic performance, the Firm considers all the facts and circumstances, including its role in establishing the VIE and its ongoing rights and responsibilities. This assessment includes, first, identifying the activities that most significantly impact the VIE's economic performance; and second, identifying which party, if any, has power over those activities. In general, the parties that make the most significant decisions affecting the VIE (such as asset managers, collateral managers, servicers, or owners of call options or liquidation rights over the VIE's assets) or have the right to unilaterally remove those decision-makers are deemed to have the power to direct the activities of a VIE. To assess whether the Firm has the obligation to absorb losses of the VIE or the right to receive benefits from the VIE that could potentially be significant to the VIE, the Firm considers all of its economic interests, including debt and equity investments, servicing fees, and derivative or other arrangements deemed to be variable interests in the VIE. This assessment requires that the Firm apply judgment in determining whether these interests, in the aggregate, are considered potentially significant to the VIE. Factors considered in assessing significance include: the design of the VIE, including its capitalization structure; subordination of interests; payment priority; relative share of interests held across various classes within the VIE's capital structure; and the reasons why the interests are held by the Firm. The Firm performs on-going reassessments of: (1) whether entities previously evaluated under the majority voting-interest framework have become VIEs, based on certain events, and therefore subject to the VIE consolidation framework; and (2) whether changes in the facts and circumstances regarding the Firm's involvement with a VIE cause the Firm's consolidation conclusion to change.

In January 2010, the Financial Accounting Standards Board ("FASB") issued an amendment which deferred the requirements of the accounting guidance for VIEs for certain investment funds, including mutual funds, private equity funds and hedge funds. For the funds to which the deferral applies, the Firm continues to apply other existing authoritative accounting guidance to determine whether such funds should be consolidated.

Assets held for clients in an agency or fiduciary capacity by the Firm are not assets of JPMorgan Chase and are not included on the Consolidated Balance Sheets.

## Use of estimates in the preparation of consolidated financial statements

The preparation of the Consolidated Financial Statements requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities, revenue and expense, and disclosures of contingent assets and liabilities. Actual results could be different from these estimates.

## Foreign currency translation

JPMorgan Chase revalues assets, liabilities, revenue and expense denominated in non-U.S. currencies into U.S. dollars using applicable exchange rates.

Gains and losses relating to translating functional currency financial statements for U.S. reporting are included in other comprehensive income/(loss) ("OCI") within stockholders' equity. Gains and losses relating to nonfunctional currency transactions, including non-U.S. operations where the functional currency is the U.S. dollar, are reported in the Consolidated Statements of Income.

## Statements of cash flows

For JPMorgan Chase's Consolidated Statements of Cash Flows, cash is defined as those amounts included in cash and due from banks.

## Significant accounting policies

The following table identifies JPMorgan Chase's other significant accounting policies and the Note and page where a detailed description of each policy can be found.

Business changes and developments	Note 2	Page 195
Fair value measurement	Note 3	Page 196
Fair value option	Note 4	Page 214
Derivative instruments	Note 6	Page 218
Noninterest revenue	Note 7	Page 228
Interest income and interest expense	Note 8	Page 230
Pension and other postretirement employee benefit plans	Note 9	Page 231

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Employee stock-based incentives	Note 10	Page 241
Securities	Note 12	Page 244
Securities financing activities	Note 13	Page 249
Loans	Note 14	Page 250
Allowance for credit losses	Note 15	Page 276
Variable interest entities	Note 16	Page 280
Goodwill and other intangible assets	Note 17	Page 291
Premises and equipment	Note 18	Page 296
Long-term debt	Note 21	Page 297
Income taxes	Note 26	Page 303
Off-balance sheet lending-related financial instruments, guarantees and other commitments	Note 29	Page 308
Litigation	Note 31	Page 316

Note 2 – Business changes and developments

Changes in common stock dividend

On March 18, 2011, the Board of Directors raised the Firm's quarterly common stock dividend from \$0.05 to \$0.25 per share, effective with the dividend paid on April 30, 2011, to shareholders of record on April 6, 2011. On March 13, 2012, the Board of Directors increased the Firm's quarterly common stock dividend from \$0.25 to \$0.30 per share, effective with the dividend paid on April 30, 2012, to shareholders of record on April 5, 2012.

Other business events

RBS Sempra transaction

On July 1, 2010, JPMorgan Chase completed the acquisition of RBS Sempra Commodities' global oil, global metals and European power and gas businesses. The Firm acquired approximately \$1.7 billion of net assets which included \$3.3 billion of debt which was immediately repaid. This acquisition almost doubled the number of clients the Firm's commodities business can serve and has enabled the Firm to offer clients more products in more regions of the world.

Purchase of remaining interest in J.P. Morgan Cazenove

On January 4, 2010, JPMorgan Chase purchased the remaining interest in J.P. Morgan Cazenove, an investment banking business partnership formed in 2005, which resulted in an adjustment to the Firm's capital surplus of approximately \$1.3 billion.

Global settlement on servicing and origination of mortgages

On February 9, 2012, the Firm announced that it had agreed to a settlement in principle (the "global settlement") with a number of federal and state government agencies, including the U.S. Department of Justice ("DOJ"), the U.S. Department of Housing and Urban Development, the Consumer Financial Protection Bureau and the State Attorneys General, relating to the servicing and origination of mortgages. The global settlement, which became effective on April 5, 2012, required the Firm to, among other things: (i) make cash payments of approximately \$1.1 billion, a portion of which will be set aside for payments to borrowers ("Cash Settlement Payment"); (ii) provide approximately \$500 million of refinancing relief to certain "underwater" borrowers whose loans are owned and serviced by the Firm ("Refi Program"); and (iii) provide approximately \$3.7 billion of additional relief for certain borrowers, including reductions of principal on first and second liens, payments to assist with short sales, deficiency balance waivers on past foreclosures and short sales, and forbearance assistance for unemployed homeowners ("Consumer Relief Program"). The Cash Settlement Payment was made on April 13, 2012.

As the Firm provides relief to borrowers under the Refi and Consumer Relief Programs, the Firm receives credits that reduce its remaining obligation under these programs. If the Firm does not meet certain targets set forth in the global settlement agreement for providing either refinancings under the Refi Program or other borrower relief under the

Consumer Relief Program within certain prescribed time periods, the Firm must instead make additional cash payments. In general, 75% of the targets must be met within two years of the date of the global settlement and 100% must be achieved within three years of that date. The Firm filed its first quarterly report concerning its compliance with the global settlement with the Office of Mortgage Settlement Oversight in November 2012. The report included information regarding refinancings completed under the Refi Program and relief provided to borrowers under the Consumer Relief Program, as well as credits earned by the Firm under the global settlement as a result of such actions. The global settlement releases the Firm from certain further claims by the participating government entities related to servicing activities, including foreclosures and loss mitigation activities; certain origination activities; and certain bankruptcy-related activities. Not included in the global settlement are any claims arising out of securitization activities, including representations made to investors with respect to mortgage-backed securities; criminal claims; and repurchase demands from U.S. government-sponsored entities ("GSEs"), among other items.

Also on February 9, 2012, the Firm entered into agreements with the Board of Governors of the Federal Reserve System ("Federal Reserve") and the Office of the Comptroller of the Currency ("OCC") for the payment of civil money penalties related to conduct that was the subject of consent orders entered into with the banking regulators in April 2011. The Firm's payment obligations under those agreements will be deemed satisfied by the Firm's payments and provisions of relief under the global settlement.

For further information on this global settlement, see Loans in Note 14 on pages 250–275 of this Annual Report.

Washington Mutual, Inc. bankruptcy plan confirmation

On February 17, 2012, a bankruptcy court confirmed the joint plan containing the global settlement agreement resolving numerous disputes among Washington Mutual, Inc. (“WMI”), JPMorgan Chase and the Federal Deposit Insurance Corporation (“FDIC”) as well as significant creditor groups (the “WaMu Global Settlement”). The WaMu Global Settlement was finalized on March 19, 2012, pursuant to the execution of a definitive agreement and court approval, and the Firm recognized additional assets, including certain pension-related assets, as well as tax refunds, resulting in a pretax gain of \$1.1 billion for the three months ended March 31, 2012. For additional information related to the WaMu Global Settlement see Washington Mutual Litigations in Note 31 on page 324 of this Annual Report.



Notes to consolidated financial statements

Superstorm Sandy

On October 29, 2012, the mid-Atlantic and Northeast regions of the U.S. were affected by Superstorm Sandy, which caused major flooding and wind damage and resulted in major disruptions to individuals and businesses and significant damage to homes and communities in the affected regions. Superstorm Sandy did not have a material impact on the 2012 financial results of the Firm.

Subsequent events

Mortgage foreclosure settlement agreement with the Office of the Comptroller of the Currency and the Board of Governors of the Federal Reserve System

On January 7, 2013, the Firm announced that it and a number of other financial institutions entered into a settlement agreement with the Office of the Comptroller of the Currency and the Board of Governors of the Federal Reserve System providing for the termination of the independent foreclosure review programs (the “Independent Foreclosure Review”). Under this settlement, the Firm will make a cash payment of \$753 million into a settlement fund for distribution to qualified borrowers. The Firm has also committed an additional \$1.2 billion to foreclosure prevention actions, which will be fulfilled through credits given to the Firm for modifications, short sales and other specified types of borrower relief. Foreclosure prevention actions that earn credit under the Independent Foreclosure Review settlement are in addition to actions taken by the Firm to earn credit under the global settlement entered into by the Firm with state and federal agencies. The estimated impact of the foreclosure prevention actions required under the Independent Foreclosure Review settlement have been considered in the Firm’s allowance for loan losses. The Firm recognized a pretax charge of approximately \$700 million in the fourth quarter of 2012 related to the Independent Foreclosure Review settlement.

Note 3 – Fair value measurement

JPMorgan Chase carries a portion of its assets and liabilities at fair value. These assets and liabilities are predominantly carried at fair value on a recurring basis (i.e., assets and liabilities that are measured and reported at fair value on the Firm’s Consolidated Balance Sheets). Certain assets (e.g. certain mortgage, home equity and other loans, where the carrying value is based on the fair value of the underlying collateral), liabilities and unfunded lending-related commitments are measured at fair value on a nonrecurring basis; that is, they are not measured at fair value on an ongoing basis but are subject to fair value adjustments only in certain circumstances (for example, when there is evidence of impairment).

Fair value is defined as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. Fair value is based on quoted market prices, where available. If listed prices or quotes are not available, fair value is based on models that consider

relevant transaction characteristics (such as maturity) and use as inputs observable or unobservable market parameters, including but not limited to yield curves, interest rates, volatilities, equity or debt prices, foreign exchange rates and credit curves. Valuation adjustments may be made to ensure that financial instruments are recorded at fair value, as described below.

Imprecision in estimating unobservable market inputs or other factors can affect the amount of gain or loss recorded for a particular position. Furthermore, while the Firm believes its valuation methods are appropriate and consistent with those of other market participants, the methods and assumptions used reflect management judgment and may vary across the Firm’s businesses and portfolios.

The Firm uses various methodologies and assumptions in the determination of fair value. The use of different methodologies or assumptions to those used by the Firm could result in a different estimate of fair value at the reporting date.

Valuation process

Risk-taking functions are responsible for providing fair value estimates for assets and liabilities carried on the Consolidated Balance Sheets at fair value. The Firm’s valuation control function, which is part of the Firm’s Finance function and independent of the risk-taking functions, is responsible for verifying these estimates and determining any fair value adjustments that may be required to ensure that the Firm’s positions are recorded at fair value. In addition, the Firm has a firm-wide Valuation Governance Forum (“VGF”) comprising senior finance and risk executives to

oversee the management of risks arising from valuation activities conducted across the Firm. The VGF is chaired by the firm-wide head of the valuation control function, and also includes sub-forums for the CIB, MB, and certain corporate functions including Treasury and CIO.

The valuation control function verifies fair value estimates leveraging independently derived prices, valuation inputs and other market data, where available. Where independent prices or inputs are not available, additional review is performed by the valuation control function to ensure the reasonableness of estimates that cannot be verified to external independent data, and may include: evaluating the limited market activity including client unwinds; benchmarking of valuation inputs to those for similar instruments; decomposing the valuation of structured instruments into individual components; comparing expected to actual cash flows; reviewing profit and loss trends; and reviewing trends in collateral valuation. In addition there are additional levels of management review for more significant or complex positions.

The valuation control function determines any valuation adjustments that may be required to the estimates provided by the risk-taking functions. No adjustments are applied to the quoted market price for instruments classified within

level 1 of the fair value hierarchy (see below for further information on the fair value hierarchy). For other positions, judgment is required to assess the need for valuation adjustments to appropriately reflect liquidity considerations, unobservable parameters, and, for certain portfolios that meet specified criteria, the size of the net open risk position. The determination of such adjustments follows a consistent framework across the Firm:

Liquidity valuation adjustments are considered when the Firm may not be able to observe a recent market price for a financial instrument that trades in an inactive (or less active) market. The Firm estimates the amount of uncertainty in the initial fair value estimate based on the degree of liquidity in the market. Factors considered in determining the liquidity adjustment include: (1) the amount of time since the last relevant pricing point; (2) whether there was an actual trade or relevant external quote or alternatively pricing points for similar instruments in active markets; and (3) the volatility of the principal risk component of the financial instrument. For certain portfolios of financial instruments that the Firm manages on the basis of net open risk exposure, valuation adjustments are necessary to reflect the cost of exiting a larger-than-normal market-size net open risk position. Where applied, such adjustments are based on factors including the size of the adverse market move that is likely to occur during the period required to reduce the net open risk position to a normal market-size.

Unobservable parameter valuation adjustments may be made when positions are valued using internally developed models that incorporate unobservable parameters – that is, parameters that must be estimated and are, therefore, subject to management judgment. Unobservable parameter valuation adjustments are applied to reflect the uncertainty inherent in the valuation estimate provided by the model.

Where appropriate, the Firm also applies adjustments to its estimates of fair value in order to appropriately reflect counterparty credit quality and the Firm's own creditworthiness, applying a consistent framework across the Firm. For more information on such adjustments see Credit adjustments on page 212 of this Note

#### Valuation model review and approval

If prices or quotes are not available for an instrument or a similar instrument, fair value is generally determined using valuation models that consider relevant transaction data such as maturity and use as inputs market-based or independently sourced parameters. Where this is the case

the price verification process described above is applied to the inputs to those models.

The Firm's Model Risk function within the Firm's Model Risk and Development Group, which in turn reports to the Chief Risk Officer, reviews and approves valuation models used by the Firm. Model reviews consider a number of factors about the model's suitability for valuation of a particular product including whether it accurately reflects the characteristics and significant risks of a particular instrument; the selection and reliability of model inputs; consistency with models for similar products; the appropriateness of any model-related adjustments; and sensitivity to input parameters and assumptions that cannot be observed from the market. When reviewing a model, the Model Risk function analyzes and challenges the model methodology and the reasonableness of model assumptions and may perform or require additional testing, including back-testing of model outcomes.

New significant valuation models, as well as material changes to existing models, are reviewed and approved prior to implementation except where specified conditions are met. The Model Risk function performs an annual Firmwide model risk assessment where developments in the product or market are considered in determining whether valuation models which have already been reviewed need to be reviewed and approved again.

#### Valuation Hierarchy

A three-level valuation hierarchy has been established under U.S. GAAP for disclosure of fair value measurements. The valuation hierarchy is based on the transparency of inputs to the valuation of an asset or liability as of the measurement date. The three levels are defined as follows.

Level 1 – inputs to the valuation methodology are quoted prices (unadjusted) for identical assets or liabilities in active markets.

Level 2 – inputs to the valuation methodology include quoted prices for similar assets and liabilities in active markets, and inputs that are observable for the asset or liability, either directly or indirectly, for substantially the full term of the financial instrument.

Level 3 – one or more inputs to the valuation methodology are unobservable and significant to the fair value measurement.

A financial instrument's categorization within the valuation hierarchy is based on the lowest level of input that is significant to the fair value measurement.

Notes to consolidated financial statements

The following table describes the valuation methodologies used by the Firm to measure its more significant products/instruments at fair value, including the general classification of such instruments pursuant to the valuation hierarchy.

Product/instrument	Valuation methodology, inputs and assumptions	Classifications in the valuation hierarchy
Securities financing agreements	<p>Valuations are based on discounted cash flows, which consider:</p> <ul style="list-style-type: none"> <li>• Derivative features. For further information refer to discussion on derivatives below.</li> <li>• Market rates for the respective maturity</li> <li>• Collateral</li> </ul>	Level 2
Loans and lending-related commitments - wholesale	Where observable market data is available, valuations are based on:	Level 2 or 3
Trading portfolio	<ul style="list-style-type: none"> <li>• Observed market prices (circumstances are limited)</li> <li>• Relevant broker quotes</li> <li>• Observed market prices for similar instruments</li> </ul> <p>Where observable market data is unavailable or limited, valuations are based on discounted cash flows, which consider the following:</p> <ul style="list-style-type: none"> <li>• Yield</li> <li>• Lifetime credit losses</li> <li>• Loss severity</li> <li>• Prepayment speed</li> <li>• Servicing costs</li> </ul>	
Loans held for investment and associated lending related commitments	<p>Valuations are based on discounted cash flows, which consider:</p> <ul style="list-style-type: none"> <li>• Credit spreads, derived from the cost of CDS; or benchmark credit curves developed by the Firm, by industry and credit rating, and which take into account the difference in loss severity rates between bonds and loans</li> <li>• Prepayment speed</li> </ul> <p>Lending related commitments are valued similar to loans and reflect the portion of an unused commitment expected, based on the Firm's average portfolio historical experience, to become funded prior to an obligor default</p> <p>For information regarding the valuation of loans measured at collateral value, see Note 14 on pages 250-275 of this Annual Report.</p>	Predominantly level 3
Loans - consumer Held for investment consumer loans, excluding credit card	<p>Valuations are based on discounted cash flows, which consider:</p> <ul style="list-style-type: none"> <li>• Discount rates (derived from primary origination rates and market activity)</li> <li>• Expected lifetime credit losses (considering expected and current default rates for existing portfolios, collateral prices, and economic environment expectations (i.e., unemployment rates))</li> </ul>	Predominantly level 3

- Estimated prepayments
- Servicing costs
- Market liquidity

For information regarding the valuation of loans measured at collateral value, see Note 14 on pages 250-275 of this Annual Report.

Credit card receivables

Valuations are based on discounted cash flows, which consider:

- Projected interest income and late fee revenue, funding, servicing and credit costs, and loan repayment rates

Level 3

- Estimated life of receivables (based on projected loan payment rates)
- Discount rate - based on expected return on receivables
- Credit costs - allowance for loan losses is considered a reasonable proxy for the credit cost based on the short-term nature of credit card receivables

Conforming residential mortgage loans expected to be sold

Fair value is based upon observable prices for mortgage-backed securities with similar collateral and incorporates adjustments to these prices to account for differences between the securities and the value of the underlying loans, which include credit characteristics, portfolio composition, and liquidity.

Predominantly level 2

Product/instrument	Valuation methodology, inputs and assumptions	Classifications in the valuation hierarchy
Securities	<p>Quoted market prices are used where available.</p> <p>In the absence of quoted market prices, securities are valued based on:</p> <ul style="list-style-type: none"> <li>• Observable market prices for similar securities</li> <li>• Relevant broker quotes</li> </ul> <p>• Discounted cash flows</p> <p>In addition, the following inputs to discounted cash flows are used for the following products:</p> <p>Mortgage- and asset-backed securities specific inputs:</p> <ul style="list-style-type: none"> <li>• Collateral characteristics</li> </ul> <p>• Deal-specific payment and loss allocations</p> <p>• Current market assumptions related to yield, prepayment speed, conditional default rates and loss severity</p> <p>Collateralized loan obligations (“CLOs”), specific inputs:</p> <ul style="list-style-type: none"> <li>• Collateral characteristics</li> <li>• Deal-specific payment and loss allocations</li> </ul> <p>• Expected prepayment speed, conditional default rates, loss severity</p> <p>• Credit spreads</p> <p>• Credit rating data</p>	<p>Level 1</p> <p>Level 2 or 3</p>
Physical commodities	Valued using observable market prices or data	Level 1 or 2
Derivatives	<p>Exchange-traded derivatives that are actively traded and valued using the exchange price, and over-the-counter contracts where quoted prices are available in an active market.</p> <p>Derivatives valued using models such as the Black-Scholes option pricing model, simulation models, or a combination of models, that use observable or unobservable valuation inputs (e.g. plain vanilla options and interest rate and credit default swaps). Inputs include:</p>	<p>Level 1</p> <p>Level 2 or 3</p>

- Contractual terms including the period to maturity
- Readily observable parameters including interest rates and volatility
- Credit quality of the counterparty and of the Firm
- Correlation levels

In addition, the following specific inputs are used for the following derivatives that are valued based on models with significant unobservable inputs:

Structured credit derivatives specific inputs include:

- CDS spreads and recovery rates
- Credit correlation between the underlying debt instruments (levels are modeled on a transaction basis and calibrated to liquid benchmark tranche indices)
- Actual transactions, where available, are used to regularly recalibrate unobservable parameters

Certain long-dated equity option specific inputs include:

- Long-dated equity volatilities

Certain interest rate and FX exotic options specific inputs include:

- Interest rate correlation
- Interest rate spread volatility
- Foreign exchange correlation
- Correlation between interest rates and foreign exchange rates
- Parameters describing the evolution of underlying interest rates

Certain commodity derivatives specific inputs include:

- Commodity volatility

Adjustments to reflect counterparty credit quality (credit valuation adjustments or “CVA”), and the Firms own creditworthiness (debit valuation adjustments or “DVA”), see page 212 of this Note.



Notes to consolidated financial statements

Product/instrument	Valuation methodology, inputs and assumptions	Classification in the valuation hierarchy
Mortgage servicing rights (“MSRs”)	See Mortgage servicing rights in Note 17 on pages 292-294 of this Annual Report.	Level 3
Private equity direct investments	<p>Private equity direct investments</p> <p>Fair value is estimated using all available information and considering the range of potential inputs, including:</p> <ul style="list-style-type: none"> <li>• Transaction prices</li> <li>• Trading multiples of comparable public companies</li> <li>• Operating performance of the underlying portfolio company</li> <li>• Additional available inputs relevant to the investment</li> <li>• Adjustments as required, since comparable public companies are not identical to the company being valued, and for company-specific issues and lack of liquidity</li> </ul>	Level 3
Fund investments (i.e., mutual/collective investment funds, private equity funds, hedge funds, and real estate funds)	<p>Public investments held in the Private Equity portfolio</p> <ul style="list-style-type: none"> <li>• Valued using observable market prices less adjustments for relevant restrictions, where applicable</li> </ul> <p>Net asset value (“NAV”)</p> <ul style="list-style-type: none"> <li>• NAV is validated by sufficient level of observable activity (i.e., purchases and sales)</li> <li>• Adjustments to the NAV as required, for restrictions on redemption (e.g., lock up periods or withdrawal limitations) or where observable activity is limited</li> </ul>	Level 1 or 2
Beneficial interests issued by consolidated VIE	<p>Valued using observable market information, where available</p> <p>In the absence of observable market information, valuations are based on the fair value of the underlying assets held by the VIE</p> <p>Valuations are based on discounted cash flows, which consider:</p> <ul style="list-style-type: none"> <li>• Market rates for respective maturity</li> </ul>	Level 2 or 3
Long-term debt, not carried at fair value	<ul style="list-style-type: none"> <li>• The Firm’s own creditworthiness (DVA), see page 212 of this Note</li> </ul>	Predominantly level 2
Structured notes (included in deposits, other borrowed	Valuations are based on discounted cash flows, which consider:	Level 2 or 3

funds and long-term debt)

- The Firm's own creditworthiness (DVA), see page 212 of this Note
- Consideration of derivative features. For further information refer to discussion on derivatives above

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The following table presents the asset and liabilities measured at fair value as of December 31, 2012 and 2011 by major product category and fair value hierarchy.

Assets and liabilities measured at fair value on a recurring basis

December 31, 2012 (in millions)	Fair value hierarchy			Netting adjustments	Total fair value
	Level 1	Level 2	Level 3		
Federal funds sold and securities purchased under resale agreements	\$—	\$24,258	\$—	\$—	\$24,258
Securities borrowed	—	10,177	—	—	10,177
Trading assets:					
Debt instruments:					
Mortgage-backed securities:					
U.S. government agencies <sup>(a)</sup>	—	36,240	498	—	36,738
Residential – nonagency	—	1,509	663	—	2,172
Commercial – nonagency	—	1,565	1,207	—	2,772
Total mortgage-backed securities	—	39,314	2,368	—	41,682
U.S. Treasury and government agencies <sup>(a)</sup>	12,240	10,185	—	—	22,425
Obligations of U.S. states and municipalities	—	16,726	1,436	—	18,162
Certificates of deposit, bankers' acceptances and commercial paper	—	4,759	—	—	4,759
Non-U.S. government debt securities	23,500	45,121	67	—	68,688
Corporate debt securities	—	33,384	5,308	—	38,692
Loans <sup>(b)</sup>	—	30,754	10,787	—	41,541
Asset-backed securities	—	4,182	3,696	—	7,878
Total debt instruments	35,740	184,425	23,662	—	243,827
Equity securities	106,898	2,687	1,114	—	110,699
Physical commodities <sup>(c)</sup>	10,107	6,066	—	—	16,173
Other	—	3,483	863	—	4,346
Total debt and equity instruments <sup>(d)</sup>	152,745	196,661	25,639	—	375,045
Derivative receivables:					
Interest rate	476	1,322,155	6,617	(1,290,043)	39,205
Credit	—	93,821	6,489	(98,575)	1,735
Foreign exchange	450	144,758	3,051	(134,117)	14,142
Equity	—	36,017	4,921	(31,672)	9,266
Commodity	316	41,129	2,180	(32,990)	10,635
Total derivative receivables <sup>(e)</sup>	1,242	1,637,880	23,258	(1,587,397)	74,983
Total trading assets	153,987	1,834,541	48,897	(1,587,397)	450,028
Available-for-sale securities:					
Mortgage-backed securities:					
U.S. government agencies <sup>(a)</sup>	—	98,388	—	—	98,388
Residential – nonagency	—	74,189	450	—	74,639
Commercial – nonagency	—	12,948	255	—	13,203
Total mortgage-backed securities	—	185,525	705	—	186,230
U.S. Treasury and government agencies <sup>(a)</sup>	8,907	3,223	—	—	12,130
Obligations of U.S. states and municipalities	35	21,489	187	—	21,711
Certificates of deposit	—	2,783	—	—	2,783
Non-U.S. government debt securities	41,218	24,826	—	—	66,044
Corporate debt securities	—	38,609	—	—	38,609
Asset-backed securities:					

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Collateralized loan obligations	—	—	27,896	—	27,896
Other	—	12,843	128	—	12,971
Equity securities	2,733	38	—	—	2,771
Total available-for-sale securities	52,893	289,336	28,916	—	371,145
Loans	—	273	2,282	—	2,555
Mortgage servicing rights	—	—	7,614	—	7,614
Other assets:					
Private equity investments <sup>(f)</sup>	578	—	7,181	—	7,759
All other	4,188	253	4,258	—	8,699
Total other assets	4,766	253	11,439	—	16,458
Total assets measured at fair value on a recurring basis	\$211,646	\$2,158,838	<sup>(g)</sup> \$99,148	<sup>(g)</sup> \$(1,587,397)	\$882,235
Deposits	\$—	\$3,750	\$1,983	\$—	\$5,733
Federal funds purchased and securities loaned or sold under repurchase agreements	—	4,388	—	—	4,388
Other borrowed funds	—	9,972	1,619	—	11,591
Trading liabilities:					
Debt and equity instruments <sup>(d)</sup>	46,580	14,477	205	—	61,262
Derivative payables:					
Interest rate	490	1,283,829	3,295	(1,262,708)	24,906
Credit	—	95,411	4,616	(97,523)	2,504
Foreign exchange	428	156,413	4,801	(143,041)	18,601
Equity	—	36,083	6,727	(30,991)	11,819
Commodity	176	45,363	1,926	(34,639)	12,826
Total derivative payables <sup>(e)</sup>	1,094	1,617,099	21,365	(1,568,902)	70,656
Total trading liabilities	47,674	1,631,576	21,570	(1,568,902)	131,918
Accounts payable and other liabilities	—	—	36	—	36
Beneficial interests issued by consolidated VIEs	—	245	925	—	1,170
Long-term debt	—	22,312	8,476	—	30,788
Total liabilities measured at fair value on a recurring basis	\$47,674	\$1,672,243	\$34,609	\$(1,568,902)	\$185,624

## Notes to consolidated financial statements

December 31, 2011 (in millions)	Fair value hierarchy			Netting adjustments	Total fair value
	Level 1	Level 2	Level 3		
Federal funds sold and securities purchased under resale agreements	\$—	\$22,191	\$—	\$—	\$22,191
Securities borrowed	—	15,308	—	—	15,308
Trading assets:					
Debt instruments:					
Mortgage-backed securities:					
U.S. government agencies <sup>(a)</sup>	27,082	7,801	86	—	34,969
Residential – nonagency	—	2,956	796	—	3,752
Commercial – nonagency	—	870	1,758	—	2,628
Total mortgage-backed securities	27,082	11,627	2,640	—	41,349
U.S. Treasury and government agencies <sup>(a)</sup>	11,508	8,391	—	—	19,899
Obligations of U.S. states and municipalities	—	15,117	1,619	—	16,736
Certificates of deposit, bankers' acceptances and commercial paper	—	2,615	—	—	2,615
Non-U.S. government debt securities	18,618	40,080	104	—	58,802
Corporate debt securities	—	33,938	6,373	—	40,311
Loans <sup>(b)</sup>	—	21,589	12,209	—	33,798
Asset-backed securities	—	2,406	7,965	—	10,371
Total debt instruments	57,208	135,763	30,910	—	223,881
Equity securities	93,799	3,502	1,177	—	98,478
Physical commodities <sup>(c)</sup>	21,066	4,898	—	—	25,964
Other	—	2,283	880	—	3,163
Total debt and equity instruments <sup>(d)</sup>	172,073	146,446	32,967	—	351,486
Derivative receivables:					
Interest rate	1,324	1,433,469	6,728	(1,395,152)	46,369
Credit	—	152,569	17,081	(162,966)	6,684
Foreign exchange	833	162,689	4,641	(150,273)	17,890
Equity	—	43,604	4,132	(40,943)	6,793
Commodity	4,561	50,409	2,459	(42,688)	14,741
Total derivative receivables <sup>(e)</sup>	6,718	1,842,740	35,041	(1,792,022)	92,477
Total trading assets	178,791	1,989,186	68,008	(1,792,022)	443,963
Available-for-sale securities:					
Mortgage-backed securities:					
U.S. government agencies <sup>(a)</sup>	92,426	14,681	—	—	107,107
Residential – nonagency	—	67,554	3	—	67,557
Commercial – nonagency	—	10,962	267	—	11,229
Total mortgage-backed securities	92,426	93,197	270	—	185,893
U.S. Treasury and government agencies <sup>(a)</sup>	3,837	4,514	—	—	8,351
Obligations of U.S. states and municipalities	36	16,246	258	—	16,540
Certificates of deposit	—	3,017	—	—	3,017
Non-U.S. government debt securities	25,381	19,884	—	—	45,265
Corporate debt securities	—	62,176	—	—	62,176
Asset-backed securities:					
Collateralized loan obligations	—	116	24,745	—	24,861
Other	—	15,760	213	—	15,973
Equity securities	2,667	38	—	—	2,705

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Total available-for-sale securities	124,347	214,948	25,486	—	364,781
Loans	—	450	1,647	—	2,097
Mortgage servicing rights	—	—	7,223	—	7,223
Other assets:					
Private equity investments <sup>(f)</sup>	99	706	6,751	—	7,556
All other	4,336	233	4,374	—	8,943
Total other assets	4,435	939	11,125	—	16,499
Total assets measured at fair value on a recurring basis	\$307,573	\$2,243,022	(\$113,489)	(\$1,792,022)	\$872,062
Deposits	\$—	\$3,515	\$1,418	\$—	\$4,933
Federal funds purchased and securities loaned or sold under repurchase agreements	—	6,817	—	—	6,817
Other borrowed funds	—	8,069	1,507	—	9,576
Trading liabilities:					
Debt and equity instruments <sup>(d)</sup>	50,830	15,677	211	—	66,718
Derivative payables:					
Interest rate	1,537	1,395,113	3,167	(1,371,807)	28,010
Credit	—	155,772	9,349	(159,511)	5,610
Foreign exchange	846	159,258	5,904	(148,573)	17,435
Equity	—	39,129	7,237	(36,711)	9,655
Commodity	3,114	53,684	3,146	(45,677)	14,267
Total derivative payables <sup>(e)</sup>	5,497	1,802,956	28,803	(1,762,279)	74,977
Total trading liabilities	56,327	1,818,633	29,014	(1,762,279)	141,695
Accounts payable and other liabilities	—	—	51	—	51
Beneficial interests issued by consolidated VIEs	—	459	791	—	1,250
Long-term debt	—	24,410	10,310	—	34,720
Total liabilities measured at fair value on a recurring basis	\$56,327	\$1,861,903	\$43,091	\$(1,762,279)	\$199,042

(a) At December 31, 2012 and 2011, included total U.S. government-sponsored enterprise obligations of \$119.4 billion and \$122.4 billion respectively, which were predominantly mortgage-related.

At December 31, 2012 and 2011, included within trading loans were \$26.4 billion and \$20.1 billion, respectively, of residential first-lien mortgages, and \$2.2 billion and \$2.0 billion, respectively, of commercial first-lien (b) mortgages. Residential mortgage loans include conforming mortgage loans originated with the intent to sell to U.S. government agencies of \$17.4 billion and \$11.0 billion, respectively, and reverse mortgages of \$4.0 billion and \$4.0 billion, respectively.

Physical commodities inventories are generally accounted for at the lower of cost or market. “Market” is a term (c) defined in U.S. GAAP as an amount not exceeding fair value less costs to sell (“transaction costs”). Transaction costs for the Firm’s physical commodities inventories are either not applicable or immaterial to the value of the inventory.

Therefore, market approximates fair value for the Firm's physical commodities inventories. When fair value hedging has been applied (or when market is below cost), the carrying value of physical commodities approximates fair value, because under fair value hedge accounting, the cost basis is adjusted for changes in fair value. For a further discussion of the Firm's hedge accounting relationships, see Note 6 on pages 218–227 of this Annual Report. To provide consistent fair value disclosure information, all physical commodities inventories have been included in each period presented.

Balances reflect the reduction of securities owned (long positions) by the amount of securities sold but not yet (d) purchased (short positions) when the long and short positions have identical Committee on Uniform Security Identification Procedures numbers ("CUSIPs").

As permitted under U.S. GAAP, the Firm has elected to net derivative receivables and derivative payables and the related cash collateral received and paid when a legally enforceable master netting agreement exists. For purposes of the tables above, the Firm does not reduce derivative receivables and derivative payables balances for this netting adjustment, either within or across the levels of the fair value hierarchy, as such netting is not relevant to a (e) presentation based on the transparency of inputs to the valuation of an asset or liability. Therefore, the balances reported in the fair value hierarchy table are gross of any counterparty netting adjustments. However, if the Firm were to net such balances within level 3, the reduction in the level 3 derivative receivable and payable balances would be \$8.4 billion and \$11.7 billion at December 31, 2012 and 2011, respectively; this is exclusive of the netting benefit associated with cash collateral, which would further reduce the level 3 balances.

Private equity instruments represent investments within the Corporate/Private Equity segment. The cost basis of the (f) private equity investment portfolio totaled \$8.4 billion and \$9.5 billion at December 31, 2012 and 2011, respectively.

Includes investments in hedge funds, private equity funds, real estate and other funds that do not have readily determinable fair values. The Firm uses net asset value per share when measuring the fair value of these (g) investments. At December 31, 2012 and 2011, the fair value of these investments were \$4.9 billion and \$5.5 billion, respectively, of which \$1.1 billion and \$1.2 billion, respectively, in level 2, and \$3.8 billion and \$4.3 billion, respectively, in level 3.

Transfers between levels for instruments carried at fair value on a recurring basis

For the year ended December 31, 2012, \$113.9 billion of settled U.S. government agency mortgage-backed securities were transferred from level 1 to level 2. While the U.S. government agency mortgage-backed securities market remains highly liquid and transparent, the transfer reflects greater market price differentiation between settled securities based on certain underlying loan specific factors. There were no significant transfers from level 2 to level 1 for the year ended December 31, 2012, and no significant transfers between level 1 and level 2 for the year ended December 31, 2011.

For the years ended December 31, 2012 and 2011, there were no significant transfers from level 2 into level 3. For the year ended December 31, 2012, transfers from level 3 into level 2 included \$1.2 billion of derivative payables based on increased observability of certain structured equity derivatives; and \$1.8 billion of long-term debt due to a decrease in valuation uncertainty of certain equity structured notes. For the year ended December 31, 2011, transfers from level 3 into level 2 included \$2.6 billion of long-term debt due to a decrease in valuation uncertainty of certain structured notes.

All transfers are assumed to occur at the beginning of the reporting period.

During 2012 the liquidity for certain collateralized loan obligations increased and price transparency improved. Accordingly, the Firm incorporated a revised valuation model into its valuation process for CLOs to better calibrate to market data where available. The Firm began to verify fair value estimates from this model to independent sources during the fourth quarter of 2012. Although market liquidity and price transparency have improved, CLO market prices were not yet considered materially observable and therefore CLOs remained in level 3 as of December 31, 2012. The change in the valuation process did not have a significant impact on the fair value of the Firm's CLO positions.





## Notes to consolidated financial statements

## Level 3 valuations

The Firm has established well-documented processes for determining fair value, including for instruments where fair value is estimated using significant unobservable inputs (level 3). For further information on the Firm's valuation process and a detailed discussion of the determination of fair value for individual financial instruments, see pages 196–200 of this Note.

Estimating fair value requires the application of judgment. The type and level of judgment required is largely dependent on the amount of observable market information available to the Firm. For instruments valued using internally developed models that use significant unobservable inputs and are therefore classified within level 3 of the fair value hierarchy, judgments used to estimate fair value are more significant than those required when estimating the fair value of instruments classified within levels 1 and 2.

In arriving at an estimate of fair value for an instrument within level 3, management must first determine the appropriate model to use. Second, due to the lack of observability of significant inputs, management must assess all relevant empirical data in deriving valuation inputs — including, but not limited to, transaction details, yield curves, interest rates, prepayment speed, default rates, volatilities, correlations, equity or debt prices, valuations of comparable instruments, foreign exchange rates and credit curves. Finally, management judgment must be applied to assess the appropriate level of valuation adjustments to reflect counterparty credit quality, the Firm's creditworthiness, constraints on liquidity and unobservable parameters, where relevant. The judgments made are typically affected by the type of product and its specific contractual terms, and the level of liquidity for the product or within the market as a whole. The following table presents the Firm's primary level 3 financial instruments, the valuation techniques used to measure the fair value of those financial instruments, the significant unobservable inputs, the range of values for

those inputs and the weighted averages of such inputs. While the determination to classify an instrument within level 3 is based on the significance of the unobservable inputs to the overall fair value measurement, level 3 financial instruments typically include observable components (that is, components that are actively quoted and can be validated to external sources) in addition to the unobservable components. The level 1 and/or level 2 inputs are not included in the table. In addition, the Firm manages the risk of the observable components of level 3 financial instruments using securities and derivative positions that are classified within levels 1 or 2 of the fair value hierarchy. The range of values presented in the table is representative of the highest and lowest level input used to value the significant groups of instruments within a product/instrument classification. The input range does not reflect the level of input uncertainty, instead it is driven by the different underlying characteristics of the various instruments within the classification. For example, two option contracts may have similar levels of market risk exposure and valuation uncertainty, but may have significantly different implied volatility levels because the option contracts have different underlyings, tenors, or strike prices.

Where provided, the weighted averages of the input values presented in the table are calculated based on the fair value of the instruments that the input is being used to value. In the Firm's view, the input range and the weighted average value do not reflect the degree of input uncertainty or an assessment of the reasonableness of the Firm's estimates and assumptions. Rather, they reflect the characteristics of the various instruments held by the Firm and the relative distribution of instruments within the range of characteristics. The input range and weighted average values will therefore vary from period to period and parameter to parameter based on the characteristics of the instruments held by the Firm at each balance sheet date.

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Level 3 inputs<sup>(a)</sup>

December 31, 2012 (in millions, except for ratios and basis points)

Product/Instrument	Fair value	Principal valuation technique	Unobservable inputs	Range of input values	Weighted average
Residential mortgage-backed securities and loans	\$9,836	Discounted cash flows	Yield	4 % - 20%	7%
			Prepayment speed	0 % - 40%	6%
			Conditional default rate	0 % - 100%	10%
			Loss severity	0 % - 95%	15%
Commercial mortgage-backed securities and loans <sup>(b)</sup>	1,724	Discounted cash flows	Yield	2 % - 32%	6%
			Conditional default rate	0 % - 8%	0%
			Loss severity	0 % - 40%	35%
Corporate debt securities, obligations of U.S. states and municipalities, and other <sup>(c)</sup>	19,563	Discounted cash flows	Credit spread	130 bps - 250 bps	153 bps
			Yield	0 % - 30%	9%
			Market comparables	Price 25 - 125	87
Net interest rate derivatives	3,322	Option pricing	Interest rate correlation	(75) % - 100%	
			Interest rate spread volatility	0 % - 60%	
			Credit correlation	27 % - 90%	
Net credit derivatives <sup>(b)</sup>	1,873	Discounted cash flows	Credit correlation	27 % - 90%	
Net foreign exchange derivatives	(1,750)	Option pricing	Foreign exchange correlation	(75) % - 45%	
Net equity derivatives	(1,806)	Option pricing	Equity volatility	5 % - 45%	
Net commodity derivatives	254	Option pricing	Commodity volatility	24 % - 47%	
Collateralized loan obligations <sup>(d)</sup>	29,972	Discounted cash flows	Credit spread	130 bps - 600 bps	163 bps
			Prepayment speed	15 % - 20%	19%
			Conditional default rate	2%	2%
			Loss severity	40%	40%
			Refer to Note 17 on pages 291–295 of this Annual Report.		
Mortgage servicing rights (“MSRs”)	7,614	Discounted cash flows	Refer to Note 17 on pages 291–295 of this Annual Report.		
Private equity direct investments	5,231	Market comparables	EBITDA multiple	2.7x - 14.6x	8.3x
			Liquidity adjustment	0 % - 30%	10%
Private equity fund investments	1,950	Net asset value	Net asset value <sup>(f)</sup>		
Long-term debt, other borrowed funds, and deposits <sup>(e)</sup>	12,078	Option pricing	Interest rate correlation	(75) % - 100%	
			Foreign exchange correlation	(75) % - 45%	
			Equity correlation	(40) % - 85%	
			Discounted cash flows	Credit correlation 27 % - 84%	

(a) The categories presented in the table have been aggregated based upon the product type, which may differ from their classification on the Consolidated Balance Sheet.

The unobservable inputs and associated input ranges for approximately \$1.3 billion of credit derivative receivables (b) and \$1.2 billion of credit derivative payables with underlying mortgage risk have been included in the inputs and ranges provided for commercial mortgage-backed securities and loans.

(c) Approximately 16% of instruments in this category include price as an unobservable input. This balance includes certain securities and illiquid trading loans, which are generally valued using comparable prices and/or yields for

similar instruments.

CLOs are securities backed by corporate loans. At December 31, 2012, \$27.9 billion of CLOs were held in the available-for-sale (“AFS”) securities portfolio and \$2.1 billion were included in asset-backed securities held in the trading portfolio. Substantially all of the securities are rated “AAA”, “AA” and “A”. The reported range of credit spreads (d) increased from the third quarter to the fourth quarter of 2012, while the reported ranges of other unobservable parameters decreased. This was primarily due to the Firm incorporating a revised valuation model for CLOs, which uses a different combination of valuation parameters as compared with the old model. The change did not have a significant impact on the fair value of the Firm’s CLO positions.

Long-term debt, other borrowed funds, and deposits include structured notes issued by the Firm that are financial instruments containing embedded derivatives. The estimation of the fair value of structured notes is predominantly (e) based on the derivative features embedded within the instruments. The significant unobservable inputs are broadly consistent with those presented for derivative receivables.

The range has not been disclosed due to the wide range of possible values given the diverse nature of the (f) underlying investments.

## Notes to consolidated financial statements

## Changes in and ranges of unobservable inputs

The following discussion provides a description of the impact on a fair value measurement of a change in each unobservable input in isolation, and the interrelationship between unobservable inputs, where relevant and significant. The impact of changes in inputs may not be independent as a change in one unobservable input may give rise to a change in another unobservable input, and where relationships exist between two unobservable inputs, those relationships are discussed below. Relationships may also exist between observable and unobservable inputs (for example, as observable interest rates rise, unobservable prepayment rates decline). Such relationships have not been included in the discussion below. In addition, for each of the individual relationships described below, the inverse relationship would also generally apply.

In addition, the following discussion provides a description of attributes of the underlying instruments and external market factors that affect the range of inputs used in the valuation of the Firm's positions.

## Discount rates and spreads

**Yield** – The yield of an asset is the interest rate used to discount future cash flows in a discounted cash flow calculation. An increase in the yield, in isolation, would result in a decrease in a fair value measurement.

**Credit spread** – The credit spread is the amount of additional annualized return over the market interest rate that a market participant would demand for taking exposure to the credit risk of an instrument. The credit spread for an instrument forms part of the discount rate used in a discounted cash flow calculation. Generally, an increase in the credit spread would result in a decrease in a fair value measurement.

The yield and the credit spread of a particular mortgage-backed security or CLO primarily reflect the risk inherent in the instrument. The yield is also impacted by the absolute level of the coupon paid by the instrument (which may not correspond directly to the level of inherent risk). Therefore, the range of yield and credit spreads reflects the range of risk inherent in various instruments owned by the Firm. The risk inherent in mortgage-backed securities is driven by the subordination of the security being valued and the characteristics of the underlying mortgages within the collateralized pool, including borrower FICO scores, loan to value ratios for residential mortgages and the nature of the property and/or any tenants for commercial mortgages. For CLOs, credit spread reflects the market's implied risk premium based on several factors including the subordination of the investment, the credit quality of underlying borrowers, the specific terms of the loans within the CLO structure, as well as the supply and demand of the instrument. For corporate debt securities, obligations of U.S. states and municipalities and other similar instruments, credit spreads reflect the credit quality of the obligor and the tenor of the obligation.

## Performance rates of underlying collateral in collateralized obligations (e.g., MBS, CLOs, etc.)

**Prepayment speed** – The prepayment speed is a measure of the voluntary unscheduled principal repayments of a prepayable obligation in a collateralized pool. Prepayment speeds generally decline as borrower delinquencies rise. An increase in prepayment speeds, in isolation, would result in a decrease in a fair value measurement of assets valued at a premium to par and an increase in a fair value measurement of assets valued at a discount to par.

Prepayment speeds may vary from collateral pool-to-collateral pool, and are driven by the type and location of the underlying borrower, the remaining tenor of the obligation as well as the level and type (e.g., fixed or floating) of interest rate being paid by the borrower. Typically collateral pools with higher borrower credit quality have a higher prepayment rate than those with lower borrower credit quality, all other factors being equal.

**Conditional default rate** – The conditional default rate is a measure of the reduction in the outstanding collateral balance underlying a collateralized obligation as a result of defaults. While there is typically no direct relationship between conditional default rates and prepayment speeds, collateralized obligations for which the underlying collateral have high prepayment speeds will tend to have lower conditional default rates. An increase in conditional default rates would generally be accompanied by an increase in loss severity and an increase in credit spreads. An increase in the conditional default rate, in isolation, would result in a decrease in a fair value measurement.

Conditional default rates reflect the quality of the collateral underlying a securitization and the structure of the securitization itself. Based on the types of securities owned in the Firm's market-making portfolios, conditional default rates are most typically at the lower end of the range presented.

Loss severity – The loss severity (the inverse concept is the recovery rate) is the expected amount of future realized losses resulting from the ultimate liquidation of a particular loan, expressed as the net amount of loss relative to the outstanding loan balance. An increase in loss severity is generally accompanied by an increase in conditional default rates. An increase in the loss severity, in isolation, would result in a decrease in a fair value measurement.

The loss severity applied in valuing a mortgage-backed security or a CLO investment depends on a host of factors relating to the underlying obligations (i.e., mortgages or loans). For mortgages, this includes the loan-to-value ratio, the nature of the lender's charge over the property and various other instrument-specific factors. For CLO investments, loss severity is driven by the characteristics of the underlying loans including the seniority of the loans and the type and amount of any security provided by the obligor.

**Correlation** – Correlation is a measure of the relationship between the movements of two variables (e.g., how the change in one variable influences the change in the other). Correlation is a pricing input for a derivative product where the payoff is driven by one or more underlying risks. Correlation inputs are related to the type of derivative (e.g., interest rate, credit, equity and foreign exchange) due to the nature of the underlying risks. When parameters are positively correlated, an increase in one parameter will result in an increase in the other parameter. When parameters are negatively correlated, an increase in one parameter will result in a decrease in the other parameter. An increase in correlation can result in an increase or a decrease in a fair value measurement. Given a short correlation position, an increase in correlation, in isolation, would generally result in a decrease in a fair value measurement. Correlation inputs between risks within the same asset class are generally narrower than those between underlying risks across asset classes. In addition the ranges of credit correlation inputs tend to be narrower than those affecting other asset classes.

The level of correlation used in the valuation of derivatives with multiple underlying risks depends on a number of factors including the nature of those risks. For example, the correlation between two credit risk exposures would be different than that between two interest rate risk exposures. Similarly, the tenor of the transaction may also impact the correlation input as the relationship between the underlying risks may be different over different time periods.

Furthermore, correlation levels are very much dependent on market conditions and could have a relatively wide range of levels within or across asset classes over time, particularly in volatile market conditions.

For the Firm’s derivatives and structured notes positions classified within level 3, the equity, foreign exchange and interest rate correlation inputs used in estimating fair value were concentrated at the upper end of the range presented, while the credit correlation inputs were distributed across the range presented.

**Volatility** – Volatility is a measure of the variability in possible returns for an instrument, parameter or market index given how much the particular instrument, parameter or index changes in value over time. Volatility is a pricing input for options, including equity options, commodity options, and interest rate options. Generally, the higher the volatility of the underlying, the riskier the instrument. Given a long position in an option, an increase in volatility, in isolation, would generally result in an increase in a fair value measurement.

The level of volatility used in the valuation of a particular option-based derivative depends on a number of factors, including the nature of the risk underlying the option (e.g., the volatility of a particular equity security may be significantly different from that of a particular commodity index), the tenor of the derivative as well as the strike price of the option.

For the Firm’s derivatives and structured notes positions classified within level 3, the equity and interest rate volatility inputs used in estimating fair value were concentrated at the upper end of the range presented, while commodities volatilities were concentrated at the lower end of the range.

**EBITDA multiple** – EBITDA multiples refer to the input (often derived from the value of a comparable company) that is multiplied by the historic and/or expected earnings before interest, taxes, depreciation and amortization (“EBITDA”) of a company in order to estimate the company’s value. An increase in the EBITDA multiple, in isolation, net of adjustments, would result in an increase in a fair value measurement.

**Net asset value** – Net asset value is the total value of a fund’s assets less liabilities. An increase in net asset value would result in an increase in a fair value measurement.

#### Changes in level 3 recurring fair value measurements

The following tables include a rollforward of the Consolidated Balance Sheet amounts (including changes in fair value) for financial instruments classified by the Firm within level 3 of the fair value hierarchy for the years ended December 31, 2012, 2011 and 2010. When a determination is made to classify a financial instrument within level 3, the determination is based on the significance of the unobservable parameters to the overall fair value measurement. However, level 3 financial instruments typically include, in addition to the unobservable or level 3 components, observable components (that is, components that are actively quoted and can be validated to external sources); accordingly, the gains and losses in the table below include changes in fair value due in part to observable factors that are part of the valuation methodology. Also, the Firm risk-manages the observable components of level 3 financial instruments using securities and derivative positions that are classified within level 1 or 2 of the fair value hierarchy;

as these level 1 and level 2 risk management instruments are not included below, the gains or losses in the following tables do not reflect the effect of the Firm's risk management activities related to such level 3 instruments.

## Notes to consolidated financial statements

## Fair value measurements using significant unobservable inputs

Year ended December 31, 2012 (in millions)	Fair value at January 1, 2012	Total realized/unrealized gains/(losses)	Purchases	Sales	Settlements	Transfers into and/or out of level 3 <sup>(h)</sup>	Fair value at Dec. 31, 2012	Change in unrealized gains/(losses) related to financial instruments held at Dec. 31, 2012
Assets:								
Trading assets:								
Debt instruments:								
Mortgage-backed securities:								
U.S. government agencies	\$86	\$ (44 )	\$ 575	\$(103 )	\$ (16 )	\$—	\$498	\$(21 )
Residential – nonagency	796	151	417	(533 )	(145 )	(23 )	663	74
Commercial – nonagency	1,758	(159 )	287	(475 )	(104 )	(100 )	1,207	(145 )
Total mortgage-backed securities	2,640	(52 )	1,279	(1,111 )	(265 )	(123 )	2,368	(92 )
Obligations of U.S. states and municipalities	1,619	37	336	(552 )	(4 )	—	1,436	(15 )
Non-U.S. government debt securities	104	(6 )	661	(668 )	(24 )	—	67	(5 )
Corporate debt securities	6,373	187	8,391	(6,186 )	(3,045 )	(412 )	5,308	689
Loans	12,209	836	5,342	(3,269 )	(3,801 )	(530 )	10,787	411
Asset-backed securities	7,965	272	2,550	(6,468 )	(614 )	(9 )	3,696	184
Total debt instruments	30,910	1,274	18,559	(18,254 )	(7,753 )	(1,074 )	23,662	1,172
Equity securities	1,177	(209 )	460	(379 )	(12 )	77	1,114	(112 )
Other	880	186	68	(108 )	(163 )	—	863	180
Total trading assets – debt and equity instruments	32,967	1,251	(c) 19,087	(18,741)	(7,928 )	(997 )	25,639	1,240
Net derivative receivables: <sup>(a)</sup>								
Interest rate	3,561	6,930	406	(194 )	(7,071 )	(310 )	3,322	905
Credit	7,732	(4,487 )	124	(84 )	(1,416 )	4	1,873	(3,271 )
Foreign exchange	(1,263 )	(800 )	112	(184 )	436	(51 )	(1,750 )	(957 )
Equity	(3,105 )	168	1,676	(2,579 )	899	1,135	(1,806 )	580
Commodity	(687 )	(673 )	74	64	1,278	198	254	(160 )
Total net derivative receivables	6,238	1,138	(c) 2,392	(2,977)	(5,874 )	976	1,893	(2,903 )
Available-for-sale securities:								
Asset-backed securities	24,958	135	9,280	(3,361 )	(3,104 )	116	28,024	118
Other	528	55	667	(113 )	(245 )	—	892	59



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Total available-for-sale securities	25,486	190	(d)	9,947	(3,474)	(3,349)	116	28,916	177	(d)
Loans	1,647	695	(c)	1,536	(22)	(1,718)	144	2,282	12	(c)
Mortgage servicing rights	7,223	(635)	(e)	2,833	(579)	(1,228)	—	7,614	(635)	(e)
Other assets:										
Private equity investments	6,751	420	(c)	1,545	(512)	(977)	(46)	7,181	333	(c)
All other	4,374	(195)	(f)	818	(238)	(501)	—	4,258	(200)	(f)

Fair value measurements using significant unobservable inputs

Year ended December 31, 2012 (in millions)	Fair value at January 1, 2012	Total realized/unrealized (gains)/losses		Purchases	Sales	Issuance	Settlements	Transfers into and/or out of level 3 <sup>(h)</sup>	Fair value at Dec. 31, 2012	Change in unrealized (gains)/losses related to financial instruments held at Dec. 31, 2012	
<b>Liabilities:<sup>(b)</sup></b>											
Deposits	\$1,418	\$ 212	(c)	\$ —	\$ —	\$ 1,236	\$ (380)	\$(503)	\$1,983	\$ 185	(c)
Other borrowed funds	1,507	148	(c)	—	—	1,646	(1,774)	92	1,619	72	(c)
Trading liabilities – debt and equity instruments	211	(16)	(c)	(2,875)	2,940	—	(50)	(5)	205	(12)	(c)
Accounts payable and other liabilities	51	1	(f)	—	—	—	(16)	—	36	1	(f)
Beneficial interests issued by consolidated VIEs	791	181	(c)	—	—	221	(268)	—	925	143	(c)
Long-term debt	10,310	328	(c)	—	—	3,662	(4,511)	(1,313)	8,476	(101)	(c)

## Fair value measurements using significant unobservable inputs

Year ended December 31, 2011 (in millions)	Fair value at January 1, 2011	Total realized/unrealized gains/(losses)	Purchases	Sales	Settlements	Transfers into and/or out of level 3 <sup>(h)</sup>	Fair value at Dec. 31, 2011	Change in unrealized gains/(losses) related to financial instruments held at Dec. 31, 2011
Assets:								
Trading assets:								
Debt instruments:								
Mortgage-backed securities:								
U.S. government agencies	\$ 174	\$ 24	\$ 28	\$(39 )	\$(43 )	\$(58 )	\$86	\$(51 )
Residential – nonagency	687	109	708	(432 )	(221 )	(55 )	796	(9 )
Commercial – nonagency	2,069	37	796	(973 )	(171 )	—	1,758	33
Total mortgage-backed securities	2,930	170	1,532	(1,444)	(435 )	(113 )	2,640	(27 )
Obligations of U.S. states and municipalities	2,257	9	807	(1,465)	(1 )	12	1,619	(11 )
Non-U.S. government debt securities	202	35	552	(531 )	(80 )	(74 )	104	38
Corporate debt securities	4,946	32	8,080	(5,939)	(1,005 )	259	6,373	26
Loans	13,144	329	5,532	(3,873)	(2,691 )	(232 )	12,209	142
Asset-backed securities	8,460	90	4,185	(4,368)	(424 )	22	7,965	(217 )
Total debt instruments	31,939	665	20,688	(17,620)	(4,636 )	(126 )	30,910	(49 )
Equity securities	1,685	267	180	(541 )	(352 )	(62 )	1,177	278
Other	930	48	36	(39 )	(95 )	—	880	79
Total trading assets – debt and equity instruments	34,554	980	(c) 20,904	(18,200)	(5,083 )	(188 )	32,967	308 (c)
Net derivative receivables: <sup>(a)</sup>								
Interest rate	2,836	5,205	511	(219 )	(4,534 )	(238 )	3,561	1,497
Credit	5,386	2,240	22	(13 )	116	(19 )	7,732	2,744
Foreign exchange	(614 )	(1,913 )	191	(20 )	886	207	(1,263 )	(1,878 )
Equity	(2,446 )	(60 )	715	(1,449)	37	98	(3,105 )	(132 )
Commodity	(805 )	596	328	(350 )	(294 )	(162 )	(687 )	208
Total net derivative receivables	4,357	6,068	(c) 1,767	(2,051)	(3,789 )	(114 )	6,238	2,439 (c)
Available-for-sale securities:								
Asset-backed securities	13,775	(95 )	15,268	(1,461)	(2,529 )	—	24,958	(106 )
Other	512	—	57	(15 )	(26 )	—	528	8

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Total available-for-sale securities	14,287	(95 )	(d)	15,325	(1,476)	(2,555 )	—	25,486	(98 )	(d)
Loans	1,466	504	(c)	326	(9 )	(639 )	(1 )	1,647	484	(c)
Mortgage servicing rights	13,649	(7,119 )	(e)	2,603	—	(1,910 )	—	7,223	(7,119 )	(e)
Other assets:										
Private equity investments	7,862	943	(c)	1,452	(2,746)	(594 )	(166 )	6,751	(242 )	(c)
All other	4,179	(54 )	(f)	938	(139 )	(521 )	(29 )	4,374	(83 )	(f)

Fair value measurements using significant unobservable inputs

Year ended December 31, 2011 (in millions)	Fair value at January 1, 2011	Total realized/unrealized (gains)/losses	Purchases	Sales	Issuance	Settlements	Transfers into and/or out of level 3 <sup>(h)</sup>	Fair value at Dec. 31, 2011	Change in unrealized (gains)/losses related to financial instruments held at Dec. 31, 2011		
<b>Liabilities:<sup>(b)</sup></b>											
Deposits	\$773	\$ 15	(c)	\$ —	\$ —	\$ 433	\$(386 )	\$583	\$1,418	\$4	(c)
Other borrowed funds	1,384	(244 )	(c)	—	—	1,597	(834 )	(396 )	1,507	(85 )	(c)
Trading liabilities – debt and equity instruments	54	17	(c)	(533 )	778	—	(109 )	4	211	(7 )	(c)
Accounts payable and other liabilities	236	(61 )	(f)	—	—	—	(124 )	—	51	5	(f)
Beneficial interests issued by consolidated VIEs	873	17	(c)	—	—	580	(679 )	—	791	(15 )	(c)
Long-term debt	13,044	60	(c)	—	—	2,564	(3,218 )	(2,140 )	10,310	288	(c)

## Notes to consolidated financial statements

Year ended December 31, 2010 (in millions)	Fair value measurements using significant unobservable inputs					Fair value at Dec. 31, 2010	Change in unrealized gains/(losses) related to financial instruments held at Dec. 31, 2010
	Fair value at January 1, 2010	Total realized/ unrealized gains/(losses)	Purchases, issuances, settlements, net	Transfers into and/or out of level 3 <sup>(h)</sup>	Fair value at Dec. 31, 2010		
Assets:							
Trading assets:							
Debt instruments:							
Mortgage-backed securities:							
U.S. government agencies	\$260	\$24	\$ (107 )	\$ (3 )	\$174	\$ (31 )	
Residential – nonagency	1,115	178	(564 )	(42 )	687	110	
Commercial – nonagency	1,770	230	(33 )	102	2,069	130	
Total mortgage-backed securities	3,145	432	(704 )	57	2,930	209	
Obligations of U.S. states and municipalities	1,971	2	142	142	2,257	(30 )	
Non-U.S. government debt securities	89	(36 )	194	(45 )	202	(8 )	
Corporate debt securities	5,241	(325 )	115	(85 )	4,946	28	
Loans	13,218	(40 )	1,296	(1,330 )	13,144	(385 )	
Asset-backed securities	8,620	237	(408 )	11	8,460	195	
Total debt instruments	32,284	270	635	(1,250 )	31,939	9	
Equity securities	1,956	133	(351 )	(53 )	1,685	199	
Other	1,441	211	(801 )	79	930	299	
Total trading assets – debt and equity instruments	35,681	614	(c) (517 )	(1,224 )	34,554	507	(c)
Net derivative receivables: <sup>(a)</sup>							
Interest rate	2,040	3,057	(2,520 )	259	2,836	487	
Credit	10,350	(1,757 )	(3,102 )	(105 )	5,386	(1,048 )	
Foreign exchange	1,082	(913 )	(434 )	(349 )	(614 )	(464 )	
Equity	(2,306 )	(194 )	(82 )	136	(2,446 )	(212 )	
Commodity	(329 )	(700 )	134	90	(805 )	(76 )	
Total net derivative receivables	10,837	(507 )	(c) (6,004 )	31	4,357	(1,313 )	(c)
Available-for-sale securities:							
Asset-backed securities	12,732	(146 )	1,189	—	13,775	(129 )	
Other	461	(49 )	37	63	512	18	
Total available-for-sale securities	13,193	(195 )	(d) 1,226	63	14,287	(111 )	(d)
Loans	990	145	(c) 323	8	1,466	37	(c)
Mortgage servicing rights	15,531	(2,268 )	(e) 386	—	13,649	(2,268 )	(e)
Other assets:							
Private equity investments	6,563	1,038	(c) 715	(454 )	7,862	688	(c)
All other	9,521	(113 )	(f) (5,132 )	(97 )	4,179	37	(f)

Fair value measurements using significant unobservable inputs

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Year ended December 31, 2010 (in millions)	Fair value Total at January realized/ 1, 2010 unrealized (gains)/losses net		Purchases, Transfers into and/or at Dec. 31, issuances, into and/or at Dec. 31, settlements, out of level 3 <sup>(h)</sup>		Fair value 2010	Change in unrealized (gains)/losses related to financial instruments held at Dec. 31, 2010
Liabilities: <sup>(b)</sup>						
Deposits	\$476	\$ 54	(c) \$ (86	) \$329	\$773	\$(77 ) <sup>(c)</sup>
Other borrowed funds	542	(242 )	(c) 1,326	(242 )	1,384	445 <sup>(c)</sup>
Trading liabilities – debt and equity instruments	10	2	(c) 19	23	54	—
Accounts payable and other liabilities	355	(138 )	(f) 19	—	236	37 <sup>(f)</sup>
Beneficial interests issued by consolidated VIEs	625	(7 )	(c) 87	168	873	(76 ) <sup>(c)</sup>
Long-term debt	18,287	(532 )	(c) (4,796	) 85	13,044	662 <sup>(c)</sup>

(a) All level 3 derivatives are presented on a net basis, irrespective of underlying counterparty.

(b) Level 3 liabilities as a percentage of total Firm liabilities accounted for at fair value (including liabilities measured at fair value on a nonrecurring basis) were 19%, 22% and 23% at December 31, 2012, 2011 and 2010, respectively.

Predominantly reported in principal transactions revenue, except for changes in fair value for Consumer &

(c) Community Banking (“CCB”) mortgage loans and lending-related commitments originated with the intent to sell, which are reported in mortgage fees and related income.

Realized gains/(losses) on AFS securities, as well as other-than-temporary impairment losses that are recorded in earnings, are reported in securities gains. Unrealized gains/(losses) are reported in OCI. Realized gains/(losses) and foreign exchange remeasurement adjustments recorded in income on AFS securities were \$145 million, \$(240) million, and \$(66) million for the years ended December 31, 2012, 2011 and 2010, respectively. Unrealized gains/(losses) recorded on AFS securities in OCI were \$45 million, \$145 million and \$(129) million for the years ended December 31, 2012, 2011 and 2010, respectively.

(d) Changes in fair value for CCB mortgage servicing rights are reported in mortgage fees and related income.

(e) Largely reported in other income.

(f) Loan originations are included in purchases.

(g) All transfers into and/or out of level 3 are assumed to occur at the beginning of the reporting period.

Level 3 analysis

Consolidated Balance Sheets changes

Level 3 assets (including assets measured at fair value on a nonrecurring basis) were 4.4% of total Firm assets at December 31, 2012. The following describes significant changes to level 3 assets since December 31, 2011, for those items measured at fair value on a recurring basis. For further information on changes impacting items measured at fair value on a nonrecurring basis, see Assets and liabilities measured at fair value on a nonrecurring basis on page 212 of this Annual Report.

For the year ended December 31, 2012

Level 3 assets were \$99.1 billion at December 31, 2012, reflecting a decrease of \$14.3 billion from December 31, 2011, due to the following:

\$11.8 billion decrease in gross derivative receivables, predominantly driven by a \$10.6 billion decrease from the impact of tightening reference entity credit spreads and risk reductions of credit derivatives and \$1.6 billion decrease due to fluctuation in foreign exchange rates;

\$7.3 billion decrease in trading assets – debt and equity instruments, predominantly driven by sales and settlements of ABS, trading loans, and corporate debt securities.

The decreases above are partially offset by:

\$3.1 billion increase in asset-backed AFS securities, predominantly driven by purchases of CLOs.

Gains and Losses

The following describes significant components of total realized/unrealized gains/(losses) for instruments measured at fair value on a recurring basis for the years ended 2012, 2011 and 2010. For further information on these instruments, see Changes in level 3 recurring fair value measurements rollforward tables on pages 207–210 of this Annual Report.

2012  
\$1.3 billion of net gains on trading assets - debt and equity instruments, largely driven by tightening of credit spreads and fluctuation in foreign exchange rates; and

\$1.1 billion of net gains on derivatives, driven by \$6.9 billion of net gains predominantly on interest rate lock commitments due to increased volumes and lower interest rates, partially offset by \$4.5 billion of net losses on credit derivatives largely as a result of tightening of reference entity credit spreads.

2011

\$7.1 billion of losses on MSRs. For further discussion of the change, refer to Note 17 on pages 291–295 of this Annual Report; and

\$6.1 billion of net gains on derivatives, related to declining interest rates and widening of reference entity credit spreads, partially offset by losses due to fluctuation in foreign exchange rates.

2010

\$2.3 billion of losses on MSRs; For further discussion of the change, refer to Note 17 on pages 291–295 of this Annual Report; and

\$1.0 billion gain in private equity largely driven by gains on investments in the portfolio.

## Notes to consolidated financial statements

## Credit adjustments

When determining the fair value of an instrument, it may be necessary to record adjustments to the Firm's estimates of fair value in order to reflect the counterparty credit quality and Firm's own creditworthiness:

Credit valuation adjustments ("CVA") are taken to reflect the credit quality of a counterparty in the valuation of derivatives. CVA adjustments are necessary when the market price (or parameter) is not indicative of the credit quality of the counterparty. As few classes of derivative contracts are listed on an exchange, derivative positions are predominantly valued using models that use as their basis observable market parameters. An adjustment is necessary to reflect the credit quality of each derivative counterparty to arrive at fair value. The adjustment also takes into account contractual factors designed to reduce the Firm's credit exposure to each counterparty, such as collateral and legal rights of offset.

Debit valuation adjustments ("DVA") are taken to reflect the credit quality of the Firm in the valuation of liabilities measured at fair value. The methodology to determine the adjustment is generally consistent with CVA and incorporates JPMorgan Chase's credit spread as observed through the credit default swap ("CDS") market.

The following table provides the credit adjustments, excluding the effect of any hedging activity, reflected within the Consolidated Balance Sheets as of the dates indicated.

December 31, (in millions)	2012	2011	
Derivative receivables balance (net of derivatives CVA)	\$74,983	\$92,477	
Derivatives CVA <sup>(a)</sup>	(4,238	) (6,936	)
Derivative payables balance (net of derivatives DVA)	70,656	74,977	
Derivatives DVA	(830	) (1,420	)
Structured notes balance (net of structured notes DVA) <sup>(b)(c)</sup>	48,112	49,229	
Structured notes DVA	(1,712	) (2,052	)

(a) Derivatives CVA, gross of hedges, includes results managed by the credit portfolio and other lines of business within the Corporate & Investment Bank ("CIB").

(b) Structured notes are recorded within long-term debt, other borrowed funds or deposits on the Consolidated Balance Sheets, depending upon the tenor and legal form of the note.

(c) Structured notes are measured at fair value based on the Firm's election under the fair value option. For further information on these elections, see Note 4 on pages 214–216 of this Annual Report.

The following table provides the impact of credit adjustments on earnings in the respective periods, excluding the effect of any hedging activity.

Year ended December 31, (in millions)	2012	2011	2010
Credit adjustments:			
Derivative CVA <sup>(a)</sup>	\$2,698	\$(2,574	) \$(665
Derivative DVA	(590	) 538	41
Structured notes DVA <sup>(b)</sup>	(340	) 899	468

(a) Derivatives CVA, gross of hedges, includes results managed by the credit portfolio and other lines of business within the CIB.

(b) Structured notes are measured at fair value based on the Firm's election under the fair value option. For further information on these elections, see Note 4 on pages 214–216 of this Annual Report.

## Assets and liabilities measured at fair value on a nonrecurring basis

At December 31, 2012 and 2011, assets measured at fair value on a nonrecurring basis were \$5.1 billion and \$5.3 billion, respectively, comprised predominantly of loans. At December 31, 2012, \$667 million and \$4.4 billion of these assets were classified in levels 2 and 3 of the fair value hierarchy, respectively. At December 31, 2011, \$369 million and \$4.9 billion of these assets were classified in levels 2 and 3 of the fair value hierarchy, respectively. Liabilities measured at fair value on a nonrecurring basis were not significant at December 31, 2012 and 2011. For the years ended December 31, 2012 and 2011, there were no significant transfers between levels 1, 2, and 3.

Of the \$5.1 billion of assets measured at fair value on a nonrecurring basis, \$4.0 billion related to residential real estate loans at the net realizable value of the underlying collateral (i.e., collateral dependent loans). These amounts are classified as level 3, as they are valued using a broker's price opinion and discounted based upon the Firm's experience with actual liquidation values. These discounts to the broker price opinions ranged from 22% to 66%, with a weighted average of 29%.

The total change in the value of assets and liabilities for which a fair value adjustment has been included in the Consolidated Statements of Income for the years ended December 31, 2012, 2011 and 2010, related to financial instruments held at those dates were losses of \$1.6 billion, \$2.2 billion and \$3.6 billion, respectively; these losses were predominantly associated with loans. The changes reported for the year ended December 31, 2012, included the impact of charge-offs recognized on residential real estate loans discharged under Chapter 7 bankruptcy, as described in Note 14 on page 259 of this Annual Report.

For further information about the measurement of impaired collateral-dependent loans, and other loans where the carrying value is based on the fair value of the underlying collateral (e.g., residential mortgage loans charged off in accordance with regulatory guidance), see Note 14 on pages 250–275 of this Annual Report.



Additional disclosures about the fair value of financial instruments that are not carried on the Consolidated Balance Sheets at fair value

U.S. GAAP requires disclosure of the estimated fair value of certain financial instruments, and the methods and significant assumptions used to estimate their fair value. Financial instruments within the scope of these disclosure requirements are included in the following table. However, certain financial instruments and all nonfinancial instruments are excluded from the scope of these disclosure requirements. Accordingly, the fair value disclosures provided in the following table include only a partial estimate of the fair value of JPMorgan Chase's assets and liabilities. For example, the Firm has developed long-term relationships with its customers through its deposit base and credit card accounts, commonly referred to as core deposit intangibles and credit card relationships. In the opinion of management, these items, in the aggregate, add significant value to JPMorgan Chase, but their fair value is not disclosed in this Note.

Financial instruments for which carrying value approximates fair value

Certain financial instruments that are not carried at fair value on the Consolidated Balance Sheets are carried at amounts that approximate fair value, due to their short-term nature and generally negligible credit risk. These instruments include cash and due from banks; deposits with banks; federal funds sold; securities purchased under resale agreements and securities borrowed with short-dated maturities; short-term receivables and accrued interest receivable; commercial paper; federal funds purchased; securities loaned and sold under repurchase agreements with short-dated maturities; other borrowed funds; accounts payable; and accrued liabilities. In addition, U.S. GAAP requires that the fair value for deposit liabilities with no stated maturity (i.e., demand, savings and certain money market deposits) be equal to their carrying value; recognition of the inherent funding value of these instruments is not permitted.

The following table presents the carrying values and estimated fair values at December 31, 2012 and 2011, of financial assets and liabilities that are not carried on the Firm's Consolidated Balance Sheets at fair value (i.e. excluding financial instruments which are carried at fair value on a recurring basis. At December 31, 2012, information is provided on their classification within the fair value hierarchy. For additional information regarding the financial instruments within the scope of this disclosure, and the methods and significant assumptions used to estimate their fair value, see pages 196–200 of this Note.

December 31, (in billions)	2012 Carrying value	2012 Estimated fair value hierarchy			Total estimated fair value	2011	
		Level 1	Level 2	Level 3		Carrying value	Estimated fair value
<b>Financial assets</b>							
Cash and due from banks	\$53.7	\$53.7	\$—	\$—	\$53.7	\$59.6	\$59.6
Deposits with banks	121.8	114.1	7.7	—	121.8	85.3	85.3
Accrued interest and accounts receivable	60.9	—	60.3	0.6	60.9	61.5	61.5
Federal funds sold and securities purchased under resale agreements	272.0	—	272.0	—	272.0	213.1	213.1
Securities borrowed	108.8	—	108.8	—	108.8	127.2	127.2
Loans, net of allowance for loan losses <sup>(a)</sup>	709.3	—	26.4	685.4	711.8	694.0	693.7
Other	49.7	—	42.7	7.4	50.1	49.8	50.3
<b>Financial liabilities</b>							
Deposits	\$1,187.9	\$—	\$1,187.2	\$1.2	\$1,188.4	\$1,122.9	\$1,123.4
Federal funds purchased and securities loaned or sold under repurchase agreements	235.7	—	235.7	—	235.7	206.7	206.7

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Commercial paper	55.4	—	55.4	—	55.4	51.6	51.6
Other borrowed funds	15.0	—	15.0	—	15.0	12.3	12.3
Accounts payable and other liabilities	156.5	—	153.8	2.5	156.3	166.9	166.8
Beneficial interests issued by consolidated VIEs	62.0	—	57.7	4.4	62.1	64.7	64.9
Long-term debt and junior subordinated deferrable interest debentures	218.2	—	220.0	5.4	225.4	222.1	219.5

Fair value is typically estimated using a discounted cash flow model that incorporates the characteristics of the underlying loans (including principal, contractual interest rate and contractual fees) and other key inputs, including expected lifetime credit losses, interest rates, prepayment rates, and primary origination or secondary market spreads. For certain loans, the fair value is measured based on the value of the underlying collateral. The difference between the estimated fair value and carrying value of a financial asset or liability is the result of the different (a) methodologies used to determine fair value as compared with carrying value. For example, credit losses are estimated for a financial asset's remaining life in a fair value calculation but are estimated for a loss emergence period in the allowance for loan loss calculation; future loan income (interest and fees) is incorporated in a fair value calculation but is generally not considered in the allowance for loan losses. For a further discussion of the Firm's methodologies for estimating the fair value of loans and lending-related commitments, see page 198 of this Note.

## Notes to consolidated financial statements

The majority of the Firm's lending-related commitments are not carried at fair value on a recurring basis on the Consolidated Balance Sheets, nor are they actively traded. The carrying value and estimated fair value of the Firm's wholesale lending-related commitments were as follows for the periods indicated.

December 31, (in billions)	2012	Estimated fair value hierarchy			Total estimated fair value	2011	
	Carrying value <sup>(a)</sup>	Level 1	Level 2	Level 3		Carrying value <sup>(a)</sup>	Estimated fair value
Wholesale lending-related commitments	\$0.7	\$—	\$—	\$1.9	\$1.9	\$0.7	\$3.4

(a) Represents the allowance for wholesale lending-related commitments. Excludes the current carrying values of the guarantee liability and the offsetting asset, each of which are recognized at fair value at the inception of guarantees. The Firm does not estimate the fair value of consumer lending-related commitments. In many cases, the Firm can reduce or cancel these commitments by providing the borrower notice or, in some cases, without notice as permitted by law. For a further discussion of the valuation of lending-related commitments, see page 198 of this Note.

## Trading assets and liabilities

Trading assets include debt and equity instruments owned by JPMorgan Chase ("long" positions) that are held for client market-making and client-driven activities, as well as for certain risk management activities, certain loans managed on a fair value basis and for which the Firm has elected the fair value option, and physical commodities inventories that are generally accounted for at the lower of

cost or market (market approximates fair value). Trading liabilities include debt and equity instruments that the Firm has sold to other parties but does not own ("short" positions). The Firm is obligated to purchase instruments at a future date to cover the short positions. Included in trading assets and trading liabilities are the reported receivables (unrealized gains) and payables (unrealized losses) related to derivatives. Trading assets and liabilities are carried at fair value on the Consolidated Balance Sheets. Balances reflect the reduction of securities owned (long positions) by the amount of securities sold but not yet purchased (short positions) when the long and short positions have identical Committee on Uniform Security Identification Procedures numbers ("CUSIPs").

## Trading assets and liabilities – average balances

Average trading assets and liabilities were as follows for the periods indicated.

Year ended December 31, (in millions)	2012	2011	2010
Trading assets – debt and equity instrument <sup>(a)</sup>	\$349,337	\$393,890	\$354,441
Trading assets – derivative receivables	85,744	90,003	84,676
Trading liabilities – debt and equity instrument <sup>(a)(b)</sup>	69,001	81,916	78,159
Trading liabilities – derivative payables	76,162	71,539	65,714

(a) Balances reflect the reduction of securities owned (long positions) by the amount of securities sold, but not yet purchased (short positions) when the long and short positions have identical CUSIP numbers.

(b) Primarily represent securities sold, not yet purchased.

## Note 4 – Fair value option

The fair value option provides an option to elect fair value as an alternative measurement for selected financial assets, financial liabilities, unrecognized firm commitments, and written loan commitments not previously carried at fair value.

## Elections

Elections were made by the Firm to:

Mitigate income statement volatility caused by the differences in the measurement basis of elected instruments (for example, certain instruments elected were previously accounted for on an accrual basis) while the associated risk management arrangements are accounted for on a fair value basis;

• Eliminate the complexities of applying certain accounting models (e.g., hedge accounting or bifurcation accounting for hybrid instruments); and/or

• Better reflect those instruments that are managed on a fair value basis.

Elections include the following:

• Loans purchased or originated as part of securitization warehousing activity, subject to bifurcation accounting, or managed on a fair value basis.

• Securities financing arrangements with an embedded derivative and/or a maturity of greater than one year.

Owned beneficial interests in securitized financial assets that contain embedded credit derivatives, which would otherwise be required to be separately accounted for as a derivative instrument.

Certain investments that receive tax credits and other equity investments acquired as part of the Washington Mutual transaction.

Structured notes issued as part of CIB's client-driven activities. (Structured notes are financial instruments that contain embedded derivatives.)

Long-term beneficial interests issued by CIB's consolidated securitization trusts where the underlying assets are carried at fair value.

#### Changes in fair value under the fair value option election

The following table presents the changes in fair value included in the Consolidated Statements of Income for the years ended December 31, 2012, 2011 and 2010, for items for which the fair value option was elected. The profit and loss information presented below only includes the financial instruments that were elected to be measured at fair value; related risk management instruments, which are required to be measured at fair value, are not included in the table.

December 31, (in millions)	2012			2011			2010			
	Principal transactions	Other income	Total changes in fair value recorded	Principal transactions	Other income	Total changes in fair value recorded	Principal transactions	Other income	Total changes in fair value recorded	
Federal funds sold and securities purchased under resale agreements	\$ 161	\$—	\$ 161	\$ 270	\$—	\$ 270	\$ 173	\$—	\$ 173	
Securities borrowed	10	—	10	(61	)—	(61	) 31	—	31	
Trading assets:										
Debt and equity instruments, excluding loans	513	7	(c) 520	53	(6	) (c) 47	556	(2	) (c) 554	
Loans reported as trading assets:										
Changes in instrument-specific credit risk	1,489	81	(c) 1,570	934	(174	) (c) 760	1,279	(6	) (c) 1,273	
Other changes in fair value	(183	) 7,670	(c) 7,487	127	5,263	(c) 5,390	(312	) 4,449	(c) 4,137	
Loans:										
Changes in instrument-specific credit risk	(14	)—	(14	) 2	—	2	95	—	95	
Other changes in fair value	676	—	676	535	—	535	90	—	90	
Other assets	—	(339	) (d) (339	) (49	) (19	) (d) (68	) —	(263	) (d) (263	)
Deposits <sup>(a)</sup>	(188	)—	(188	) (237	)—	(237	) (564	)—	(564	)
Federal funds purchased and securities loaned or sold under repurchase agreements	(25	)—	(25	) (4	)—	(4	) (29	)—	(29	)

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Other borrowed funds <sup>(a)</sup>	494	—	494	2,986	—	2,986	123	—	123					
Trading liabilities	(41	)—	(41	)	(57	)—	(57	)	(23	)—	(23	)		
Beneficial interests issued by consolidated VIEs	(166	)—	(166	)	(83	)—	(83	)	(12	)—	(12	)		
Other liabilities	—	—	—	(3	)	(5	) <sup>(d)</sup>	(8	)	(9	)	8	<sup>(d)</sup> (1	)
Long-term debt:														
Changes in instrument-specific credit risk <sup>(a)</sup>	(835	)—	(835	)	927	—	927	400	—	400				
Other changes in fair value <sup>(b)</sup>	(1,025	)—	(1,025	)	322	—	322	1,297	—	1,297				

Total changes in instrument-specific credit risk related to structured notes were \$(340) million, \$899 million, and (a) \$468 million for the years ended December 31, 2012, 2011 and 2010, respectively. These totals include adjustments for structured notes classified within deposits and other borrowed funds, as well as long-term debt.

Structured notes are debt instruments with embedded derivatives that are tailored to meet a client's need. The embedded derivative is the primary driver of risk. Although the risk associated with the structured notes is actively (b) managed, the gains/(losses) reported in this table do not include the income statement impact of such risk management instruments.

(c) Reported in mortgage fees and related income.

(d) Reported in other income.

## Notes to consolidated financial statements

Determination of instrument-specific credit risk for items for which a fair value election was made

The following describes how the gains and losses included in earnings during 2012, 2011 and 2010, which were attributable to changes in instrument-specific credit risk, were determined.

Loans and lending-related commitments: For floating-rate instruments, all changes in value are attributed to instrument-specific credit risk. For fixed-rate instruments, an allocation of the changes in value for the period is made between those changes in value that are interest rate-related and changes in value that are credit-related. Allocations are generally based on an analysis of borrower-specific credit spread and

recovery information, where available, or benchmarking to similar entities or industries.

Long-term debt: Changes in value attributable to instrument-specific credit risk were derived principally from observable changes in the Firm's credit spread.

Resale and repurchase agreements, securities borrowed agreements and securities lending agreements: Generally, for these types of agreements, there is a requirement that collateral be maintained with a market value equal to or in excess of the principal amount loaned; as a result, there would be no adjustment or an immaterial adjustment for instrument-specific credit risk related to these agreements.

Difference between aggregate fair value and aggregate remaining contractual principal balance outstanding

The following table reflects the difference between the aggregate fair value and the aggregate remaining contractual principal balance outstanding as of December 31, 2012 and 2011, for loans, long-term debt and long-term beneficial interests for which the fair value option has been elected.

December 31, (in millions)	2012		2011		Fair value over/(under)	
	Contractual principal outstanding	Fair value	contractual principal outstanding	contractual principal outstanding	Fair value	contractual principal outstanding
Loans <sup>(a)</sup>						
Nonaccrual loans						
Loans reported as trading assets	\$4,217	\$960	\$ (3,257 )	\$4,875	\$1,141	\$ (3,734 )
Loans	116	64	(52 )	820	56	(764 )
Subtotal	4,333	1,024	(3,309 )	5,695	1,197	(4,498 )
All other performing loans						
Loans reported as trading assets	44,084	40,581	(3,503 )	37,481	32,657	(4,824 )
Loans	2,211	2,099	(112 )	2,136	1,601	(535 )
Total loans	\$50,628	\$43,704	\$ (6,924 )	\$45,312	\$35,455	\$ (9,857 )
Long-term debt						
Principal-protected debt	\$16,541 <sup>(c)</sup>	\$16,391	\$ (150 )	\$19,417 <sup>(c)</sup>	\$19,890	\$ 473
Nonprincipal-protected debt <sup>(b)</sup>	NA	14,397	NA	NA	14,830	NA
Total long-term debt	NA	\$30,788	NA	NA	\$34,720	NA
Long-term beneficial interests						
Nonprincipal-protected debt <sup>(b)</sup>	NA	\$1,170	NA	NA	\$1,250	NA
Total long-term beneficial interests	NA	\$1,170	NA	NA	\$1,250	NA

<sup>(a)</sup> There were no performing loans which were ninety days or more past due as of December 31, 2012 and 2011, respectively.

<sup>(b)</sup> Remaining contractual principal is not applicable to nonprincipal-protected notes. Unlike principal-protected structured notes, for which the Firm is obligated to return a stated amount of principal at the maturity of the note, nonprincipal-protected structured notes do not obligate the Firm to return a stated amount of principal at maturity,

but to return an amount based on the performance of an underlying variable or derivative feature embedded in the note.

(c) Where the Firm issues principal-protected zero-coupon or discount notes, the balance reflected as the remaining contractual principal is the final principal payment at maturity.

At December 31, 2012 and 2011, the contractual amount of letters of credit for which the fair value option was elected was \$4.5 billion and \$3.9 billion, respectively, with a corresponding fair value of \$(75) million and \$(5) million, respectively. For further information regarding off-balance sheet lending-related financial instruments, see Note 29 on pages 308–315 of this Annual Report.



## Note 5 – Credit risk concentrations

Concentrations of credit risk arise when a number of customers are engaged in similar business activities or activities in the same geographic region, or when they have similar economic features that would cause their ability to meet contractual obligations to be similarly affected by changes in economic conditions.

JPMorgan Chase regularly monitors various segments of its credit portfolio to assess potential concentration risks and to obtain collateral when deemed necessary. Senior management is significantly involved in the credit approval and review process, and risk levels are adjusted as needed to reflect the Firm’s risk appetite.

In the Firm’s consumer portfolio, concentrations are evaluated primarily by product and by U.S. geographic region, with a key focus on trends and concentrations at the portfolio level, where potential risk concentrations can be remedied through changes in underwriting policies and portfolio guidelines. In the wholesale portfolio, risk concentrations are evaluated primarily by industry and monitored regularly on both an aggregate portfolio level and on an individual customer basis. Management of the Firm’s wholesale exposure is accomplished through loan syndications and participations, loan sales, securitizations, credit derivatives, use of master netting agreements, and collateral and other risk-reduction techniques.

The Firm does not believe that its exposure to any particular loan product (e.g., option adjustable rate mortgages (“ARMs”)), industry segment (e.g., commercial real estate) or its exposure to residential real estate loans with high loan-to-value ratios results in a significant concentration of credit risk. Terms of loan products and collateral coverage are included in the Firm’s assessment when extending credit and establishing its allowance for loan losses. Customer receivables representing primarily margin loans to prime and retail brokerage clients of \$23.8 billion and \$17.6 billion at December 31, 2012 and 2011, respectively, are included in the table below. These margin loans are generally over-collateralized through a pledge of assets maintained in clients’ brokerage accounts and are subject to daily minimum collateral requirements. In the event that the collateral value decreases, a maintenance margin call is made to the client to provide additional collateral into the account. If additional collateral is not provided by the client, the client’s positions may be liquidated by the Firm to meet the minimum collateral requirements. As a result of the Firm’s credit risk mitigation practices, the Firm does not hold any reserves for credit impairment on these receivables as of December 31, 2012 and 2011.

The table below presents both on–balance sheet and off–balance sheet consumer and wholesale-related credit exposure by the Firm’s three credit portfolio segments as of December 31, 2012 and 2011.

December 31, (in millions)	2012				2011			
	Credit exposure	On-balance sheet		Off-balance sheet <sup>(c)</sup>	Credit exposure	On-balance sheet		Off-balance sheet <sup>(c)</sup>
		Loans	Derivatives			Loans	Derivatives	
Total consumer, excluding credit card <sup>(a)</sup>	\$352,889	\$292,620	\$—	\$60,156	\$370,834	\$308,427	\$—	\$62,307
Total credit card	661,011	127,993	—	533,018	662,893	132,277	—	530,616
Total consumer	1,013,900	420,613	—	593,174	1,033,727	440,704	—	592,923
Wholesale-related								
Real estate	76,198	60,740	1,084	14,374	67,594	54,684	1,155	11,755
Banks and finance companies	73,318	26,651	19,846	26,821	71,440	29,392	20,372	21,676
Healthcare	48,487	11,638	3,359	33,490	42,247	8,908	3,021	30,318
Oil and gas	42,563	14,704	2,345	25,514	35,437	10,780	3,521	21,136
State and municipal governments	41,821	7,998	5,138	28,685	41,930	7,144	6,575	28,211
Consumer products	32,778	9,151	826	22,801	29,637	9,187	1,079	19,371
Asset managers	31,474	6,220	8,390	16,864	33,465	6,182	9,458	17,825
Utilities	29,533	6,814	2,649	20,070	28,650	5,191	3,602	19,857

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Retail and consumer services	25,597	7,901	429	17,267	22,891	6,353	565	15,973
Central government	21,223	1,333	11,232	8,658	17,138	623	10,813	5,702
Metals/mining	20,958	6,059	624	14,275	15,254	6,073	690	8,491
Transportation	19,827	12,763	673	6,391	16,305	10,000	947	5,358
Machinery and equipment manufacturing	18,504	6,304	592	11,608	16,498	5,111	417	10,970
Technology	18,488	3,806	1,192	13,490	17,898	4,394	1,310	12,194
Media	16,007	3,967	973	11,067	11,909	3,655	202	8,052
All other <sup>(b)</sup>	299,243	120,173	15,631	163,439	285,318	110,718	28,750	145,850
Subtotal	816,019	306,222	74,983	434,814	753,611	278,395	92,477	382,739
Loans held-for-sale and loans at fair value	6,961	6,961	—	—	4,621	4,621	—	—
Receivables from customers and other	23,648	—	—	—	17,461	—	—	—
Total wholesale-related	846,628	313,183	74,983	434,814	\$775,693	\$283,016	92,477	382,739
Total exposure <sup>(d)</sup>	\$1,860,528	\$733,796	\$74,983	\$1,027,988	\$1,809,420	\$723,720	\$92,477	\$975,662

(a) As of December 31, 2012 and 2011, credit exposure for total consumer, excluding credit card, includes receivables from customers of \$113 million and \$100 million, respectively.

(b) For more information on exposures to SPEs included within All other see Note 16 on pages 280–291 of this Annual Report.

(c) Represents lending-related financial instruments.

For further information regarding on–balance sheet credit concentrations by major product and/or geography, see

(d) Notes 6, 14 and 15 on pages 218–227, 250–275 and 276–279, respectively, of this Annual Report. For information regarding concentrations of off–balance sheet lending-related financial instruments by major product, see Note 29 on pages 308–315 of this Annual Report.

## Notes to consolidated financial statements

## Note 6 – Derivative instruments

Derivative instruments enable end-users to modify or mitigate exposure to credit or market risks. Counterparties to a derivative contract seek to obtain risks and rewards similar to those that could be obtained from purchasing or selling a related cash instrument without having to exchange upfront the full purchase or sales price. JPMorgan Chase makes markets in derivatives for customers and also uses derivatives to hedge or manage its own risk exposures.

Predominantly all of the Firm's derivatives are entered into for market-making or risk management purposes.

## Market-making derivatives

The majority of the Firm's derivatives are entered into for market-making purposes. Customers use derivatives to mitigate or modify interest rate, credit, foreign exchange, equity and commodity risks. The Firm actively manages the risks from its exposure to these derivatives by entering into other derivative transactions or by purchasing or selling other financial instruments that partially or fully offset the exposure from client derivatives. The Firm also seeks to earn a spread between the client derivatives and offsetting positions, and from the remaining open risk positions.

## Risk management derivatives

The Firm manages its market risk exposures using various derivative instruments.

Interest rate contracts are used to minimize fluctuations in earnings that are caused by changes in interest rates.

Fixed-rate assets and liabilities appreciate or depreciate in market value as interest rates change. Similarly, interest income and expense increases or decreases as a result of variable-rate assets and liabilities resetting to current market rates, and as a result of the repayment and subsequent origination or issuance of fixed-rate assets and liabilities at current market rates. Gains or losses on the derivative instruments that are related to such assets and liabilities are expected to substantially offset this variability in earnings. The Firm generally uses interest rate swaps, forwards and futures to manage the impact of interest rate fluctuations on earnings.

Foreign currency forward contracts are used to manage the foreign exchange risk associated with certain foreign currency-denominated (i.e., non-U.S. dollar) assets and liabilities and forecasted transactions, as well as the Firm's net investments in certain non-U.S. subsidiaries or branches whose functional currencies are not the U.S. dollar. As a result of fluctuations in foreign currencies, the U.S. dollar-equivalent values of the foreign currency-denominated assets and liabilities or forecasted revenue or expense increase or decrease. Gains or losses on the derivative instruments related to these foreign currency-denominated assets or liabilities, or forecasted transactions, are expected to substantially offset this variability.

Commodities contracts are used to manage the price risk of certain commodities inventories. Gains or losses on these derivative instruments are expected to substantially offset the depreciation or appreciation of the related inventory.

Also in the commodities portfolio, electricity and natural gas futures and forwards contracts are used to manage price risk associated with energy-related tolling and load-serving contracts and investments.

The Firm uses credit derivatives to manage the counterparty credit risk associated with loans and lending-related commitments. Credit derivatives compensate the purchaser when the entity referenced in the contract experiences a credit event, such as bankruptcy or a failure to pay an obligation when due. Credit derivatives primarily consist of credit default swaps. For a further discussion of credit derivatives, see the discussion in the Credit derivatives section on pages 226–227 of this Note.

For more information about risk management derivatives, see the risk management derivatives gains and losses table on page 224 of this Note, and the hedge accounting gains and losses tables on pages 222–224 of this Note.

## Accounting for derivatives

All free-standing derivatives are required to be recorded on the Consolidated Balance Sheets at fair value. As permitted under U.S. GAAP, the Firm nets derivative assets and liabilities, and the related cash collateral receivables and payables, when a legally enforceable master netting agreement exists between the Firm and the derivative counterparty. The accounting for changes in value of a derivative depends on whether or not the transaction has been designated and qualifies for hedge accounting. Derivatives that are not designated as hedges are reported and measured at fair value through earnings. The tabular disclosures on pages 220–227 of this Note provide additional information on the amount of, and reporting for, derivative assets, liabilities, gains and losses. For further discussion of derivatives embedded in structured notes, see Notes 3 and 4 on pages 196–214 and 214–216, respectively, of this

Annual Report.

Derivatives designated as hedges

The Firm applies hedge accounting to certain derivatives executed for risk management purposes – generally interest rate, foreign exchange and commodity derivatives. However, JPMorgan Chase does not seek to apply hedge accounting to all of the derivatives involved in the Firm’s risk management activities. For example, the Firm does not apply hedge accounting to purchased credit default swaps used to manage the credit risk of loans and lending-related commitments, because of the difficulties in qualifying such contracts as hedges. For the same reason, the Firm does not apply hedge accounting to certain interest rate and commodity derivatives used for risk management purposes. To qualify for hedge accounting, a derivative must be highly effective at reducing the risk associated with the exposure being hedged. In addition, for a derivative to be designated as a hedge, the risk management objective and strategy must be documented. Hedge documentation must identify the derivative hedging instrument, the asset or liability or forecasted transaction and type of risk to be hedged, and how the effectiveness of the derivative is assessed

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prospectively and retrospectively. To assess effectiveness, the Firm uses statistical methods such as regression analysis, as well as nonstatistical methods including dollar-value comparisons of the change in the fair value of the derivative to the change in the fair value or cash flows of the hedged item. The extent to which a derivative has been, and is expected to continue to be, effective at offsetting changes in the fair value or cash flows of the hedged item must be assessed and documented at least quarterly. Any hedge ineffectiveness (i.e., the amount by which the gain or loss on the designated derivative instrument does not exactly offset the change in the hedged item attributable to the hedged risk) must be reported in current-period earnings. If it is determined that a derivative is not highly effective at hedging the designated exposure, hedge accounting is discontinued.

There are three types of hedge accounting designations: fair value hedges, cash flow hedges and net investment hedges. JPMorgan Chase uses fair value hedges primarily to hedge fixed-rate long-term debt, AFS securities and certain commodities inventories. For qualifying fair value hedges, the changes in the fair value of the derivative, and in the value of the hedged item for the risk being hedged, are recognized in earnings. If the hedge relationship is terminated, then the adjustment to the hedged item continues to be reported as part of the basis of the hedged item and for interest-bearing instruments is amortized to earnings as a yield adjustment. Derivative amounts affecting earnings are recognized consistent with the classification of the hedged item – primarily net interest income and principal transactions revenue.

JPMorgan Chase uses cash flow hedges primarily to hedge the exposure to variability in forecasted cash flows from floating-rate assets and liabilities and foreign currency-denominated revenue and expense. For qualifying cash flow hedges, the effective portion of the change in the fair value of the derivative is recorded in OCI and recognized in the Consolidated Statements of Income when the hedged cash flows affect earnings. Derivative amounts affecting earnings are recognized consistent with the classification of the hedged item – primarily interest income, interest expense, noninterest revenue and compensation expense. The ineffective portions of cash flow hedges are immediately recognized in earnings. If the hedge relationship is terminated, then the value of the derivative recorded in accumulated other comprehensive income/(loss) (“AOCI”) is recognized in earnings when the cash flows that were hedged affect earnings. For hedge relationships that are discontinued because a forecasted transaction is not expected to occur according to the original hedge forecast, any related derivative values recorded in AOCI are immediately recognized in earnings.

JPMorgan Chase uses foreign currency hedges to protect the value of the Firm’s net investments in certain non-U.S. subsidiaries or branches whose functional currencies are not the U.S. dollar. For foreign currency qualifying net investment hedges, changes in the fair value of the derivatives are recorded in the translation adjustments account within AOCI.

The following table outlines the Firm’s primary uses of derivatives and the related hedge accounting designation or disclosure category.

Type of Derivative	Use of Derivative	Designation and disclosure	Affected segment or unit	Page reference
Manage specifically identified risk exposures in qualifying hedge accounting relationships:				
Interest rate	Hedge fixed rate assets and liabilities	Fair value hedge	Corporate/PE	222
Interest rate	Hedge floating rate assets and liabilities	Cash flow hedge	Corporate/PE	223
Foreign exchange	Hedge foreign currency-denominated assets and liabilities	Fair value hedge	Corporate/PE	222
Foreign exchange	Hedge forecasted revenue and expense	Cash flow hedge	Corporate/PE	223
Foreign exchange	Hedge the value of the Firm’s investments in non-U.S. subsidiaries	Net investment hedge	Corporate/PE	224
Commodity	Hedge commodity inventory	Fair value hedge	CIB	222

Manage specifically identified risk exposures not designated in qualifying hedge accounting relationships:

Interest rate	Manage the risk of the mortgage pipeline, warehouse loans and MSRs	Specified risk management	CCB	224
Credit	Manage the credit risk of wholesale lending exposures	Specified risk management	CIB	224
Credit <sup>(a)</sup>	Manage the credit risk of certain AFS securities	Specified risk management	Corporate/PE	224
Commodity	Manage the risk of certain commodities-related contracts and investments	Specified risk management	CIB	224
Interest rate and foreign exchange	Manage the risk of certain other specified assets and liabilities	Specified risk management	Corporate/PE	224
Market-making derivatives and other activities:				
• Various	Market-making and related risk management	Market-making and other	CIB	224
• Various	Other derivatives, including the synthetic credit portfolio	Market-making and other	CIB, Corporate/PE	224
(a)	Includes a limited number of single-name credit derivatives used to mitigate the credit risk arising from specified AFS securities.			

## Notes to consolidated financial statements

## Notional amount of derivative contracts

The following table summarizes the notional amount of derivative contracts outstanding as of December 31, 2012 and 2011.

December 31, (in billions)	Notional amounts <sup>(b)</sup>	
	2012	2011
Interest rate contracts		
Swaps	\$33,183	\$38,704
Futures and forwards	11,824	7,888
Written options	3,866	3,842
Purchased options	3,911	4,026
Total interest rate contracts	52,784	54,460
Credit derivatives <sup>(a)</sup>	5,981	5,774
Foreign exchange contracts		
Cross-currency swaps	3,355	2,931
Spot, futures and forwards	4,033	4,512
Written options	651	674
Purchased options	661	670
Total foreign exchange contracts	8,700	8,787
Equity contracts		
Swaps	163	119
Futures and forwards	49	38
Written options	442	460
Purchased options	403	405
Total equity contracts	1,057	1,022
Commodity contracts		
Swaps	313	341
Spot, futures and forwards	190	188
Written options	265	310
Purchased options	260	274
Total commodity contracts	1,028	1,113
Total derivative notional amounts	\$69,550	\$71,156

(a) Primarily consists of credit default swaps. For more information on volumes and types of credit derivative contracts, see the Credit derivatives discussion on pages 226–227 of this Note.

(b) Represents the sum of gross long and gross short third-party notional derivative contracts.

While the notional amounts disclosed above give an indication of the volume of the Firm's derivatives activity, the notional amounts significantly exceed, in the Firm's view, the possible losses that could arise from such transactions. For most derivative transactions, the notional amount is not exchanged; it is used simply as a reference to calculate payments.

## Synthetic credit portfolio

The synthetic credit portfolio is a portfolio of index credit derivatives, including short and long positions, that was held by CIO. On July 2, 2012, CIO transferred the synthetic credit portfolio, other than a portion that aggregated to a notional amount of approximately \$12 billion, to CIB. The positions making up the portion of the synthetic credit portfolio retained by CIO on July 2, 2012, were effectively closed out during the third quarter of 2012. The results of the synthetic credit portfolio, including the portion transferred to CIB, have been included in the gains and losses on derivatives related to market-making activities and other derivatives category discussed on page 224 of this Note.





## Impact of derivatives on the Consolidated Balance Sheets

The following table summarizes information on derivative receivables and payables (before and after netting adjustments) that are reflected on the Firm's Consolidated Balance Sheets as of December 31, 2012 and 2011, by accounting designation (e.g., whether the derivatives were designated in qualifying hedge accounting relationships or not) and contract type.

Free-standing derivative receivables and payables<sup>(a)</sup>

December 31, 2012 (in millions)	Gross derivative receivables			Net derivative receivables <sup>(c)</sup>	Gross derivative payables			Net derivative payables <sup>(c)</sup>
	Not designated as hedges	Designated as hedges	Total derivative receivables		Not designated as hedges	Designated as hedges	Total derivative payables	
Trading assets and liabilities								
Interest rate	\$1,323,184	\$6,064	\$1,329,248	\$39,205	\$1,284,494	\$3,120	\$1,287,614	\$24,906
Credit	100,310	—	100,310	1,735	100,027	—	100,027	2,504
Foreign exchange <sup>(b)</sup>	146,682	1,577	148,259	14,142	159,509	2,133	161,642	18,601
Equity	40,938	—	40,938	9,266	42,810	—	42,810	11,819
Commodity	43,039	586	43,625	10,635	46,821	644	47,465	12,826
Total fair value of trading assets and liabilities	\$1,654,153	\$8,227	\$1,662,380	\$74,983	\$1,633,661	\$5,897	\$1,639,558	\$70,656

December 31, 2011 (in millions)	Gross derivative receivables			Net derivative receivables <sup>(c)</sup>	Gross derivative payables			Net derivative payables <sup>(c)</sup>
	Not designated as hedges	Designated as hedges	Total derivative receivables		Not designated as hedges	Designated as hedges	Total derivative payables	
Trading assets and liabilities								
Interest rate	\$1,433,900	\$7,621	\$1,441,521	\$46,369	\$1,397,625	\$2,192	\$1,399,817	\$28,010
Credit	169,650	—	169,650	6,684	165,121	—	165,121	5,610
Foreign exchange <sup>(b)</sup>	163,497	4,666	168,163	17,890	165,353	655	166,008	17,435
Equity	47,736	—	47,736	6,793	46,366	—	46,366	9,655
Commodity	53,894	3,535	57,429	14,741	58,836	1,108	59,944	14,267
Total fair value of trading assets and liabilities	\$1,868,677	\$15,822	\$1,884,499	\$92,477	\$1,833,301	\$3,955	\$1,837,256	\$74,977

(a) Balances exclude structured notes for which the fair value option has been elected. See Note 4 on pages 214–216 of this Annual Report for further information.

(b) Excludes \$11 million of foreign currency-denominated debt designated as a net investment hedge at December 31, 2011. Foreign currency-denominated debt was not designated as a hedging instrument at December 31, 2012.

(c) As permitted under U.S. GAAP, the Firm has elected to net derivative receivables and derivative payables and the related cash collateral receivables and payables when a legally enforceable master netting agreement exists.

## Notes to consolidated financial statements

## Impact of derivatives on the Consolidated Statements of Income

The following tables provide information related to gains and losses recorded on derivatives based on their hedge accounting designation or purpose.

## Fair value hedge gains and losses

The following tables present derivative instruments, by contract type, used in fair value hedge accounting relationships, as well as pretax gains/(losses) recorded on such derivatives and the related hedged items for the years ended December 31, 2012, 2011 and 2010, respectively. The Firm includes gains/(losses) on the hedging derivative and the related hedged item in the same line item in the Consolidated Statements of Income.

Year ended December 31, 2012 (in millions)	Gains/(losses) recorded in income			Income statement impact due to:	
	Derivatives	Hedged items	Total income statement impact	Hedge ineffectiveness <sup>(e)</sup>	Excluded components <sup>(f)</sup>
Contract type					
Interest rate <sup>(a)</sup>	\$(1,238 )	\$1,879	\$641	\$(28 )	\$669
Foreign exchange <sup>(b)</sup>	(3,027 ) <sup>(d)</sup>	2,925	(102 )	—	(102 )
Commodity <sup>(c)</sup>	(2,530 )	1,131	(1,399 )	107	(1,506 )
Total	\$(6,795 )	\$5,935	\$(860 )	\$79	\$(939 )

Year ended December 31, 2011 (in millions)	Gains/(losses) recorded in income			Income statement impact due to:	
	Derivatives	Hedged items	Total income statement impact	Hedge ineffectiveness <sup>(e)</sup>	Excluded components <sup>(f)</sup>
Contract type					
Interest rate <sup>(a)</sup>	\$532	\$33	\$565	\$104	\$461
Foreign exchange <sup>(b)</sup>	5,684 <sup>(d)</sup>	(3,761 )	1,923	—	1,923
Commodity <sup>(c)</sup>	1,784	(2,880 )	(1,096 )	(10 )	(1,086 )
Total	\$8,000	\$(6,608 )	\$1,392	\$94	\$1,298

Year ended December 31, 2010 (in millions)	Gains/(losses) recorded in income			Income statement impact due to:	
	Derivatives	Hedged items	Total income statement impact	Hedge ineffectiveness <sup>(e)</sup>	Excluded components <sup>(f)</sup>
Contract type					
Interest rate <sup>(a)</sup>	\$1,102	\$(376 )	\$726	\$175	\$551
Foreign exchange <sup>(b)</sup>	1,357 <sup>(d)</sup>	(1,812 )	(455 )	—	(455 )
Commodity <sup>(c)</sup>	(1,354 )	1,882	528	—	528
Total	\$1,105	\$(306 )	\$799	\$175	\$624

Primarily consists of hedges of the benchmark (e.g., London Interbank Offered Rate (“LIBOR”)) interest rate risk of fixed-rate long-term debt and AFS securities. Gains and losses were recorded in net interest income. The current presentation excludes accrued interest. Prior period amounts have been revised to conform with the current presentation.

- Primarily consists of hedges of the foreign currency risk of long-term debt and AFS securities for changes in spot
- (b) foreign currency rates. Gains and losses related to the derivatives and the hedged items, due to changes in foreign currency rates, were recorded in principal transactions revenue and net interest income.
  - (c) Consists of overall fair value hedges of physical commodities inventories that are generally carried at the lower of cost or market (market approximates fair value). Gains and losses were recorded in principal transactions revenue. Included \$(3.1) billion, \$4.9 billion and \$278 million for the years ended December 31, 2012, 2011 and 2010,
  - (d) respectively, of revenue related to certain foreign exchange trading derivatives designated as fair value hedging instruments.
  - (e) Hedge ineffectiveness is the amount by which the gain or loss on the designated derivative instrument does not exactly offset the gain or loss on the hedged item attributable to the hedged risk.
  - (f) The assessment of hedge effectiveness excludes certain components of the changes in fair values of the derivatives and hedged items such as forward points on foreign exchange forward contracts and time values.

Cash flow hedge gains and losses

The following tables present derivative instruments, by contract type, used in cash flow hedge accounting relationships, and the pretax gains/(losses) recorded on such derivatives, for the years ended December 31, 2012, 2011 and 2010, respectively. The Firm includes the gain/(loss) on the hedging derivative and the change in cash flows on the hedged item in the same line item in the Consolidated Statements of Income.

Year ended December 31, 2012 (in millions)	Gains/(losses) recorded in income and other comprehensive income/(loss) <sup>(c)</sup>				
	Derivatives – effective portion reclassified from AOCI to income	Hedge ineffectiveness recorded directly in income <sup>(d)</sup>	Total income statement impact	Derivatives – effective portion recorded in OCI	Total change in OCI for period
Contract type					
Interest rate <sup>(a)</sup>	\$ (3)	) \$ 5	\$ 2	\$ 13	\$ 16
Foreign exchange <sup>(b)</sup>	31	—	31	128	97
Total	\$ 28	\$ 5	\$ 33	\$ 141	\$ 113

Year ended December 31, 2011 (in millions)	Gains/(losses) recorded in income and other comprehensive income/(loss) <sup>(c)</sup>				
	Derivatives – effective portion reclassified from AOCI to income	Hedge ineffectiveness recorded directly in income <sup>(d)</sup>	Total income statement impact	Derivatives – effective portion recorded in OCI	Total change in OCI for period
Contract type					
Interest rate <sup>(a)</sup>	\$ 310	\$ 19	\$ 329	\$ 107	\$(203)
Foreign exchange <sup>(b)</sup>	(9)	)—	(9)	) (57)	) (48)
Total	\$ 301	\$ 19	\$ 320	\$ 50	\$(251)

Year ended December 31, 2010 (in millions)	Gains/(losses) recorded in income and other comprehensive income/(loss) <sup>(c)</sup>				
	Derivatives – effective portion reclassified from AOCI to income	Hedge ineffectiveness recorded directly in income <sup>(d)</sup>	Total income statement impact	Derivatives – effective portion recorded in OCI	Total change in OCI for period
Contract type					
Interest rate <sup>(a)</sup>	\$ 288	\$ 20	\$ 308	\$ 388	\$ 100
Foreign exchange <sup>(b)</sup>	(82)	) (3)	) (85)	) (141)	) (59)
Total	\$ 206	\$ 17	\$ 223	\$ 247	\$ 41

(a) Primarily consists of benchmark interest rate hedges of LIBOR-indexed floating-rate assets and floating-rate liabilities. Gains and losses were recorded in net interest income.

(b) Primarily consists of hedges of the foreign currency risk of non-U.S. dollar-denominated revenue and expense. The (b) income statement classification of gains and losses follows the hedged item – primarily net interest income, noninterest revenue and compensation expense.

(c) The Firm did not experience any forecasted transactions that failed to occur for the years ended December 31, 2012 and 2011. In 2010, the Firm reclassified a \$25 million loss from AOCI to earnings because the Firm determined

that it was probable that forecasted interest payment cash flows related to certain wholesale deposits would not occur.

Hedge ineffectiveness is the amount by which the cumulative gain or loss on the designated derivative instrument (d)exceeds the present value of the cumulative expected change in cash flows on the hedged item attributable to the hedged risk.

Over the next 12 months, the Firm expects that \$32 million (after-tax) of net losses recorded in AOCI at December 31, 2012, related to cash flow hedges will be recognized in income. The maximum length of time over which forecasted transactions are hedged is 8 years, and such transactions primarily relate to core lending and borrowing activities.

## Notes to consolidated financial statements

## Net investment hedge gains and losses

The following tables present hedging instruments, by contract type, that were used in net investment hedge accounting relationships, and the pretax gains/(losses) recorded on such instruments for the years ended December 31, 2012, 2011 and 2010.

Year ended December 31, (in millions)	Gains/(losses) recorded in income and other comprehensive income/(loss)					
	2012		2011		2010	
Contract type	Excluded components recorded directly in income <sup>(a)</sup>	Effective portion recorded in OCI	Excluded components recorded directly in income <sup>(a)</sup>	Effective portion recorded in OCI	Excluded components recorded directly in income <sup>(a)</sup>	Effective portion recorded in OCI
Foreign exchange derivatives	\$(306)	\$(82)	\$(251)	\$225	\$(139)	\$(30)
Foreign currency denominated debt	—	—	—	1	—	41
Total	\$(306)	\$(82)	\$(251)	\$226	\$(139)	\$11

Certain components of hedging derivatives are permitted to be excluded from the assessment of hedge effectiveness, such as forward points on foreign exchange forward contracts. Amounts related to excluded (a) components are recorded in current-period income. The Firm measures the ineffectiveness of net investment hedge accounting relationships based on changes in spot foreign currency rates, and therefore there was no ineffectiveness for net investment hedge accounting relationships during 2012, 2011 and 2010.

## Gains and losses on derivatives used for specified risk management purposes

The following table presents pretax gains/(losses) recorded on a limited number of derivatives, not designated in hedge accounting relationships, that are used to manage risks associated with certain specified assets and liabilities, including certain risks arising from the mortgage pipeline, warehouse loans, MSR, wholesale lending exposures, AFS securities, foreign currency-denominated liabilities, and commodities related contracts and investments.

Year ended December 31, (in millions)	Derivatives gains/(losses) recorded in income		
	2012	2011	2010
Contract type			
Interest rate <sup>(a)</sup>	\$5,353	\$8,084	\$4,987
Credit <sup>(b)</sup>	(175)	(52)	(237)
Foreign exchange <sup>(c)</sup>	47	(157)	(64)
Commodity <sup>(d)</sup>	94	41	(48)
Total	\$5,319	\$7,916	\$4,638

Primarily relates to interest rate derivatives used to hedge the interest rate risks associated with the mortgage (a) pipeline, warehouse loans and MSR. Gains and losses were recorded predominantly in mortgage fees and related income.

Relates to credit derivatives used to mitigate credit risk associated with lending exposures in the Firm's wholesale businesses, and single-name credit derivatives used to mitigate credit risk arising from certain AFS securities.

(b) These derivatives do not include the synthetic credit portfolio or credit derivatives used to mitigate counterparty credit risk arising from derivative receivables, both of which are included in gains and losses on derivatives related to market-making activities and other derivatives. Gains and losses were recorded in principal transactions revenue.

(c) Primarily relates to hedges of the foreign exchange risk of specified foreign currency-denominated liabilities. Gains and losses were recorded in principal transactions revenue and net interest income.

(d) Primarily relates to commodity derivatives used to mitigate energy price risk associated with energy-related contracts and investments. Gains and losses were recorded in principal transactions revenue.

Gains and losses on derivatives related to market-making activities and other derivatives

The Firm makes markets in derivatives in order to meet the needs of customers and uses derivatives to manage certain risks associated with net open risk positions from the Firm's market-making activities, including the counterparty credit risk arising from derivative receivables. These derivatives, as well as all other derivatives (including the synthetic credit portfolio) that are not included in the hedge accounting or specified risk management categories above, are included in this category. Gains and losses on these derivatives are recorded in principal transactions revenue. See Note 7 on pages 228–229 of this Annual Report for information on principal transactions revenue.

Credit risk, liquidity risk and credit-related contingent features

In addition to the specific market risks introduced by each derivative contract type, derivatives expose JPMorgan Chase to credit risk — the risk that derivative counterparties may fail to meet their payment obligations under the derivative contracts and the collateral, if any, held by the Firm proves to be of insufficient value to cover the payment obligation. It is the policy of JPMorgan Chase to actively pursue the use of legally enforceable master netting arrangements and collateral agreements to mitigate derivative counterparty credit risk. The amount of derivative receivables reported on the Consolidated Balance Sheets is the fair value of the derivative contracts after giving effect to legally enforceable master netting agreements and cash collateral held by the Firm.

While derivative receivables expose the Firm to credit risk, derivative payables expose the Firm to liquidity risk, as the derivative contracts typically require the Firm to post cash or securities collateral with counterparties as the fair value of the contracts moves in the counterparties' favor or upon specified downgrades in the Firm's and its subsidiaries' respective credit ratings. Certain derivative contracts also provide for termination of the contract, generally upon a downgrade of either the Firm or the counterparty, at the fair value of the derivative contracts. The following table shows the aggregate fair value of net derivative payables that contain contingent collateral or termination features

that may be triggered upon a downgrade and the associated collateral the Firm has posted in the normal course of business at December 31, 2012 and 2011.

Derivative payables containing downgrade triggers

December 31, (in millions)	2012	2011
Aggregate fair value of net derivative payables <sup>(a)</sup>	\$40,844	\$39,316
Collateral posted <sup>(a)</sup>	34,414	31,473

<sup>(a)</sup> The current period presentation excludes contracts with downgrade triggers that were in a net receivable position. Prior period amounts have been revised to conform with the current presentation.

The following table shows the impact of a single-notch and two-notch ratings downgrade to JPMorgan Chase & Co. and its subsidiaries, predominantly JPMorgan Chase Bank, National Association ("JPMorgan Chase Bank, N.A."), at December 31, 2012 and 2011, related to derivative contracts with contingent collateral or termination features that may be triggered upon a ratings downgrade. Derivatives contracts generally require additional collateral to be posted or terminations to be triggered when the predefined threshold rating is breached. A downgrade by a single rating agency that does not result in a rating lower than a preexisting corresponding rating provided by another major rating agency will generally not result in additional collateral or termination payment requirements. The liquidity impact in the table is calculated based upon a downgrade below the lowest current rating provided by major rating agencies.

Liquidity impact of derivative downgrade triggers

December 31, (in millions)	2012		2011	
	Single-notch downgrade	Two-notch downgrade	Single-notch downgrade	Two-notch downgrade
Additional portion of net derivative payable to be posted as collateral upon downgrade	\$1,012	\$1,664	\$1,460	\$2,054
Amount required to settle contracts with termination triggers upon downgrade <sup>(a)</sup>	857	1,270	1,054	1,923

<sup>(a)</sup> Amounts represent fair value of derivative payables, and do not reflect collateral posted.

The following tables show the carrying value of derivative receivables and payables after netting adjustments, and adjustments

for collateral held (including cash, U.S. government and agency securities and other G7 government bonds) and transferred as

of December 31, 2012 and 2011.

Impact of netting adjustments on derivative receivables and payables

December 31, (in millions)	Derivative receivables		Derivative payables	
	2012	2011	2012	2011
Gross derivative fair value	\$1,662,380	\$1,884,499	\$1,639,558	\$1,837,256
Netting adjustment – offsetting receivables/payables <sup>(a)</sup>	(1,508,244 )	(1,710,523 )	(1,508,244 )	(1,710,523 )
Netting adjustment – cash collateral received/paid <sup>(b)</sup>	(79,153 )	(81,499 )	(60,658 )	(51,756 )
Carrying value on Consolidated Balance Sheets	\$74,983	\$92,477	\$70,656	\$74,977
Total derivative collateral				

December 31, (in millions)	Collateral held		Collateral transferred	
	2012	2011	2012	2011
Netting adjustment for cash collateral <sup>(a)</sup>	\$79,153	\$81,499	\$60,658	\$51,756



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Liquid securities and other cash collateral <sup>(b)</sup>	13,658	21,807	21,767	19,439
Additional liquid securities and cash collateral <sup>(c)</sup>	22,562	17,613	9,635	10,824
Total collateral for derivative transactions	\$115,373	\$120,919	\$92,060	\$82,019

(a) As permitted under U.S. GAAP, the Firm has elected to net derivative receivables and derivative payables and the related cash collateral received and paid when a legally enforceable master netting agreement exists.

(b) Represents cash collateral received and paid that is not subject to a legally enforceable master netting agreement, and liquid securities collateral held and transferred.

Represents liquid securities and cash collateral held and transferred at the initiation of derivative transactions, which is available as security against potential exposure that could arise should the fair value of the transactions move, as well as collateral held and transferred related to contracts that have non-daily call frequency for collateral (c) to be posted, and collateral that the Firm or a counterparty has agreed to return but has not yet settled as of the reporting date. These amounts were not netted against the derivative receivables and payables in the tables above, because, at an individual counterparty level, the collateral exceeded the fair value exposure at both December 31, 2012 and 2011.

## Notes to consolidated financial statements

## Credit derivatives

Credit derivatives are financial instruments whose value is derived from the credit risk associated with the debt of a third-party issuer (the reference entity) and which allow one party (the protection purchaser) to transfer that risk to another party (the protection seller). Credit derivatives expose the protection purchaser to the creditworthiness of the protection seller, as the protection seller is required to make payments under the contract when the reference entity experiences a credit event, such as a bankruptcy, a failure to pay its obligation or a restructuring. The seller of credit protection receives a premium for providing protection but has the risk that the underlying instrument referenced in the contract will be subject to a credit event.

The Firm is both a purchaser and seller of protection in the credit derivatives market and uses these derivatives for two primary purposes. First, in its capacity as a market-maker, the Firm actively manages a portfolio of credit derivatives by purchasing and selling credit protection, predominantly on corporate debt obligations, to meet the needs of customers. Second, as an end-user, the Firm uses credit derivatives to manage credit risk associated with lending exposures (loans and unfunded commitments) and derivatives counterparty exposures in the Firm's wholesale businesses, and to manage the credit risk arising from certain AFS securities and from certain financial instruments in the Firm's market-making businesses. For more information on the synthetic credit portfolio, see the discussion on page 220 of this Note. Following is a summary of various types of credit derivatives.

## Credit default swaps

Credit derivatives may reference the credit of either a single reference entity ("single-name") or a broad-based index. The Firm purchases and sells protection on both single-name and index-reference obligations. Single-name CDS and index CDS contracts are OTC derivative contracts. Single-name CDS are used to manage the default risk of a single reference entity, while index CDS contracts are used to manage the credit risk associated with the broader credit markets or credit market segments. Like the S&P 500 and other market indices, a CDS index comprises a portfolio of CDS across many reference entities. New series of CDS indices are periodically established with a new underlying portfolio of reference entities to reflect changes in the credit markets. If one of the reference entities in the index experiences a credit event, then the reference entity that defaulted is removed from the index. CDS can also be referenced against specific portfolios of reference names or against customized exposure levels based on specific client demands: for example, to provide protection against the first \$1 million of realized credit losses in a \$10 million portfolio of exposure. Such structures are commonly known as tranche CDS.

For both single-name CDS contracts and index CDS contracts, upon the occurrence of a credit event, under the terms of a CDS contract neither party to the CDS contract has recourse to the reference entity. The protection purchaser has recourse to the protection seller for the difference between the face value of the CDS contract and the fair value of the reference obligation at the time of settling the credit derivative contract, also known as the recovery value. The protection purchaser does not need to hold the debt instrument of the underlying reference entity in order to receive amounts due under the CDS contract when a credit event occurs.

## Credit-related notes

A credit-related note is a funded credit derivative where the issuer of the credit-related note purchases from the note investor credit protection on a referenced entity. Under the contract, the investor pays the issuer the par value of the note at the inception of the transaction, and in return, the issuer pays periodic payments to the investor, based on the credit risk of the referenced entity. The issuer also repays the investor the par value of the note at maturity unless the reference entity experiences a specified credit event. If a credit event occurs, the issuer is not obligated to repay the par value of the note, but rather, the issuer pays the investor the difference between the par value of the note and the fair value of the defaulted reference obligation at the time of settlement. Neither party to the credit-related note has recourse to the defaulting reference entity. For a further discussion of credit-related notes, see Note 16 on pages 280–291 of this Annual Report.

The following tables present a summary of the notional amounts of credit derivatives and credit-related notes the Firm sold and purchased as of December 31, 2012 and 2011. Upon a credit event, the Firm as a seller of protection would typically pay out only a percentage of the full notional amount of net protection sold, as the amount actually required to be paid on the contracts takes into account the recovery value of the reference obligation at the time of settlement.

The Firm manages the credit risk on contracts to sell protection by purchasing protection with identical or similar underlying reference entities. Other purchased protection referenced in the following tables includes credit derivatives bought on related, but not identical, reference positions (including indices, portfolio coverage and other reference points) as well as protection purchased through credit-related notes.

The Firm does not use notional amounts of credit derivatives as the primary measure of risk management for such derivatives, because the notional amount does not take into account the probability of the occurrence of a credit event, the recovery value of the reference obligation, or related cash instruments and economic hedges, each of which reduces, in the Firm's view, the risks associated with such derivatives.

Total credit derivatives and credit-related notes

December 31, 2012 (in millions)	Maximum payout/Notional amount			
	Protection sold	Protection purchased with identical underlyings <sup>(b)</sup>	Net protection (sold)/purchased <sup>(c)</sup>	Other protection purchased <sup>(d)</sup>
Credit derivatives				
Credit default swaps	\$ (2,954,705 )	\$ 2,879,105	\$ (75,600 )	\$ 42,460
Other credit derivatives <sup>(a)</sup>	(66,244 )	5,649	(60,595 )	33,174
Total credit derivatives	(3,020,949 )	2,884,754	(136,195 )	75,634
Credit-related notes	(233 )	—	(233 )	3,255
Total	\$ (3,021,182 )	\$ 2,884,754	\$ (136,428 )	\$ 78,889

December 31, 2011 (in millions)	Maximum payout/Notional amount			
	Protection sold	Protection purchased with identical underlyings <sup>(b)</sup>	Net protection (sold)/purchased <sup>(c)</sup>	Other protection purchased <sup>(d)</sup>
Credit derivatives				
Credit default swaps	\$ (2,839,492 )	\$ 2,798,207	\$ (41,285 )	\$ 29,139
Other credit derivatives <sup>(a)</sup>	(79,711 )	4,954	(74,757 )	22,292
Total credit derivatives	(2,919,203 )	2,803,161	(116,042 )	51,431
Credit-related notes	(742 )	—	(742 )	3,944
Total	\$ (2,919,945 )	\$ 2,803,161	\$ (116,784 )	\$ 55,375

(a) Primarily consists of total return swaps and CDS options.

Represents the total notional amount of protection purchased where the underlying reference instrument is identical

(b) to the reference instrument on protection sold; the notional amount of protection purchased for each individual identical underlying reference instrument may be greater or lower than the notional amount of protection sold.

(c) Does not take into account the fair value of the reference obligation at the time of settlement, which would generally reduce the amount the seller of protection pays to the buyer of protection in determining settlement value.

(d) Represents protection purchased by the Firm on referenced instruments (single-name, portfolio or index) where the Firm has not sold any protection on the identical reference instrument.

The following tables summarize the notional and fair value amounts of credit derivatives and credit-related notes as of December 31, 2012 and 2011, where JPMorgan Chase is the seller of protection. The maturity profile is based on the remaining contractual maturity of the credit derivative contracts. The ratings profile is based on the rating of the reference entity on which the credit derivative contract is based. The ratings and maturity profile of credit derivatives and credit-related notes where JPMorgan Chase is the purchaser of protection are comparable to the profile reflected below.

Protection sold – credit derivatives and credit-related notes ratings<sup>(a)</sup>/maturity profile

December 31, 2012 (in millions)	Risk rating of reference entity	<1 year	1–5 years	>5 years	Total notional amount	Fair value of receivables <sup>(b)</sup>	Fair value of payables <sup>(b)</sup>	Net fair value
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Investment-grade	\$ (409,748 )	\$ (1,383,644 )	\$ (224,001 )	\$ (2,017,393 )	\$ 16,690	\$ (22,393 )	\$ (5,703 )
Noninvestment-grade	(214,949 )	(722,115 )	(66,725 )	(1,003,789 )	22,355	(36,815 )	(14,460 )
Total	\$ (624,697 )	\$ (2,105,759 )	\$ (290,726 )	\$ (3,021,182 )	\$ 39,045	\$ (59,208 )	\$ (20,163 )
December 31, 2011 (in millions)	<1 year	1–5 years	>5 years	Total notional amount	Fair value of receivables <sup>(b)</sup>	Fair value of payables <sup>(b)</sup>	Net fair value
Risk rating of reference entity							
Investment-grade	\$ (352,215 )	\$ (1,262,143 )	\$ (345,996 )	\$ (1,960,354 )	\$ 7,809	\$ (57,697 )	\$ (49,888 )
Noninvestment-grade	(241,823 )	(589,954 )	(127,814 )	(959,591 )	13,212	(85,304 )	(72,092 )
Total	\$ (594,038 )	\$ (1,852,097 )	\$ (473,810 )	\$ (2,919,945 )	\$ 21,021	\$ (143,001 )	\$ (121,980 )

(a) The ratings scale is based on the Firm's internal ratings, which generally correspond to ratings as defined by S&P and Moody's.

(b) Amounts are shown on a gross basis, before the benefit of legally enforceable master netting agreements and cash collateral received by the Firm.

## Notes to consolidated financial statements

## Note 7 – Noninterest revenue

## Investment banking fees

This revenue category includes advisory and equity and debt underwriting fees. Underwriting fees are recognized as revenue when the Firm has rendered all services to the issuer and is entitled to collect the fee from the issuer, as long as there are no other contingencies associated with the fee. Underwriting fees are net of syndicate expense; the Firm recognizes credit arrangement and syndication fees as revenue after satisfying certain retention, timing and yield criteria. Advisory fees are recognized as revenue when the related services have been performed and the fee has been earned.

The following table presents the components of investment banking fees.

Year ended December 31, (in millions)	2012	2011	2010
Underwriting			
Equity	\$1,026	\$1,181	\$1,589
Debt	3,290	2,934	3,172
Total underwriting	4,316	4,115	4,761
Advisory	1,492	1,796	1,429
Total investment banking fees	\$5,808	\$5,911	\$6,190

## Principal transactions

Principal transactions revenue includes realized and unrealized gains and losses recorded on derivatives, other financial instruments, private equity investments, and physical commodities used in market-making and client-driven activities.

In addition, principal transactions revenue also includes certain realized and unrealized gains and losses related to hedge accounting and specified risk management activities disclosed separately in Note 6, including: (a) certain derivatives designated in qualifying hedge accounting relationships (primarily fair value hedges of commodity and foreign exchange risk), (b) certain derivatives used for specific risk management purposes, primarily to mitigate credit risk, foreign exchange risk and commodity risk but as to which qualifying hedge accounting is not applied, and (c) certain derivatives related to market-making activities and other. See Note 6 on pages 218–227 of this Annual Report for information on the income statement classification of gains and losses on derivatives.

The following table presents principal transactions revenue by major underlying type of risk exposures. This table does not include other types of revenue, such as net interest income on trading assets, which are an integral part of the overall performance of the Firm's client-driven market-making activities.

Year ended December 31, (in millions)	2012	2011	2010
Trading revenue by risk exposure			
Interest rate <sup>(a)</sup>	\$3,922	\$(873)	\$(199)
Credit <sup>(b)</sup>	(5,460)	3,393	4,543
Foreign exchange	1,436	1,154	1,896
Equity	2,504	2,401	2,275
Commodity <sup>(c)</sup>	2,363	2,823	889
Total trading revenue	4,765	8,898	9,404
Private equity gains/(losses) <sup>(d)</sup>	771	1,107	1,490
Principal transactions <sup>(e)</sup>	\$5,536	\$10,005	\$10,894

<sup>(a)</sup> Includes a pretax gain of \$665 million for the year ended December 31, 2012, reflecting the recovery on a Bear Stearns-related subordinated loan.

<sup>(b)</sup> Includes \$5.8 billion of losses incurred by CIO from the synthetic credit portfolio for the six months ended June 30, 2012, and \$449 million of losses incurred by CIO from the retained index credit derivative positions for the three months ended September 30, 2012; and losses incurred by CIB from the synthetic credit portfolio.

<sup>(c)</sup>

Includes realized gains and losses and unrealized losses on physical commodities inventories that are generally carried at the lower of cost or market (market approximates fair value), subject to any applicable fair value hedge accounting adjustments, and gains and losses on commodity derivatives and other financial instruments that are carried at fair value through income. Commodity derivatives are frequently used to manage the Firm's risk exposure to its physical commodities inventories. Gains/(losses) related to commodity fair value hedges were \$(1.4) billion, \$(1.1) billion and \$528 million for the years ended December 31, 2012, 2011 and 2010, respectively.

(d) Includes revenue on private equity investments held in the Private Equity business within Corporate/Private Equity, as well as those held in other business segments.

Principal transactions revenue included DVA related to structured notes and derivative liabilities measured at fair value in CIB. DVA gains/(losses) were \$(930) million, \$1.4 billion, and \$509 million for the years ended December 31, 2012, 2011 and 2010, respectively.

#### Lending- and deposit-related fees

This revenue category includes fees from loan commitments, standby letters of credit, financial guarantees, deposit-related fees in lieu of compensating balances, cash management-related activities or transactions, deposit accounts and other loan-servicing activities. These fees are recognized over the period in which the related service is provided.

### Asset management, administration and commissions

This revenue category includes fees from investment management and related services, custody, brokerage services, insurance premiums and commissions, and other products. These fees are recognized over the period in which the related service is provided. Performance-based fees, which are earned based on exceeding certain benchmarks or other performance targets, are accrued and recognized at the end of the performance period in which the target is met.

The following table presents components of asset management, administration and commissions.

Year ended December 31, (in millions)	2012	2011	2010
Asset management			
Investment management fees	\$6,309	\$6,085	\$5,632
All other asset management fees	792	605	496
Total asset management fees	7,101	6,690	6,128
Total administration fees <sup>(a)</sup>	2,135	2,171	2,023
Commission and other fees			
Brokerage commissions	2,331	2,753	2,804
All other commissions and fees	2,301	2,480	2,544
Total commissions and fees	4,632	5,233	5,348
Total asset management, administration and commissions	\$13,868	\$14,094	\$13,499

(a) Includes fees for custody, securities lending, funds services and securities clearance.

### Mortgage fees and related income

This revenue category primarily reflects CCB's Mortgage Production and Mortgage Servicing revenue, including: fees and income derived from mortgages originated with the intent to sell; mortgage sales and servicing including losses related to the repurchase of previously-sold loans; the impact of risk management activities associated with the mortgage pipeline, warehouse loans and MSR's; and revenue related to any residual interests held from mortgage securitizations. This revenue category also includes gains and losses on sales and lower of cost or fair value adjustments for mortgage loans held-for-sale, as well as changes in fair value for mortgage loans originated with the intent to sell and measured at fair value under the fair value option. Changes in the fair value of CCB mortgage servicing rights are reported in mortgage fees and related income. Net interest income from mortgage loans, and securities gains and losses on AFS securities used in mortgage-related risk management activities, are recorded in interest income and securities gains/(losses), respectively. For a further discussion of MSR's, see Note 17 on pages 291-295 of this Annual Report.

### Card income

This revenue category includes interchange income from credit and debit cards and net fees earned from processing credit card transactions for merchants. Card income is recognized as earned. Annual fees and direct loan origination costs are deferred and recognized on a straight-line basis over a 12-month period. Expense related to rewards programs is recorded when the rewards are earned by the customer and netted against interchange income.

### Credit card revenue sharing agreements

The Firm has contractual agreements with numerous affinity organizations and co-brand partners (collectively, "partners"), which grant the Firm exclusive rights to market to the members or customers of such partners. These partners endorse the credit card programs and provide their mailing lists to the Firm, and they may also conduct marketing activities and provide awards under the various credit card programs. The terms of these agreements generally range from three to 10 years.

The Firm typically makes incentive payments to the partners based on new account originations, charge volumes and the cost of the partners' marketing activities and awards. Payments based on new account originations are accounted for as direct loan origination costs. Payments to partners based on charge volumes are deducted from interchange



income as the related revenue is earned. Payments based on marketing efforts undertaken by the partners are expensed by the Firm as incurred and reported as noninterest expense.

Other income

Included in other income is operating lease income of \$1.3 billion, \$1.2 billion and \$971 million for the years ended December 31, 2012, 2011 and 2010, respectively.

## Notes to consolidated financial statements

## Note 8 – Interest income and Interest expense

Interest income and interest expense is recorded in the Consolidated Statements of Income and classified based on the nature of the underlying asset or liability. Interest income and interest expense includes the current-period interest accruals for financial instruments measured at fair value, except for financial instruments containing embedded derivatives that would be separately accounted for in accordance with U.S. GAAP absent the fair value option election; for those instruments, all changes in fair value, including any interest elements, are reported in principal transactions revenue. For financial instruments that are not measured at fair value, the related interest is included within interest income or interest expense, as applicable.

Details of interest income and interest expense were as follows.

Year ended December 31, (in millions)	2012	2011	2010
Interest income			
Loans	\$35,832	\$37,098	\$40,388
Securities	7,939	9,215	9,540
Trading assets	9,039	11,142	11,007
Federal funds sold and securities purchased under resale agreements	2,442	2,523	1,786
Securities borrowed	(3	) <sup>(c)</sup> 110	175
Deposits with banks	555	599	345
Other assets <sup>(a)</sup>	259	606	541
Total interest income	56,063	61,293	63,782
Interest expense			
Interest-bearing deposits	2,655	3,855	3,424
Short-term and other liabilities <sup>(b)</sup>	1,788	2,873	2,364
Long-term debt	6,062	6,109	5,848
Beneficial interests issued by consolidated VIEs	648	767	1,145
Total interest expense	11,153	13,604	12,781
Net interest income	44,910	47,689	51,001
Provision for credit losses	3,385	7,574	16,639
Net interest income after provision for credit losses	\$41,525	\$40,115	\$34,362

(a) Largely margin loans.

(b) Includes brokerage customer payables.

Negative interest income for the year ended December 31, 2012, is a result of increased client-driven demand for

(c) certain securities combined with the impact of low interest rates; the offset of this matched book activity is reflected as lower net interest expense reported within short-term and other liabilities.

Note 9 – Pension and other postretirement employee benefit plans

The Firm's defined benefit pension plans and its other postretirement employee benefit ("OPEB") plans (collectively the "Plans") are accounted for in accordance with U.S. GAAP for retirement benefits.

Defined benefit pension plans

The Firm has a qualified noncontributory U.S. defined benefit pension plan that provides benefits to substantially all U.S. employees. The U.S. plan employs a cash balance formula in the form of pay and interest credits to determine the benefits to be provided at retirement, based on eligible compensation and years of service. Employees begin to accrue plan benefits after completing one year of service, and benefits generally vest after three years of service. The Firm also offers benefits through defined benefit pension plans to qualifying employees in certain non-U.S. locations based on factors such as eligible compensation, age and/or years of service.

It is the Firm's policy to fund the pension plans in amounts sufficient to meet the requirements under applicable laws. The Firm does not anticipate at this time any contribution to the U.S. defined benefit pension plan in 2013. The 2013 contributions to the non-U.S. defined benefit pension plans are expected to be \$40 million of which \$36 million are contractually required.

JPMorgan Chase also has a number of defined benefit pension plans that are not subject to Title IV of the Employee Retirement Income Security Act. The most significant of these plans is the Excess Retirement Plan, pursuant to which certain employees previously earned pay credits on compensation amounts above the maximum stipulated by law under a qualified plan; no further pay credits are allocated under this plan. The Excess Retirement Plan had an unfunded projected benefit obligation in the amount of \$276 million and \$272 million, at December 31, 2012 and 2011, respectively.

Effective March 19, 2012, pursuant to the WaMu Global Settlement, JPMorgan Chase Bank, N.A. became the sponsor of the WaMu Pension Plan. This plan's assets were merged with and into the JPMorgan Chase Retirement Plan effective as of December 31, 2012.

Defined contribution plans

JPMorgan Chase currently provides two qualified defined contribution plans in the U.S. and other similar arrangements in certain non-U.S. locations, all of which are administered in accordance with applicable local laws and regulations. The most significant of these plans is The JPMorgan Chase 401(k) Savings Plan (the "401(k) Savings Plan"), which covers substantially all U.S. employees. The 401(k) Savings Plan allows employees to make pretax and Roth 401(k) contributions to tax-deferred investment portfolios. The JPMorgan Chase Common Stock Fund, which is an investment option under the 401(k) Savings Plan, is a nonleveraged employee stock ownership plan.

The Firm matches eligible employee contributions up to 5% of benefits-eligible compensation (e.g., base pay) on an annual basis. Employees begin to receive matching contributions after completing a one-year-of-service requirement. Employees with total annual cash compensation of \$250,000 or more are not eligible for matching contributions. Matching contributions vest after three years of service for employees hired on or after May 1, 2009. The 401(k) Savings Plan also permits discretionary profit-sharing contributions by participating companies for certain employees, subject to a specified vesting schedule.

OPEB plans

JPMorgan Chase offers postretirement medical and life insurance benefits to certain retirees and postretirement medical benefits to qualifying U.S. employees. These benefits vary with the length of service and the date of hire and provide for limits on the Firm's share of covered medical benefits. The medical and life insurance benefits are both contributory. Postretirement medical benefits also are offered to qualifying U.K. employees.

JPMorgan Chase's U.S. OPEB obligation is funded with corporate-owned life insurance ("COLI") purchased on the lives of eligible employees and retirees. While the Firm owns the COLI policies, COLI proceeds (death benefits, withdrawals and other distributions) may be used only to reimburse the Firm for its net postretirement benefit claim payments and related administrative expense. The U.K. OPEB plan is unfunded.



## Notes to consolidated financial statements

The following table presents the changes in benefit obligations, plan assets and funded status amounts reported on the Consolidated Balance Sheets for the Firm's U.S. and non-U.S. defined benefit pension and OPEB plans.

As of or for the year ended December 31, (in millions)	Defined benefit pension plans					
	U.S.		Non-U.S.		OPEB plans <sup>(e)</sup>	
	2012	2011	2012	2011	2012	2011
Change in benefit obligation						
Benefit obligation, beginning of year	\$(9,043 )	\$(8,320 )	\$(2,829 )	\$(2,600 )	\$(999 )	\$(980 )
Benefits earned during the year	(272 )	(249 )	(41 )	(36 )	(1 )	(1 )
Interest cost on benefit obligations	(466 )	(451 )	(126 )	(133 )	(44 )	(51 )
Plan amendments	—	—	6	—	—	—
WaMu Global Settlement	(1,425 )	—	—	—	—	—
Employee contributions	NA	NA	(5 )	(5 )	(74 )	(84 )
Net gain/(loss)	(864 )	(563 )	(244 )	(160 )	(9 )	(39 )
Benefits paid	592	540	108	93	149	166
Expected Medicare Part D subsidy receipts	NA	NA	NA	NA	(10 )	(10 )
Foreign exchange impact and other	—	—	(112 )	12	(2 )	—
Benefit obligation, end of year	\$(11,478)	\$(9,043 )	\$(3,243 )	\$(2,829 )	\$(990 )	\$(999 )
Change in plan assets						
Fair value of plan assets, beginning of year	\$10,472	\$10,828	\$2,989	\$2,647	\$1,435	\$1,381
Actual return on plan assets	1,292	147	237	277	142	78
Firm contributions	31	37	86	169	2	2
WaMu Global Settlement	1,809	—	—	—	—	—
Employee contributions	—	—	5	5	—	—
Benefits paid	(592 )	(540 )	(108 )	(93 )	(16 )	(26 )
Foreign exchange impact and other	—	—	121	(16 )	—	—
Fair value of plan assets, end of year	\$13,012 <sup>(b)(c)</sup>	\$10,472 <sup>(b)(c)</sup>	\$3,330 <sup>(c)</sup>	\$2,989 <sup>(c)</sup>	\$1,563	\$1,435
Funded/(unfunded) status <sup>(a)</sup>	\$1,534	\$1,429 <sup>(d)</sup>	\$87	\$160	\$573	\$436
Accumulated benefit obligation, end of year	\$(11,447)	\$(9,008 )	\$(3,221 )	\$(2,800 )	NA	NA

Represents overfunded plans with an aggregate balance of \$2.8 billion and \$2.6 billion at December 31,

(a) 2012 and 2011, respectively, and underfunded plans with an aggregate balance of \$612 million and \$621 million at December 31, 2012 and 2011, respectively.

(b) At December 31, 2012 and 2011, approximately \$418 million and \$426 million, respectively, of U.S. plan assets included participation rights under participating annuity contracts.

(c) At December 31, 2012 and 2011, defined benefit pension plan amounts not measured at fair value included \$137 million and \$50 million, respectively, of accrued receivables, and \$310 million and \$245 million, respectively, of accrued liabilities, for U.S. plans; and \$47 million and \$56 million, respectively, of accrued receivables, and \$46 million and \$69 million of accrued liabilities, respectively, for non-U.S. plans.

(d) Does not include any amounts attributable to the WaMu Pension Plan.

(e) Includes an unfunded accumulated postretirement benefit obligation of \$31 million and \$33 million at December 31, 2012 and 2011, respectively, for the U.K. plan.

## Gains and losses

For the Firm's defined benefit pension plans, fair value is used to determine the expected return on plan assets. Amortization of net gains and losses is included in annual net periodic benefit cost if, as of the beginning of the year, the net gain or loss exceeds 10% of the greater of the projected benefit obligation or the fair value of the plan assets.

Any excess is amortized over the average future service period of defined benefit pension plan participants, which for the U.S. defined benefit pension plan is currently nine years. In addition, prior service costs are amortized over the average remaining service period of active employees expected to receive benefits under the plan when the prior service cost is first recognized. The average remaining amortization period for current prior service costs is six years.

For the Firm's OPEB plans, a calculated value that recognizes changes in fair value over a five-year period is used to determine the expected return on plan assets. This value is referred to as the market related value of assets. Amortization of net gains and losses, adjusted for gains and losses not yet recognized, is included in annual net periodic benefit cost if, as of the beginning of the year, the net gain or loss exceeds 10% of the greater of the accumulated postretirement benefit obligation or the market related value of assets. Any excess is amortized over the average future service period, which is currently four years; however, prior service costs are amortized over the average years of service remaining to full eligibility age, which is currently three years.

The following table presents pretax pension and OPEB amounts recorded in AOCI.

December 31, (in millions)	Defined benefit pension plans							
	U.S.			Non-U.S.			OPEB plans	
	2012	2011	2010	2012	2011	2010	2012	2011
Net gain/(loss)	\$(3,814 )	\$(3,669 )	\$(676 )	\$(544 )	\$(133 )	\$(176 )		
Prior service credit/(cost)	237	278	18	12	1	1		
Accumulated other comprehensive income/(loss), pretax, end of year	\$(3,577 )	\$(3,391 )	\$(658 )	\$(532 )	\$(132 )	\$(175 )		

The following table presents the components of net periodic benefit costs reported in the Consolidated Statements of Income and other comprehensive income for the Firm's U.S. and non-U.S. defined benefit pension, defined contribution and OPEB plans.

Year ended December 31, (in millions)	Pension plans						OPEB plans		
	U.S.			Non-U.S.			2012	2011	2010
	2012	2011	2010	2012	2011	2010	2012	2011	2010
Components of net periodic benefit cost									
Benefits earned during the year	\$272	\$249	\$230	\$41	\$36	\$31	\$1	\$1	\$2
Interest cost on benefit obligations	466	451	468	126	133	128	44	51	55
Expected return on plan assets	(861 )	(791 )	(742 )	(137 )	(141 )	(126 )	(90 )	(88 )	(96 )
Amortization:									
Net (gain)/loss	289	165	225	36	48	56	(1 )	1	(1 )
Prior service cost/(credit)	(41 )	(43 )	(43 )	—	(1 )	(1 )	—	(8 )	(13 )
Settlement (gain)/loss	—	—	—	—	—	1	—	—	—
Special termination benefits	—	—	—	—	—	1	—	—	—
Net periodic defined benefit cost	125	31	138	66	75	90	(46 )	(43 )	(53 )
Other defined benefit pension plans <sup>(a)</sup>	15	19	14	8	12	11	NA	NA	NA
Total defined benefit plans	140	50	152	74	87	101	(46 )	(43 )	(53 )
Total defined contribution plans	409	370	332	302	285	251	NA	NA	NA
Total pension and OPEB cost included in compensation expense	\$549	\$420	\$484	\$376	\$372	\$352	\$(46 )	\$(43 )	\$(53 )
Changes in plan assets and benefit obligations recognized in other comprehensive income									
Net (gain)/loss arising during the year	\$434	\$1,207	\$(187)	\$146	\$25	\$(21 )	\$(43 )	\$58	\$(54 )
Prior service credit arising during the year	—	—	—	(6 )	—	(10 )	—	—	—
Amortization of net loss	(289 )	(165 )	(225 )	(36 )	(48 )	(56 )	1	(1 )	1
Amortization of prior service (cost)/credit	41	43	43	—	1	1	—	8	13
Settlement loss/(gain)	—	—	—	—	—	(1 )	—	—	—
Foreign exchange impact and other	—	—	—	22	1	(23 )	(1 )	—	1
Total recognized in other comprehensive income	\$186	\$1,085	\$(369)	\$126	\$(21 )	\$(110)	\$(43 )	\$65	\$(39 )
Total recognized in net periodic benefit cost and other comprehensive income	\$311	\$1,116	\$(231)	\$192	\$54	\$(20 )	\$(89 )	\$22	\$(92 )

(a) Includes various defined benefit pension plans which are individually immaterial.

## Notes to consolidated financial statements

The estimated pretax amounts that will be amortized from AOCI into net periodic benefit cost in 2013 are as follows.

(in millions)	Defined benefit pension plans		OPEB plans	
	U.S.	Non-U.S.	U.S.	Non-U.S.
Net loss/(gain)	\$276	\$50	\$5	\$(1 )
Prior service cost/(credit)	(41 )	(2 )	—	—
Total	\$235	\$48	\$5	\$(1 )

The following table presents the actual rate of return on plan assets for the U.S. and non-U.S. defined benefit pension and OPEB plans.

Year ended December 31,	U.S.			Non-U.S.		
	2012	2011	2010	2012	2011	2010
Actual rate of return:						
Defined benefit pension plans	12.66	% 0.72	% 12.23	% 7.21 - 11.72%	(4.29)-13.12%	0.77-10.65%
OPEB plans	10.10	5.22	11.23	NA	NA	NA

## Plan assumptions

JPMorgan Chase's expected long-term rate of return for U.S. defined benefit pension and OPEB plan assets is a blended average of the investment advisor's projected long-term (10 years or more) returns for the various asset classes, weighted by the asset allocation. Returns on asset classes are developed using a forward-looking approach and are not strictly based on historical returns. Equity returns are generally developed as the sum of inflation, expected real earnings growth and expected long-term dividend yield. Bond returns are generally developed as the sum of inflation, real bond yield and risk spread (as appropriate), adjusted for the expected effect on returns from changing yields. Other asset-class returns are derived from their relationship to the equity and bond markets. Consideration is also given to current market conditions and the short-term portfolio mix of each plan; as a result, in 2012 the Firm generally maintained the same expected return on assets as in the prior year.

For the U.K. defined benefit pension plans, which represent the most significant of the non-U.S. defined benefit pension plans, procedures similar to those in the U.S. are used to develop the expected long-term rate of return on plan

assets, taking into consideration local market conditions and the specific allocation of plan assets. The expected long-term rate of return on U.K. plan assets is an average of projected long-term returns for each asset class. The return on equities has been selected by reference to the yield on long-term U.K. government bonds plus an equity risk premium above the risk-free rate. The expected return on "AA" rated long-term corporate bonds is based on an implied yield for similar bonds.

The discount rate used in determining the benefit obligation under the U.S. defined benefit pension and OPEB plans was selected by reference to the yields on portfolios of bonds with maturity dates and coupons that closely match each of the plan's projected cash flows; such portfolios are derived from a broad-based universe of high-quality corporate bonds as of the measurement date. In years in which these hypothetical bond portfolios generate excess cash, such excess is assumed to be reinvested at the one-year forward rates implied by the Citigroup Pension Discount Curve published as of the measurement date. The discount rate for the U.K. defined benefit pension plan represents a rate implied from the yield curve of the year-end iBoxx £ corporate "AA" 15-year-plus bond index.

The following tables present the weighted-average annualized actuarial assumptions for the projected and accumulated postretirement benefit obligations, and the components of net periodic benefit costs, for the Firm's significant U.S. and non-U.S. defined benefit pension and OPEB plans, as of and for the periods indicated.

Weighted-average assumptions used to determine benefit obligations

December 31,	U.S.		Non-U.S.	
	2012	2011	2012	2011



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Discount rate:

Defined benefit pension plans	3.90	% 4.60	% 1.40 - 4.40%	1.50-4.80%
OPEB plans	3.90	4.70	—	—
Rate of compensation increase	4.00	4.00	2.75 - 4.10	2.75-4.20
Health care cost trend rate:				
Assumed for next year	7.00	7.00	—	—
Ultimate	5.00	5.00	—	—
Year when rate will reach ultimate	2017	2017	—	—

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Weighted-average assumptions used to determine net periodic benefit costs

Year ended December 31,	U.S.			Non-U.S.		
	2012	2011	2010	2012	2011	2010
Discount rate:						
Defined benefit pension plans	4.60	% 5.50	% 6.00	% 1.50 - 4.80%	1.60-5.50%	2.00-5.70%
OPEB plans	4.70	5.50	6.00	—	—	—
Expected long-term rate of return on plan assets:						
Defined benefit pension plans	7.50	7.50	7.50	2.50 - 4.60	2.40-5.40	2.40-6.20
OPEB plans	6.25	6.25	7.00	NA	NA	NA
Rate of compensation increase	4.00	4.00	4.00	2.75 - 4.20	3.00-4.50	3.00-4.50
Health care cost trend rate:						
Assumed for next year	7.00	7.00	7.75	—	—	—
Ultimate	5.00	5.00	5.00	—	—	—
Year when rate will reach ultimate	2017	2017	2014	—	—	—

The following table presents the effect of a one-percentage-point change in the assumed health care cost trend rate on JPMorgan Chase's total service and interest cost and accumulated postretirement benefit obligation.

Year ended December 31, 2012 (in millions)	1-Percentage point increase	1-Percentage point decrease
Effect on total service and interest cost	\$1	\$(1)
Effect on accumulated postretirement benefit obligation	28	(25)

At December 31, 2012, the Firm decreased the discount rates used to determine its benefit obligations for the U.S. defined benefit pension and OPEB plans in light of current market interest rates, which will result in an increase in expense of approximately \$48 million for 2013. The 2013 expected long-term rate of return on U.S. defined benefit pension plan assets and U.S. OPEB plan assets are 7.50% and 6.25%, respectively, unchanged from 2012. For 2013, the initial health care benefit obligation trend assumption has been set at 7.00%, and the ultimate health care trend assumption and the year to reach the ultimate rate remains at 5.00% and 2017, respectively, unchanged from 2012. As of December 31, 2012, the interest crediting rate assumption and the assumed rate of compensation increase remained at 5.00% and 4.00%, respectively.

JPMorgan Chase's U.S. defined benefit pension and OPEB plan expense is sensitive to the expected long-term rate of return on plan assets and the discount rate. With all other assumptions held constant, a 25-basis point decline in the expected long-term rate of return on U.S. plan assets would result in an increase of approximately an aggregate \$35 million in 2013 U.S. defined benefit pension and OPEB plan expense. A 25-basis point decline in the discount rate for the U.S. plans would result in an increase in 2013 U.S. defined benefit pension and OPEB plan expense of approximately an aggregate \$19 million and an increase in the related benefit obligations of approximately an aggregate \$272 million. A 25-basis point decrease in the interest crediting rate for the U.S. defined benefit pension plan would result in a decrease in 2013 U.S. defined benefit pension expense of approximately \$25 million and a

decrease in the related projected benefit obligations of approximately \$116 million. A 25-basis point decline in the discount rates for the non-U.S. plans would result in an increase in the 2013 non-U.S. defined benefit pension plan expense of approximately \$14 million.

Investment strategy and asset allocation

The Firm's U.S. defined benefit pension plan assets are held in trust and are invested in a well-diversified portfolio of equity and fixed income securities, real estate, cash and cash equivalents, and alternative investments (e.g., hedge funds, private equity, real estate and real assets). Non-U.S. defined benefit pension plan assets are held in various trusts and are also invested in well-diversified portfolios of equity, fixed income and other securities. Assets of the Firm's COLI policies, which are used to partially fund the U.S. OPEB plan, are held in separate accounts with an insurance company and are invested in equity and fixed income index funds.

The investment policy for the Firm's U.S. defined benefit pension plan assets is to optimize the risk-return relationship as appropriate to the needs and goals using a global portfolio of various asset classes diversified by market segment, economic sector, and issuer. Assets are managed by a combination of internal and external investment managers. Periodically the Firm performs a comprehensive analysis on the U.S. defined benefit pension plan asset allocations, incorporating projected asset and liability data, which focuses on the short- and long-term impact of the asset allocation on cumulative pension expense, economic cost, present value of contributions and funded status. Currently, approved asset allocation ranges are: U.S. equity 15% to 35%, international equity 15% to 25%, debt securities 10% to 30%, hedge funds 10% to 30%, and real estate, real assets and private equity 5% to 20%. Asset allocations are not managed to a specific target but seek to shift asset class allocations within these stated ranges. Investment strategies incorporate the economic outlook and the anticipated implications of the macroeconomic environment on the various asset classes while maintaining an appropriate level of liquidity for the plan. The Firm regularly reviews the asset allocations and

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asset managers, as well as other factors that impact the portfolio, which is rebalanced when deemed necessary. For the U.K. defined benefit pension plans, which represent the most significant of the non-U.S. defined benefit pension plans, the assets are invested to maximize returns subject to an appropriate level of risk relative to the plans' liabilities. In order to reduce the volatility in returns relative to the plans' liability profiles, the U.K. defined benefit pension plans' largest asset allocations are to debt securities of appropriate durations. Other assets, mainly equity securities, are then invested for capital appreciation, to provide long-term investment growth. Similar to the U.S. defined benefit pension plan, asset allocations and asset managers for the U.K. plans are reviewed regularly and the portfolio is rebalanced when deemed necessary.

Investments held by the Plans include financial instruments which are exposed to various risks such as interest rate, market and credit risks. Exposure to a concentration of credit risk is mitigated by the broad diversification of both U.S. and non-U.S. investment instruments. Additionally, the investments in each of the common/collective trust funds and registered investment companies are further diversified into various financial instruments. As of December 31, 2012, assets held by the Firm's U.S. and non-U.S. defined benefit pension and OPEB plans do not include JPMorgan Chase common stock, except in connection with investments in third-party stock-index funds. The plans hold investments in funds that are sponsored or managed by affiliates of JPMorgan Chase in the amount of \$1.8 billion and \$1.6 billion for U.S. plans and \$220 million and \$194 million for non-U.S. plans, as of December 31, 2012 and 2011, respectively.

The following table presents the weighted-average asset allocation of the fair values of total plan assets at December 31 for the years indicated, as well as the respective approved range/target allocation by asset category, for the Firm's U.S. and non-U.S. defined benefit pension and OPEB plans.

December 31, Asset category	Defined benefit pension plans						OPEB plans <sup>(c)</sup>				
	U.S.		Non-U.S.				Target		% of plan assets		
	Target Allocation	% of plan assets 2012	% of plan assets 2011	Target Allocation	% of plan assets 2012	% of plan assets 2011	Allocation	% of plan assets 2012	% of plan assets 2011		
Debt securities <sup>(a)</sup>	10-30%	20	% 20	% 70	% 72	% 74	% 50	% 50	% 50	%	
Equity securities	25-60	41	39	29	27	25	50	50	50		
Real estate	5-20	5	5	—	—	—	—	—	—		
Alternatives <sup>(b)</sup>	15-50	34	36	1	1	1	—	—	—		
Total	100%	100	% 100	% 100	% 100	% 100	% 100	% 100	% 100	%	

(a) Debt securities primarily include corporate debt, U.S. federal, state, local and non-U.S. government, and mortgage-backed securities.

(b) Alternatives primarily include limited partnerships.

(c) Represents the U.S. OPEB plan only, as the U.K. OPEB plan is unfunded.

## Fair value measurement of the plans' assets and liabilities

For information on fair value measurements, including descriptions of level 1, 2, and 3 of the fair value hierarchy and the valuation methods employed by the Firm, see Note 3 on pages 196–214 of this Annual Report.

## Pension and OPEB plan assets and liabilities measured at fair value

December 31, 2012 (in millions)	U.S. defined benefit pension plans				Non-U.S. defined benefit pension plans			
	Level 1	Level 2	Level 3	Total fair value	Level 1	Level 2	Level 3	Total fair value
Cash and cash equivalents	\$162	\$—	\$—	\$162	\$142	\$—	\$—	\$142
Equity securities:								
Capital equipment	702	6	—	708	115	15	—	130
Consumer goods	744	4	—	748	136	32	—	168
Banks and finance companies	425	54	—	479	94	23	—	117
Business services	424	—	—	424	125	8	—	133
Energy	192	—	—	192	54	12	—	66
Materials	211	—	—	211	30	6	—	36
Real Estate	18	—	—	18	10	—	—	10
Other	1,107	42	4	1,153	19	71	—	90
Total equity securities	3,823	106	4	3,933	583	167	—	750
Common/collective trust funds <sup>(a)</sup>	412	1,660	199	2,271	62	192	—	254
Limited partnerships: <sup>(b)</sup>								
Hedge funds	—	878	1,166	2,044	—	—	—	—
Private equity	—	—	1,743	1,743	—	—	—	—
Real estate	—	—	467	467	—	—	—	—
Real assets <sup>(c)</sup>	—	—	311	311	—	—	—	—
Total limited partnerships	—	878	3,687	4,565	—	—	—	—
Corporate debt securities <sup>(d)</sup>	—	1,114	1	1,115	—	765	—	765
U.S. federal, state, local and non-U.S. government debt securities	—	537	—	537	—	1,237	—	1,237
Mortgage-backed securities	107	30	—	137	100	—	—	100
Derivative receivables	3	5	—	8	109	—	—	109
Other <sup>(e)</sup>	7	34	420	461	21	67	—	88
Total assets measured at fair value <sup>(f)(g)</sup>	\$4,514	\$4,364	\$4,311	\$13,189	\$1,017	\$2,428	\$—	\$3,445
Derivative payables	\$—	\$(4 )	\$—	\$(4 )	\$(116 )	\$—	\$—	\$(116 )
Total liabilities measured at fair value <sup>(h)</sup>	\$—	\$(4 )	\$—	\$(4 )	\$(116 )	\$—	\$—	\$(116 )

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December 31, 2011 (in millions)	U.S. defined benefit pension plans				Non-U.S. defined benefit pension plans			
	Level 1	Level 2	Level 3	Total fair value	Level 1	Level 2	Level 3	Total fair value
Cash and cash equivalents	\$117	\$—	\$—	\$117	\$72	\$—	\$—	\$72
Equity securities:								
Capital equipment	607	7	—	614	69	12	—	81
Consumer goods	657	—	—	657	64	30	—	94
Banks and finance companies	301	2	—	303	83	13	—	96
Business services	332	—	—	332	48	10	—	58
Energy	173	—	—	173	52	10	—	62
Materials	161	—	1	162	35	6	—	41
Real estate	11	—	—	11	1	—	—	1
Other	766	274	—	1,040	160	5	—	165
Total equity securities	3,008	283	1	3,292	512	86	—	598
Common/collective trust funds <sup>(a)</sup>	401	1,125	202	1,728	138	170	—	308
Limited partnerships: <sup>(b)</sup>								
Hedge funds	—	933	1,039	1,972	—	—	—	—
Private equity	—	—	1,367	1,367	—	—	—	—
Real estate	—	—	306	306	—	—	—	—
Real assets <sup>(c)</sup>	—	—	264	264	—	—	—	—
Total limited partnerships	—	933	2,976	3,909	—	—	—	—
Corporate debt securities <sup>(d)</sup>	—	544	2	546	—	958	—	958
U.S. federal, state, local and non-U.S. government debt securities	—	328	—	328	—	904	—	904
Mortgage-backed securities	122	36	—	158	17	—	—	17
Derivative receivables	1	2	—	3	—	7	—	7
Other <sup>(e)</sup>	102	60	427	589	74	65	—	139
Total assets measured at fair value <sup>(f)(g)</sup>	\$3,751	\$3,311	\$3,608	\$10,670	\$813	\$2,190	\$—	\$3,003
Derivative payables	\$—	\$(3 )	\$—	\$(3 )	\$—	\$(1 )	\$—	\$(1 )
Total liabilities measured at fair value <sup>(h)</sup>	\$—	\$(3 )	\$—	\$(3 )	\$—	\$(1 )	\$—	\$(1 )

(a) At December 31, 2012 and 2011, common/collective trust funds primarily included a mix of short-term investment funds, domestic and international equity investments (including index) and real estate funds.

(b) Unfunded commitments to purchase limited partnership investments for the plans were \$1.4 billion and \$1.2 billion for 2012 and 2011, respectively.

(c) Real assets include investments in productive assets such as agriculture, energy rights, mining and timber properties and exclude raw land to be developed for real estate purposes.

(d) Corporate debt securities include debt securities of U.S. and non-U.S. corporations.

(e) Other consists of exchange-traded funds and participating and non-participating annuity contracts. Exchange-traded funds are primarily classified within level 1 of the fair value hierarchy given they are valued using market observable prices. Participating and non-participating annuity contracts are classified within level 3 of the fair value hierarchy due to lack of market mechanisms for transferring each policy and surrender restrictions.

(f) At December 31, 2012 and 2011, the fair value of investments valued at NAV were \$4.4 billion and \$3.9 billion, respectively, which were classified within the valuation hierarchy as follows: \$0.4 billion and \$0.4 billion in level 1, \$2.5 billion and \$2.1 billion in level 2 and \$1.5 billion and \$1.4 billion in level 3.

At December 31, 2012 and 2011, excluded U.S. defined benefit pension plan receivables for investments sold and dividends and interest receivables of \$137 million and \$50 million, respectively; and excluded non-U.S. defined benefit pension plan receivables for investments sold and dividends and interest receivables of \$47 million and \$56 million, respectively.

At December 31, 2012 and 2011, excluded \$306 million and \$241 million, respectively, of U.S. defined benefit pension plan payables for investments purchased; and \$4 million and \$4 million, respectively, of other liabilities; and excluded non-U.S. defined benefit pension plan payables for investments purchased of \$46 million and \$69 million, respectively.

The Firm's OPEB plan was partially funded with COLI policies of \$1.6 billion and \$1.4 billion, at December 31, 2012 and 2011, respectively, which were classified in level 3 of the valuation hierarchy.

## Changes in level 3 fair value measurements using significant unobservable inputs

Year ended December 31, 2012 (in millions)	Fair value, January 1, 2012	Actual return on plan assets		Purchases, sales and settlements, net	Transfers in and/or out of level 3	Fair value, December 31, 2012
		Realized gains/(losses)	Unrealized gains/(losses)			
U.S. defined benefit pension plans						
Equities	\$1	\$—	\$(1	) \$—	\$4	\$4
Common/collective trust funds	202	2	22	(27	) —	199
Limited partnerships:						
Hedge funds	1,039	1	71	55	—	1,166
Private equity	1,367	59	54	263	—	1,743
Real estate	306	16	1	144	—	467
Real assets	264	—	10	37	—	311
Total limited partnerships	2,976	76	136	499	—	3,687
Corporate debt securities	2	—	—	(1	) —	1
Other	427	—	(7	) —	—	420
Total U.S. plans	\$3,608	\$78	\$150	\$471	\$4	\$4,311
Non-U.S. defined benefit pension plans						
Other	\$—	\$—	\$—	\$—	\$—	\$—
Total non-U.S. plans	\$—	\$—	\$—	\$—	\$—	\$—
OPEB plans						
COLI	\$1,427	\$—	\$127	\$—	\$—	\$1,554
Total OPEB plans	\$1,427	\$—	\$127	\$—	\$—	\$1,554
Year ended December 31, 2011 (in millions)	Fair value, January 1, 2011	Actual return on plan assets		Purchases, sales and settlements, net	Transfers in and/or out of level 3	Fair value, December 31, 2011
		Realized gains/(losses)	Unrealized gains/(losses)			
U.S. defined benefit pension plans						
Equities	\$—	\$—	\$—	\$—	\$1	\$1
Common/collective trust funds	194	35	1	(28	) —	202
Limited partnerships:						
Hedge funds	1,160	(16	) 27	(76	) (56	) 1,039
Private equity	1,232	56	2	77	—	1,367
Real estate	304	8	40	14	(60	) 306
Real assets	—	5	(7	) 150	116	264
Total limited partnerships	2,696	53	62	165	—	2,976
Corporate debt securities	1	—	—	1	—	2
Other	387	—	41	(1	) —	427
Total U.S. plans	\$3,278	\$88	\$104	\$137	\$1	\$3,608
Non-U.S. defined benefit pension plans						
Other	\$—	\$—	\$—	\$—	\$—	\$—
Total non-U.S. plans	\$—	\$—	\$—	\$—	\$—	\$—
OPEB plans						
COLI	\$1,381	\$—	\$70	\$(24	) \$—	\$1,427



Total OPEB plans	\$1,381	\$—	\$70	\$(24	) \$—	\$1,427
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Year ended December 31, 2010 (in millions)	Fair value, January 1, 2010	Actual return on plan assets		Purchases, sales and settlements, net	Transfers in and/or out of level 3	Fair value, December 31, 2010
		Realized gains/(losses)	Unrealized gains/(losses)			
U.S. defined benefit pension plans						
Equities	\$—	\$—	\$—	\$—	\$—	\$—
Common/collective trust funds <sup>(a)</sup>	284	—	(90	) —	—	194
Limited partnerships:						
Hedge funds	680	(1	) 14	388	79	1,160
Private equity	874	3	108	235	12	1,232
Real estate	196	3	16	89	—	304
Real assets	—	—	—	—	—	—
Total limited partnerships	1,750	5	138	712	91	2,696
Corporate debt securities	—	—	—	—	1	1
Other	334	—	53	—	—	387
Total U.S. plans	\$2,368	\$5	\$101	\$712	\$92	\$3,278
Non-U.S. defined benefit pension plans						
Other	\$13	\$—	\$(1	) \$(12	) \$—	\$—
Total non-U.S. plans	\$13	\$—	\$(1	) \$(12	) \$—	\$—
OPEB plans						
COLI	\$1,269	\$—	\$137	\$(25	) \$—	\$1,381
Total OPEB plans	\$1,269	\$—	\$137	\$(25	) \$—	\$1,381

(a) The prior period has been revised to consider redemption notification periods in determining the classification of investments within the fair value hierarchy.

## Estimated future benefit payments

The following table presents benefit payments expected to be paid, which include the effect of expected future service, for the years indicated. The OPEB medical and life insurance payments are net of expected retiree contributions.

Year ended December 31, (in millions)	U.S. defined benefit pension plans	Non-U.S. defined benefit pension plans	OPEB before Medicare Part D subsidy	Medicare Part D subsidy
2013	\$1,159	\$102	\$92	\$11
2014	1,162	101	91	12
2015	705	108	89	13
2016	709	110	87	14
2017	711	112	84	14
Years 2018–2022	3,555	626	376	65

## Note 10 – Employee stock-based incentives

## Employee stock-based awards

In 2012, 2011 and 2010, JPMorgan Chase granted long-term stock-based awards to certain key employees under the 2005 Long-Term Incentive Plan, which was last amended in May 2011 (“LTIP”). Under the terms of the LTIP, as of December 31, 2012, 283 million shares of common stock are available for issuance through May 2015. The LTIP is the only active plan under which the Firm is currently granting stock-based incentive awards. In the following discussion, the LTIP, plus prior Firm plans and plans assumed as the result of acquisitions, are referred to collectively as the “LTI Plans,” and such plans constitute the Firm’s stock-based incentive plans.

Restricted stock units (“RSUs”) are awarded at no cost to the recipient upon their grant. RSUs are generally granted annually and generally vest at a rate of 50% after two years and 50% after three years and convert into shares of common stock at the vesting date. In addition, RSUs typically include full-career eligibility provisions, which allow employees to continue to vest upon voluntary termination, subject to post-employment and other restrictions based on age or service-related requirements. All of these awards are subject to forfeiture until vested and contain clawback provisions that may result in cancellation prior to vesting under certain specified circumstances. RSUs entitle the recipient to receive cash payments equivalent to any dividends paid on the underlying common stock during the period the RSUs are outstanding and, as such, are considered participating securities as discussed in Note 24 on page 301 of this Annual Report.

Under the LTI Plans, stock options and stock appreciation rights (“SARs”) have generally been granted with an exercise price equal to the fair value of JPMorgan Chase’s common stock on the grant date. The Firm typically awards SARs to certain key employees once per year; the Firm also periodically grants employee stock options and SARs to individual employees. The 2012, 2011 and 2010 grants of SARs to key employees vest ratably over five years (i.e., 20% per year) and contain clawback provisions similar to RSUs. The 2012, 2011 and 2010 grants of SARs contain full-career eligibility provisions. SARs generally expire ten years after the grant date.

The Firm separately recognizes compensation expense for each tranche of each award as if it were a separate award with its own vesting date. Generally, for each tranche granted, compensation expense is recognized on a straight-line basis from the grant date until the vesting date of the respective tranche, provided that the employees will not become full-career eligible during the vesting period. For awards with full-career eligibility provisions and awards granted with no future substantive service requirement, the Firm accrues the estimated value of awards expected to be awarded to employees as of the grant date without giving consideration to the impact of post-employment restrictions. For each tranche granted to employees who will become full-career eligible during the vesting period, compensation expense is recognized on a straight-line basis from the grant date until the earlier of the employee’s full-career eligibility date or the vesting date of the respective tranche.

The Firm’s policy for issuing shares upon settlement of employee stock-based incentive awards is to issue either new shares of common stock or treasury shares. During 2012, 2011 and 2010, the Firm settled all of its employee stock-based awards by issuing treasury shares.

In January 2008, the Firm awarded to its Chairman and Chief Executive Officer up to 2 million SARs. The terms of this award are distinct from, and more restrictive than, other equity grants regularly awarded by the Firm. Effective January 2013, the Compensation Committee and Board of Directors determined that, while all the requirements for vesting of these awards have been met, vesting should be deferred for a period of up to 18 months (i.e., up to July 22, 2014), to enable the Firm to make progress against the Firm’s strategic priorities and performance goals, including remediation relating to the CIO matter. The SARs, which have a 10-year term, will become exercisable no earlier than July 22, 2014, and have an exercise price of \$39.83 (the price of JPMorgan Chase common stock on the date of grant). Vesting will be subject to a Board determination taking into consideration the extent of such progress and such other factors as it deems relevant. The expense related to this award is dependent on changes in fair value of the SARs through the date at which the award is finalized, and the cumulative expense is recognized ratably over the service period, which was initially assumed to be five years but, effective in the first quarter of 2013, has been extended to six and one-half years. The Firm recognized \$5 million, \$(4) million and \$4 million in compensation expense in 2012, 2011 and 2010, respectively, for this award.



## Notes to consolidated financial statements

## RSUs, employee stock options and SARs activity

Compensation expense for RSUs is measured based on the number of shares granted multiplied by the stock price at the grant date, and for employee stock options and SARs, is measured at the grant date using the Black-Scholes valuation model. Compensation expense for these awards is recognized in net income as described previously. The following table summarizes JPMorgan Chase's RSUs, employee stock options and SARs activity for 2012.

Year ended December 31, 2012 (in thousands, except weighted-average data, and where otherwise stated)	RSUs		Options/SARs		Weighted-average remaining contractual life (in years)	Aggregate intrinsic value
	Number of shares	Weighted-average grant date fair value	Number of awards	Weighted-average exercise price		
Outstanding, January 1	166,631	\$ 37.65	155,761	\$ 40.58		
Granted	59,646	35.73	14,738	35.70		
Exercised or vested	(79,062)	30.91	(18,675)	26.45		
Forfeited	(5,209)	40.22	(3,888)	38.07		
Canceled	NA	NA	(32,030)	40.10		
Outstanding, December 31	142,006	\$ 40.49	115,906	\$ 42.44	5.5	\$721,059
Exercisable, December 31	NA	NA	70,576	45.87	4.2	420,713

The total fair value of RSUs that vested during the years ended December 31, 2012, 2011 and 2010, was \$2.8 billion, \$5.4 billion and \$2.3 billion, respectively. The weighted-average grant date per share fair value of stock options and SARs granted during the years ended December 31, 2012, 2011 and 2010, was \$8.89, \$13.04 and \$12.27, respectively. The total intrinsic value of options exercised during the years ended December 31, 2012, 2011 and 2010, was \$283 million, \$191 million and \$154 million, respectively.

## Compensation expense

The Firm recognized the following noncash compensation expense related to its various employee stock-based incentive plans in its Consolidated Statements of Income.

Year ended December 31, (in millions)	2012	2011	2010
Cost of prior grants of RSUs and SARs that are amortized over their applicable vesting periods	\$1,810	\$1,986	\$2,479
Accrual of estimated costs of RSUs and SARs to be granted in future periods including those to full-career eligible employees	735	689	772
Total noncash compensation expense related to employee stock-based incentive plans	\$2,545	\$2,675	\$3,251

At December 31, 2012, approximately \$909 million (pretax) of compensation cost related to unvested awards had not yet been charged to net income. That cost is expected to be amortized into compensation expense over a weighted-average period of 0.9 years. The Firm does not capitalize any compensation cost related to share-based compensation awards to employees.

## Cash flows and tax benefits

Income tax benefits related to stock-based incentive arrangements recognized in the Firm's Consolidated Statements of Income for the years ended December 31, 2012, 2011 and 2010, were \$1.0 billion, \$1.0 billion and \$1.3 billion, respectively.

The following table sets forth the cash received from the exercise of stock options under all stock-based incentive arrangements, and the actual income tax benefit realized related to tax deductions from the exercise of the stock options.

Year ended December 31, (in millions)	2012	2011	2010
Cash received for options exercised	\$333	\$354	\$205
Tax benefit realized <sup>(a)</sup>	53	31	14

(a)

The tax benefit realized from dividends or dividend equivalents paid on equity-classified share-based payment awards that are charged to retained earnings are recorded as an increase to additional paid-in capital and included in the pool of excess tax benefits available to absorb tax deficiencies on share-based payment awards.

## Valuation assumptions

The following table presents the assumptions used to value employee stock options and SARs granted during the years ended December 31, 2012, 2011 and 2010, under the Black-Scholes valuation model.

Year ended December 31,	2012		2011		2010	
Weighted-average annualized valuation assumptions						
Risk-free interest rate	1.19	%	2.58	%	3.89	%
Expected dividend yield <sup>(a)</sup>	3.15		2.20		3.13	
Expected common stock price volatility	35		34		37	
Expected life (in years)	6.6		6.5		6.4	

In 2012 and 2011, the expected dividend yield was determined using forward-looking assumptions. In 2010 the expected dividend yield was determined using historical dividend yields.

The expected volatility assumption is derived from the implied volatility of JPMorgan Chase's stock options. The expected life assumption is an estimate of the length of time that an employee might hold an option or SAR before it is exercised or canceled, and the assumption is based on the Firm's historical experience.

## Note 11 – Noninterest expense

The following table presents the components of noninterest expense.

Year ended December 31, (in millions)	2012	2011	2010
Compensation expense <sup>(a)</sup>	\$30,585	\$29,037	\$28,124
Noncompensation expense:			
Occupancy expense	3,925	3,895	3,681
Technology, communications and equipment expense	5,224	4,947	4,684
Professional and outside services	7,429	7,482	6,767
Marketing	2,577	3,143	2,446
Other expense <sup>(b)(c)</sup>	14,032	13,559	14,558
Amortization of intangibles	957	848	936
Total noncompensation expense	34,144	33,874	33,072
Total noninterest expense	\$64,729	\$62,911	\$61,196

<sup>(a)</sup> Expense for 2010 includes a payroll tax expense related to the United Kingdom (“U.K.”) Bank Payroll Tax on certain compensation awarded from December 9, 2009, to April 5, 2010, to relevant banking employees.

<sup>(b)</sup> Included litigation expense of \$5.0 billion, \$4.9 billion and \$7.4 billion for the years ended December 31, 2012, 2011 and 2010, respectively.

<sup>(c)</sup> Included FDIC-related expense of \$1.7 billion, \$1.5 billion and \$899 million for the years ended December 31, 2012, 2011 and 2010, respectively.

## Notes to consolidated financial statements

## Note 12 – Securities

Securities are primarily classified as AFS or trading. Securities classified as trading assets are discussed in Note 3 on pages 196–214 of this Annual Report. Predominantly all of the AFS securities portfolio is held by CIO in connection with its asset-liability management objectives. At December 31, 2012, the average credit rating of the debt securities comprising the AFS portfolio was AA+ (based upon external ratings where available, and where not available, based primarily upon internal ratings which correspond to ratings as defined by S&P and Moody’s). AFS securities are carried at fair value on the Consolidated Balance Sheets. Unrealized gains and losses, after any applicable hedge accounting adjustments, are reported as net increases or decreases to accumulated other comprehensive income/(loss). The specific identification method is used to determine realized gains and losses on AFS securities, which are included in securities gains/(losses) on the Consolidated Statements of Income.

## Other-than-temporary impairment

AFS debt and equity securities in unrealized loss positions are analyzed as part of the Firm’s ongoing assessment of other-than-temporary impairment (“OTTI”). For most types of debt securities, the Firm considers a decline in fair value to be other-than-temporary when the Firm does not expect to recover the entire amortized cost basis of the security. For beneficial interests in securitizations that are rated below “AA” at their acquisition, or that can be contractually prepaid or otherwise settled in such a way that the Firm would not recover substantially all of its recorded investment, the Firm considers an OTTI to have occurred when there is an adverse change in expected cash flows. For AFS equity securities, the Firm considers a decline in fair value to be other-than-temporary if it is probable that the Firm will not recover its amortized cost basis.

Potential OTTI is considered using a variety of factors, including the length of time and extent to which the market value has been less than cost; adverse conditions specifically related to the industry, geographic area or financial condition of the issuer or underlying collateral of a security; payment structure of the security; changes to the rating of the security by a rating agency; the volatility of the fair value changes; and the Firm’s intent and ability to hold the security until recovery.

For debt securities, the Firm recognizes OTTI losses in earnings if the Firm has the intent to sell the debt security, or if it is more likely than not that the Firm will be required to sell the debt security before recovery of its amortized cost basis. In these circumstances the impairment loss is equal to the full difference between the amortized cost basis and the fair value of the securities. When the Firm has the intent and ability to hold AFS debt securities in an unrealized loss position, it evaluates the expected cash flows to be received and determines if a credit loss exists. In the event of a credit loss, only the amount of impairment associated with the credit loss is recognized in income.

Amounts relating to factors other than credit losses are recorded in OCI.

The Firm’s cash flow evaluations take into account the factors noted above and expectations of relevant market and economic data as of the end of the reporting period. For securities issued in a securitization, the Firm estimates cash flows considering underlying loan-level data and structural features of the securitization, such as subordination, excess spread, overcollateralization or other forms of credit enhancement, and compares the losses projected for the underlying collateral (“pool losses”) against the level of credit enhancement in the securitization structure to determine whether these features are sufficient to absorb the pool losses, or whether a credit loss exists. The Firm also performs other analyses to support its cash flow projections, such as first-loss analyses or stress scenarios.

For equity securities, OTTI losses are recognized in earnings if the Firm intends to sell the security. In other cases the Firm considers the relevant factors noted above, as well as the Firm’s intent and ability to retain its investment for a period of time sufficient to allow for any anticipated recovery in market value, and whether evidence exists to support a realizable value equal to or greater than the carrying value. Any impairment loss on an equity security is equal to the full difference between the amortized cost basis and the fair value of the security.

## Realized gains and losses

The following table presents realized gains and losses and credit losses that were recognized in income from AFS securities.

Year ended December 31, (in millions)	2012	2011	2010
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Realized gains	\$2,610		\$1,811	\$3,382	
Realized losses	(457	)	(142	)	(317
Net realized gains <sup>(a)</sup>	2,153		1,669	3,065	
OTTI losses					
Credit-related <sup>(b)</sup>	(28	)	(76	)	(100
Securities the Firm intends to sell <sup>(c)</sup>	(15	) <sup>(d)</sup>	—	—	
Total OTTI losses recognized in income	(43	)	(76	)	(100
Net securities gains	\$2,110		\$1,593	\$2,965	

(a) Proceeds from securities sold were within approximately 4% of amortized cost in 2012 and 2011, and within approximately 3% of amortized cost in 2010.

(b) Includes other-than-temporary impairment losses recognized in income on certain prime mortgage-backed securities and obligations of U.S. states and municipalities for the year ended December 31, 2012; certain prime mortgage-backed securities for the year ended December 31, 2011; and certain prime mortgage-backed securities and obligations of U.S. states and municipalities for the year ended December 31, 2010.

(c) Represents the excess of the amortized cost over the fair value of certain non-U.S. corporate debt, and non-U.S. government debt securities the Firm intends to sell.

(d) Excludes realized losses of \$24 million on sales of non-U.S. corporate debt, non-U.S. government debt and certain asset-backed securities that had been previously reported as an OTTI loss due to the intention to sell the securities during the year ended December 31, 2012.

The amortized costs and estimated fair values of AFS and held-to-maturity (“HTM”) securities were as follows for the dates indicated.

December 31, (in millions)	2012				2011			
	Amortized cost	Gross unrealized gains	Gross unrealized losses	Fair value	Amortized cost	Gross unrealized gains	Gross unrealized losses	Fair value
Available-for-sale debt securities								
Mortgage-backed securities:								
U.S. government agencies <sup>(a)</sup>	\$93,693	\$ 4,708	\$ 13	\$98,388	\$101,968	\$ 5,141	\$ 2	\$107,107
Residential:								
Prime and Alt-A	1,853	83	3	(c) 1,933	2,170	54	218	(c) 2,006
Subprime	825	28	—	853	1	—	—	1
Non-U.S.	70,358	1,524	29	71,853	66,067	170	687	65,550
Commercial	12,268	948	13	13,203	10,632	650	53	11,229
Total mortgage-backed securities	178,997	7,291	58	186,230	180,838	6,015	960	185,893
U.S. Treasury and government agencies <sup>(a)</sup>	12,022	116	8	12,130	8,184	169	2	8,351
Obligations of U.S. states and municipalities	19,876	1,845	10	21,711	15,404	1,184	48	16,540
Certificates of deposit	2,781	4	2	2,783	3,017	—	—	3,017
Non-U.S. government debt securities	65,168	901	25	66,044	44,944	402	81	45,265
Corporate debt securities <sup>(b)</sup>	37,999	694	84	38,609	63,607	216	1,647	62,176
Asset-backed securities:								
Collateralized loan obligations	27,483	465	52	27,896	24,474	553	166	24,861
Other	12,816	166	11	12,971	15,779	251	57	15,973
Total available-for-sale debt securities	357,142	11,482	250	(c) 368,374	356,247	8,790	2,961	(c) 362,076
Available-for-sale equity securities	2,750	21	—	2,771	2,693	14	2	2,705
Total available-for-sale securities	\$359,892	\$ 11,503	\$250	(c) \$371,145	\$358,940	\$ 8,804	\$2,963	(c) \$364,781
Total held-to-maturity securities	\$7	\$ 1	\$—	\$8	\$12	\$ 1	\$—	\$13

(a) Includes total U.S. government-sponsored enterprise obligations with fair values of \$84.0 billion and \$89.3 billion at December 31, 2012 and 2011, respectively, which were predominantly mortgage-related.

(b) Consists primarily of bank debt including sovereign government-guaranteed bank debt.

Includes a total of \$91 million (pretax) of unrealized losses related to prime mortgage-backed securities for which (c) credit losses have been recognized in income at December 31, 2011. These unrealized losses are not credit-related and remain reported in AOCI. There were no such losses at December 31, 2012.

## Notes to consolidated financial statements

## Securities impairment

The following tables present the fair value and gross unrealized losses for AFS securities by aging category at December 31, 2012 and 2011.

December 31, 2012 (in millions)	Securities with gross unrealized losses				Total fair value	Total gross unrealized losses
	Less than 12 months	Gross unrealized losses	12 months or more	Gross unrealized losses		
	Fair value		Fair value			
Available-for-sale debt securities						
Mortgage-backed securities:						
U.S. government agencies	\$2,440	\$13	\$—	\$—	\$2,440	\$13
Residential:						
Prime and Alt-A	218	2	76	1	294	3
Subprime	—	—	—	—	—	—
Non-U.S.	2,442	6	734	23	3,176	29
Commercial	1,159	8	312	5	1,471	13
Total mortgage-backed securities	6,259	29	1,122	29	7,381	58
U.S. Treasury and government agencies	4,198	8	—	—	4,198	8
Obligations of U.S. states and municipalities	907	10	—	—	907	10
Certificates of deposit	741	2	—	—	741	2
Non-U.S. government debt securities	14,527	21	1,927	4	16,454	25
Corporate debt securities	2,651	10	5,641	74	8,292	84
Asset-backed securities:						
Collateralized loan obligations	6,328	17	2,063	35	8,391	52
Other	2,076	7	275	4	2,351	11
Total available-for-sale debt securities	37,687	104	11,028	146	48,715	250
Available-for-sale equity securities	—	—	—	—	—	—
Total securities with gross unrealized losses	\$37,687	\$104	\$11,028	\$146	\$48,715	\$250

December 31, 2011 (in millions)	Securities with gross unrealized losses				Total fair value	Total gross unrealized losses
	Less than 12 months	Gross unrealized losses	12 months or more	Gross unrealized losses		
	Fair value		Fair value			
Available-for-sale debt securities						
Mortgage-backed securities:						
U.S. government agencies	\$2,724	\$2	\$—	\$—	\$2,724	\$2
Residential:						
Prime and Alt-A	649	12	970	206	1,619	218
Subprime	—	—	—	—	—	—
Non-U.S.	30,500	266	25,176	421	55,676	687
Commercial	837	53	—	—	837	53
Total mortgage-backed securities	34,710	333	26,146	627	60,856	960

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U.S. Treasury and government agencies	3,369	2	—	—	3,369	2
Obligations of U.S. states and municipalities	147	42	40	6	187	48
Certificates of deposit	—	—	—	—	—	—
Non-U.S. government debt securities	11,901	66	1,286	15	13,187	81
Corporate debt securities	22,230	901	9,585	746	31,815	1,647
Asset-backed securities:						
Collateralized loan obligations	5,610	49	3,913	117	9,523	166
Other	4,735	40	1,185	17	5,920	57
Total available-for-sale debt securities	82,702	1,433	42,155	1,528	124,857	2,961
Available-for-sale equity securities	338	2	—	—	338	2
Total securities with gross unrealized losses	\$83,040	\$1,435	\$42,155	\$1,528	\$125,195	\$2,963

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## Other-than-temporary impairment

The following table presents OTTI losses that are included in the securities gains and losses table above.

Year ended December 31, (in millions)	2012	2011	2010
Debt securities the Firm does not intend to sell that have credit losses			
Total OTTI <sup>(a)</sup>	\$(113 )	\$(27 )	\$(94 )
Losses recorded in/(reclassified from) AOCI	85	(49 )	(6 )
Total credit losses recognized in income <sup>(b)</sup>	(28 ) <sup>(d)</sup>	(76 ) <sup>(f)</sup>	(100 ) <sup>(g)</sup>
Securities the Firm intends to sell <sup>(c)</sup>	(15 ) <sup>(e)</sup>	—	—
Total OTTI losses recognized in income	\$(43 )	\$(76 )	\$(100 )

For initial OTTI, represents the excess of the amortized cost over the fair value of AFS debt securities. For

(a) subsequent impairments of the same security, represents additional declines in fair value subsequent to previously recorded OTTI, if applicable.

(b) Subsequent credit losses may be recorded on securities without a corresponding further decline in fair value if there has been a decline in expected cash flows.

(c) Represents the excess of the amortized cost over the fair value of certain non-U.S. corporate debt, and non-U.S. government debt securities the Firm intends to sell.

(d) Represents the credit loss component on certain prime mortgage-backed securities and obligations of U.S. states and municipalities for the year ended December 31, 2012, that the Firm does not intend to sell. At December 31, 2012, there were no unrealized losses remaining in AOCI on securities for which credit losses were recognized in income during 2012.

(e) Excludes realized losses of \$24 million on sales of non-U.S. corporate debt, non-U.S. government debt and certain asset-backed securities that had been previously reported as an OTTI loss due to the intention to sell the securities during the year ended December 31, 2012.

(f) Represents the credit loss component on certain prime mortgage-backed securities for the year ended December 31, 2011, that the Firm did not intend to sell.

(g) Represents the credit loss component on certain prime mortgage-backed securities and obligations of U.S. states and municipalities for the year ended December 31, 2010 that the Firm did not intend to sell.

## Changes in the credit loss component of credit-impaired debt securities

The following table presents a rollforward for the years ended December 31, 2012, 2011 and 2010, of the credit loss component of OTTI losses that have been recognized in income, related to debt securities that the Firm does not intend to sell.

Year ended December 31, (in millions)	2012	2011	2010
Balance, beginning of period	\$708	\$632	\$578
Additions:			
Newly credit-impaired securities	21	4	—
Increase in losses on previously credit-impaired securities	—	—	94
Losses reclassified from other comprehensive income on previously credit-impaired securities	7	72	6
Reductions:			
Sales of credit-impaired securities	(214 )	—	(31 )
Impact of new accounting guidance related to VIEs	—	—	(15 )
Balance, end of period	\$522	\$708	\$632
Gross unrealized losses			

Gross unrealized losses have generally decreased since December 31, 2011, including those that have been in an unrealized loss position for 12 months or more. Except for certain securities that the Firm intends to sell for which the unrealized losses have been recognized in income, as of December 31, 2012, the Firm does not intend to sell the

securities with a loss position in AOCI, and it is not likely that the Firm will be required to sell these securities before recovery of their amortized cost basis. Except for the securities reported in the table above for which credit losses have been recognized in income, the Firm believes that the securities with an unrealized loss in AOCI are not other-than-temporarily impaired as of December 31, 2012.

## Notes to consolidated financial statements

## Contractual maturities and yields

The following table presents the amortized cost and estimated fair value at December 31, 2012, of JPMorgan Chase's AFS and HTM securities by contractual maturity.

By remaining maturity December 31, 2012 (in millions)	Due in one year or less	Due after one year through five years	Due after five years through 10 years	Due after 10 years <sup>(c)</sup>	Total	
Available-for-sale debt securities						
Mortgage-backed securities <sup>(a)</sup>						
Amortized cost	\$102	\$11,915	\$10,568	\$156,412	\$178,997	
Fair value	103	12,268	11,008	162,851	186,230	
Average yield <sup>(b)</sup>	1.91	% 1.94	% 2.81	% 3.15	% 3.05	%
U.S. Treasury and government agencies <sup>(a)</sup>						
Amortized cost	\$7,779	\$1,502	\$1,651	\$1,090	\$12,022	
Fair value	7,805	1,558	1,653	1,114	12,130	
Average yield <sup>(b)</sup>	0.51	% 2.29	% 1.17	% 0.78	% 0.85	%
Obligations of U.S. states and municipalities						
Amortized cost	\$23	\$436	\$972	\$18,445	\$19,876	
Fair value	23	471	1,033	20,184	21,711	
Average yield <sup>(b)</sup>	3.45	% 5.52	% 4.08	% 6.02	% 5.91	%
Certificates of deposit						
Amortized cost	\$2,730	\$51	\$—	\$—	\$2,781	
Fair value	2,729	54	—	—	2,783	
Average yield <sup>(b)</sup>	5.78	% 3.28	% —	% —	% 5.73	%
Non-U.S. government debt securities						
Amortized cost	\$18,248	\$21,937	\$22,870	\$2,113	\$65,168	
Fair value	18,254	22,172	23,386	2,232	66,044	
Average yield <sup>(b)</sup>	1.23	% 2.03	% 1.40	% 1.65	% 1.57	%
Corporate debt securities						
Amortized cost	\$5,605	\$23,342	\$8,899	\$153	\$37,999	
Fair value	5,618	23,732	9,098	161	38,609	
Average yield <sup>(b)</sup>	2.09	% 2.37	% 2.57	% 3.99	% 2.38	%
Asset-backed securities						
Amortized cost	\$500	\$3,104	\$17,129	\$19,566	\$40,299	
Fair value	501	3,145	17,468	19,753	40,867	
Average yield <sup>(b)</sup>	1.08	% 2.10	% 1.75	% 2.09	% 1.93	%
Total available-for-sale debt securities						
Amortized cost	\$34,987	\$62,287	\$62,089	\$197,779	\$357,142	
Fair value	35,033	63,400	63,646	206,295	368,374	
Average yield <sup>(b)</sup>	1.57	% 2.17	% 1.94	% 3.29	% 2.69	%
Available-for-sale equity securities						
Amortized cost	\$—	\$—	\$—	\$2,750	\$2,750	
Fair value	—	—	—	2,771	2,771	
Average yield <sup>(b)</sup>	—	% —	% —	% 0.36	% 0.36	%
Total available-for-sale securities						
Amortized cost	\$34,987	\$62,287	\$62,089	\$200,529	\$359,892	
Fair value	35,033	63,400	63,646	209,066	371,145	
Average yield <sup>(b)</sup>	1.57	% 2.17	% 1.94	% 3.25	% 2.67	%

Total held-to-maturity securities						
Amortized cost	\$—	\$6	\$1	\$—	\$7	
Fair value	—	7	1	—	8	
Average yield <sup>(b)</sup>	—	%6.85	%6.64	%—	%6.83	%

(a) U.S. government agencies and U.S. government-sponsored enterprises were the only issuers whose securities exceeded 10% of JPMorgan Chase's total stockholders' equity at December 31, 2012.

(b) Average yield is computed using the effective yield of each security owned at the end of the period, weighted based on the amortized cost of each security. The effective yield considers the contractual coupon, amortization of premiums and accretion of discounts, and the effect of related hedging derivatives. Taxable-equivalent amounts are used where applicable. The effective yield excludes unscheduled principal prepayments; and accordingly, actual maturities of securities may differ from their contractual or expected maturities as certain securities may be prepaid.

(c) Includes securities with no stated maturity. Substantially all of the Firm's residential mortgage-backed securities and collateralized mortgage obligations are due in 10 years or more, based on contractual maturity. The estimated duration, which reflects anticipated future prepayments based on a consensus of dealers in the market, is approximately three years for agency residential mortgage-backed securities, two years for agency residential collateralized mortgage obligations and four years for nonagency residential collateralized mortgage obligations.



## Note 13 – Securities financing activities

JPMorgan Chase enters into resale agreements, repurchase agreements, securities borrowed transactions and securities loaned transactions (collectively, “securities financing agreements”) primarily to finance the Firm’s inventory positions, acquire securities to cover short positions, accommodate customers’ financing needs, and settle other securities obligations.

Securities financing agreements are treated as collateralized financings on the Firm’s Consolidated Balance Sheets. Resale and repurchase agreements are generally carried at the amounts at which the securities will be subsequently sold or repurchased, plus accrued interest. Securities borrowed and securities loaned transactions are generally carried at the amount of cash collateral advanced or received. Where appropriate under applicable accounting guidance, resale and repurchase agreements with the same counterparty are reported on a net basis. Fees received and paid in connection with securities financing agreements are recorded in interest income and interest expense, respectively. The Firm has elected the fair value option for certain securities financing agreements. For further information regarding the fair value option, see Note 4 on pages 214–216 of this Annual Report. The securities financing agreements for which the fair value option has been elected are reported within securities purchased under resale agreements; securities loaned or sold under repurchase agreements; and securities borrowed on the Consolidated Balance Sheets. Generally, for agreements carried at fair value, current-period interest accruals are recorded within interest income and interest expense, with changes in fair value reported in principal transactions revenue. However, for financial instruments containing embedded derivatives that would be separately accounted for in accordance with accounting guidance for hybrid instruments, all changes in fair value, including any interest elements, are reported in principal transactions revenue.

The following table details the Firm’s securities financing agreements, all of which are accounted for as collateralized financings during the periods presented.

December 31, (in millions)	2012	2011
Securities purchased under resale agreements <sup>(a)</sup>	\$295,413	\$235,000
Securities borrowed <sup>(b)</sup>	119,017	142,462
Securities sold under repurchase agreements <sup>(c)</sup>	\$215,560	\$197,789
Securities loaned <sup>(d)</sup>	23,582	14,214

(a) At December 31, 2012 and 2011, included resale agreements of \$24.3 billion and \$22.2 billion, respectively, accounted for at fair value.

(b) At December 31, 2012 and 2011, included securities borrowed of \$10.2 billion and \$15.3 billion, respectively, accounted for at fair value.

(c) At December 31, 2012 and 2011, included repurchase agreements of \$3.9 billion and \$6.8 billion, respectively, accounted for at fair value.

(d) At December 31, 2012, included securities loaned of \$457 million accounted for at fair value. There were no securities loaned accounted for at fair value at December 31, 2011.

The amounts reported in the table above were reduced by \$96.9 billion and \$115.7 billion at December 31, 2012 and 2011, respectively, as a result of agreements in effect that meet the specified conditions for net presentation under applicable accounting guidance.

JPMorgan Chase’s policy is to take possession, where possible, of securities purchased under resale agreements and of securities borrowed. The Firm monitors the value of the underlying securities (primarily G7 government securities, U.S. agency securities and agency MBS, and equities) that it has received from its counterparties and either requests additional collateral or returns a portion of the collateral when appropriate in light of the market value of the underlying securities. Margin levels are established initially based upon the counterparty and type of collateral and monitored on an ongoing basis to protect against declines in collateral value in the event of default. JPMorgan Chase typically enters into master netting agreements and other collateral arrangements with its resale agreement and securities borrowed counterparties, which provide for the right to liquidate the purchased or borrowed securities in the event of a customer default. As a result of the Firm’s credit risk mitigation practices with respect to resale and

securities borrowed agreements as described above, the Firm did not hold any reserves for credit impairment with respect to these agreements as of December 31, 2012 and 2011.

For further information regarding assets pledged and collateral received in securities financing agreements, see Note 30 on pages 315–316 of this Annual Report.

## Notes to consolidated financial statements

## Note 14 – Loans

## Loan accounting framework

The accounting for a loan depends on management's strategy for the loan, and on whether the loan was credit-impaired at the date of acquisition. The Firm accounts for loans based on the following categories:

- Originated or purchased loans held-for-investment (i.e., "retained"), other than purchased credit-impaired ("PCI") loans

- Loans held-for-sale

- Loans at fair value

- PCI loans held-for-investment

The following provides a detailed accounting discussion of these loan categories:

## Loans held-for-investment (other than PCI loans)

Originated or purchased loans held-for-investment, other than PCI loans, are measured at the principal amount outstanding, net of the following: allowance for loan losses; net charge-offs; interest applied to principal (for loans accounted for on the cost recovery method); unamortized discounts and premiums; and net deferred loan fees or costs.

## Interest income

Interest income on performing loans held-for-investment, other than PCI loans, is accrued and recognized as interest income at the contractual rate of interest. Purchase price discounts or premiums, as well as net deferred loan fees or costs, are amortized into interest income over the life of the loan to produce a level rate of return.

## Nonaccrual loans

Nonaccrual loans are those on which the accrual of interest has been suspended. Loans (other than credit card loans and certain consumer loans insured by U.S. government agencies) are placed on nonaccrual status and considered nonperforming when full payment of principal and interest is in doubt, which for consumer loans, excluding credit card, is generally determined when principal or interest is 90 days or more past due and collateral, if any, is insufficient to cover principal and interest. A loan is determined to be past due when the minimum payment is not received from the borrower by the contractually specified due date or for certain loans (e.g., residential real estate loans), when a monthly payment is due and unpaid for 30 days or more. Consumer, excluding credit card, loans that are less than 90 days past due may be placed on nonaccrual status when there is evidence that full payment of principal and interest is in doubt (e.g., performing junior liens that are subordinate to nonperforming senior liens). Finally, collateral-dependent loans are typically maintained on nonaccrual status.

On the date a loan is placed on nonaccrual status, all interest accrued but not collected is reversed against interest income. In addition, the amortization of deferred amounts is suspended. Interest income on nonaccrual loans may be recognized as cash interest payments are received (i.e., on a cash basis) if the recorded loan balance is deemed fully collectible; however, if there is doubt regarding the ultimate collectibility of the recorded loan balance, all interest cash receipts are applied to reduce the carrying value of the loan (the cost recovery method). For consumer loans, application of this policy typically results in the Firm recognizing interest income on nonaccrual consumer loans on a cash basis.

A loan may be returned to accrual status when repayment is reasonably assured and there has been demonstrated performance under the terms of the loan or, if applicable, the terms of the restructured loan.

As permitted by regulatory guidance, credit card loans are generally exempt from being placed on nonaccrual status; accordingly, interest and fees related to credit card loans continue to accrue until the loan is charged off or paid in full. However, the Firm separately establishes an allowance for the estimated uncollectible portion of accrued interest and fee income on credit card loans. The allowance is established with a charge to interest income and is reported as an offset to loans.

## Allowance for loan losses

The allowance for loan losses represents the estimated probable losses on held-for-investment loans. Changes in the allowance for loan losses are recorded in the provision for credit losses on the Firm's Consolidated Statements of Income. See Note 15 on pages 276–279 of this Annual Report for further information on the Firm's accounting policies for the allowance for loan losses.

## Charge-offs

Consumer loans, other than risk-rated business banking, risk-rated auto and PCI loans, are generally charged off or charged down to the net realizable value of the underlying collateral (i.e., fair value less costs to sell), with an offset to the allowance for loan losses, upon reaching specified stages of delinquency in accordance with standards established by the Federal Financial Institutions Examination Council (“FFIEC”). Residential real estate loans, non-modified credit card loans and scored business banking loans are generally charged off at 180 days past due. In the second quarter of 2012, the Firm revised its policy to charge-off modified credit card loans that do not comply with their modified payment terms at 120 days past due rather than 180 days past due. Auto and student loans are charged off no later than 120 days past due.

Certain consumer loans will be charged off earlier than the FFIEC charge-off standards in certain circumstances as follows:

A charge-off is recognized when a loan is modified in a TDR if the loan is determined to be collateral-dependent. A loan is considered to be collateral-dependent when repayment of the loan is expected to be provided solely by the underlying collateral, rather than by cash flows from the borrower's operations, income or other resources.

Loans to borrowers who have experienced an event (e.g., bankruptcy) that suggests a loss is either known or highly certain are subject to accelerated charge-off standards. Residential real estate and auto loans are charged off when the loan becomes 60 days past due, or sooner if the loan is determined to be collateral-dependent. Credit card and scored business banking loans are charged off within 60 days of receiving notification of the bankruptcy filing or other event. Student loans are generally charged off when the loan becomes 60 days past due after receiving notification of a bankruptcy.

Auto loans are written down to net realizable value upon repossession of the automobile and after a redemption period (i.e., the period during which a borrower may cure the loan) has passed.

Other than in certain limited circumstances, the Firm typically does not recognize charge-offs on government-guaranteed loans.

Wholesale loans, risk-rated business banking loans and risk-rated auto loans are charged off when it is highly certain that a loss has been realized, including situations where a loan is determined to be both impaired and collateral-dependent. The determination of whether to recognize a charge-off includes many factors, including the prioritization of the Firm's claim in bankruptcy, expectations of the workout/restructuring of the loan and valuation of the borrower's equity or the loan collateral.

When a loan is charged down to the estimated net realizable value, the determination of the fair value of the collateral depends on the type of collateral (e.g., securities, real estate). In cases where the collateral is in the form of liquid securities, the fair value is based on quoted market prices or broker quotes. For illiquid securities or other financial assets, the fair value of the collateral is estimated using a discounted cash flow model.

For residential real estate loans, collateral values are based upon external valuation sources. When it becomes likely that a borrower is either unable or unwilling to pay, the Firm obtains a broker's price opinion of the home based on an exterior-only valuation ("exterior opinions"), which is then updated at least every six months thereafter. As soon as practicable after the Firm receives the property in satisfaction of a debt (e.g., by taking legal title or physical possession), generally, either through foreclosure or upon the execution of a deed in lieu of foreclosure transaction with the borrower, the Firm obtains an appraisal based on an inspection that includes the interior of the home ("interior appraisals"). Exterior opinions and interior appraisals are discounted based upon the Firm's experience with actual liquidation values as compared to the estimated values provided by exterior opinions and interior appraisals, considering state- and product-specific factors.

For commercial real estate loans, collateral values are generally based on appraisals from internal and external valuation sources. Collateral values are typically updated every six to twelve months, either by obtaining a new appraisal or by performing an internal analysis, in accordance with the Firm's policies. The Firm also considers both borrower- and market-specific factors, which may result in obtaining appraisal updates or broker price opinions at more frequent intervals.

#### Loans held-for-sale

Held-for-sale loans are measured at the lower of cost or fair value, with valuation changes recorded in noninterest revenue. For consumer loans, the valuation is performed on a portfolio basis. For wholesale loans, the valuation is performed on an individual loan basis.

Interest income on loans held-for-sale is accrued and recognized based on the contractual rate of interest.

Loan origination fees or costs and purchase price discounts or premiums are deferred in a contra loan account until the related loan is sold. The deferred fees and discounts or premiums are an adjustment to the basis of the loan and therefore are included in the periodic determination of the lower of cost or fair value adjustments and/or the gain or losses recognized at the time of sale.

Held-for-sale loans are subject to the nonaccrual policies described above.

Because held-for-sale loans are recognized at the lower of cost or fair value, the Firm's allowance for loan losses and charge-off policies do not apply to these loans.

## Notes to consolidated financial statements

## Loans at fair value

Loans used in a market-making strategy or risk managed on a fair value basis are measured at fair value, with changes in fair value recorded in noninterest revenue.

For these loans, the earned current contractual interest payment is recognized in interest income. Changes in fair value are recognized in noninterest revenue. Loan origination fees are recognized upfront in noninterest revenue. Loan origination costs are recognized in the associated expense category as incurred.

Because these loans are recognized at fair value, the Firm's nonaccrual, allowance for loan losses, and charge-off policies do not apply to these loans.

See Note 4 on pages 214–216 of this Annual Report for further information on the Firm's elections of fair value accounting under the fair value option. See Note 3 and Note 4 on pages 196–214 and 214–216 of this Annual Report for further information on loans carried at fair value and classified as trading assets.

## PCI loans

PCI loans held-for-investment are initially measured at fair value. PCI loans have evidence of credit deterioration since the loan's origination date and therefore it is probable, at acquisition, that all contractually required payments will not be collected. Because PCI loans are initially measured at fair value, which includes an estimate of future credit losses, no allowance for loan losses related to PCI loans is recorded at the acquisition date. See page 266 of this Note for information on accounting for PCI loans subsequent to their acquisition.

## Loan classification changes

Loans in the held-for-investment portfolio that management decides to sell are transferred to the held-for-sale portfolio at the lower of cost or fair value on the date of transfer. Credit-related losses are charged against the allowance for loan losses; losses due to changes in interest rates or foreign currency exchange rates are recognized in noninterest revenue.

In the event that management decides to retain a loan in the held-for-sale portfolio, the loan is transferred to the held-for-investment portfolio at the lower of cost or fair value on the date of transfer. These loans are subsequently assessed for impairment based on the Firm's allowance methodology. For a further discussion of the methodologies used in establishing the Firm's allowance for loan losses, see Note 15 on pages 276–279 of this Annual Report.

## Loan modifications

The Firm seeks to modify certain loans in conjunction with its loss-mitigation activities. Through the modification, JPMorgan Chase grants one or more concessions to a borrower who is experiencing financial difficulty in order to minimize the Firm's economic loss, avoid foreclosure or repossession of the collateral, and to ultimately maximize payments received by the Firm from the borrower. The concessions granted vary by program and by borrower-specific characteristics, and may include interest rate reductions, term extensions, payment deferrals, principal forgiveness, or the acceptance of equity or other assets in lieu of payments.

Such modifications are accounted for and reported as troubled debt restructurings ("TDRs"). A loan that has been modified in a TDR is generally considered to be impaired until it matures, is repaid, or is otherwise liquidated, regardless of whether the borrower performs under the modified terms. In certain limited cases, the effective interest rate applicable to the modified loan is at or above the current market rate at the time of the restructuring. In such circumstances, and assuming that the loan subsequently performs under its modified terms and the Firm expects to collect all contractual principal and interest cash flows, the loan is disclosed as impaired and as a TDR only during the year of the modification; in subsequent years, the loan is not disclosed as an impaired loan or as a TDR so long as repayment of the restructured loan under its modified terms is reasonably assured.

Loans, except for credit card loans, modified in a TDR are generally placed on nonaccrual status, although in many cases such loans were already on nonaccrual status prior to modification. These loans may be returned to performing status (the accrual of interest is resumed) if the following criteria are met: (a) the borrower has performed under the modified terms for a minimum of six months and/or six payments, and (b) the Firm has an expectation that repayment of the modified loan is reasonably assured based on, for example, the borrower's debt capacity and level of future earnings, collateral values, LTV ratios, and other current market considerations. In certain limited and well-defined circumstances in which the loan is current at the modification date, such loans are not placed on nonaccrual status at

the time of modification.

Because loans modified in TDRs are considered to be impaired, these loans are measured for impairment using the Firm's established asset-specific allowance methodology, which considers the expected re-default rates for the modified loans. A loan modified in a TDR remains subject to the asset-specific allowance methodology throughout its remaining life, regardless of whether the loan is performing and has been returned to accrual status. For further discussion of the methodology used to estimate the Firm's asset-specific allowance, see Note 15 on pages 276–279 of this Annual Report.



### Foreclosed property

The Firm acquires property from borrowers through loan restructurings, workouts, and foreclosures. Property acquired may include real property (e.g., residential real estate, land, buildings, and fixtures) and commercial and personal property (e.g., aircraft, railcars, and ships).

The Firm recognizes foreclosed property upon receiving assets in satisfaction of a debt (e.g., by taking legal title or physical possession). For loans collateralized by real property, the Firm generally recognizes the asset received at foreclosure sale or upon the execution of a deed in lieu of

foreclosure transaction with the borrower. Foreclosed assets are reported in other assets on the Consolidated Balance Sheets and initially recognized at fair value less costs to sell. Each quarter the fair value of the acquired property is reviewed and adjusted, if necessary, to the lower of cost or fair value. Subsequent adjustments to fair value are charged/credited to noninterest revenue. Operating expense, such as real estate taxes and maintenance, are charged to other expense.

### Loan portfolio

The Firm's loan portfolio is divided into three portfolio segments, which are the same segments used by the Firm to determine the allowance for loan losses: Consumer, excluding credit card; Credit card; and Wholesale. Within each portfolio segment, the Firm monitors and assesses the credit risk in the following classes of loans, based on the risk characteristics of each loan class:

Consumer, excluding credit card <sup>(a)</sup>	Credit card	Wholesale <sup>(c)</sup>
Residential real estate – excluding PCI		
• Home equity – senior lien		
• Home equity – junior lien		
• Prime mortgage, including option ARMs		
• Subprime mortgage		• Commercial and industrial
Other consumer loans		• Real estate
• Auto <sup>(b)</sup>	• Credit card loans	• Financial institutions
• Business banking <sup>(b)</sup>		• Government agencies
• Student and other		• Other
Residential real estate – PCI		
• Home equity		
• Prime mortgage		
• Subprime mortgage		
• Option ARMs		

<sup>(a)</sup> Includes loans reported in CCB and residential real estate loans reported in the AM business segment and in Corporate/Private Equity.

<sup>(b)</sup> Includes certain business banking and auto dealer risk-rated loans that apply the wholesale methodology for determining the allowance for loan losses; these loans are managed by CCB, and therefore, for consistency in presentation, are included with the other consumer loan classes.

<sup>(c)</sup> Includes loans reported in CIB, CB and AM business segments and in Corporate/Private Equity.

## Notes to consolidated financial statements

The following tables summarize the Firm's loan balances by portfolio segment.

December 31, 2012 (in millions)	Consumer, excluding credit card	Credit card <sup>(a)</sup>	Wholesale	Total	
Retained	\$292,620	\$127,993	\$306,222	\$726,835	(b)
Held-for-sale	—	—	4,406	4,406	
At fair value	—	—	2,555	2,555	
Total	\$292,620	\$127,993	\$313,183	\$733,796	

December 31, 2011 (in millions)	Consumer, excluding credit card	Credit card <sup>(a)</sup>	Wholesale	Total	
Retained	\$308,427	\$132,175	\$278,395	\$718,997	(b)
Held-for-sale	—	102	2,524	2,626	
At fair value	—	—	2,097	2,097	
Total	\$308,427	\$132,277	\$283,016	\$723,720	

(a) Includes billed finance charges and fees net of an allowance for uncollectible amounts.

Loans (other than PCI loans and those for which the fair value option has been elected) are presented net of (b) unearned income, unamortized discounts and premiums, and net deferred loan costs of \$2.5 billion and \$2.7 billion at December 31, 2012 and 2011, respectively.

The following table provides information about the carrying value of retained loans purchased, sold and reclassified to held-for-sale during the periods indicated. These tables exclude loans recorded at fair value. On an ongoing basis, the Firm manages its exposure to credit risk. Selling loans is one way that the Firm reduces its credit exposures.

Years ended December 31, (in millions)	2012				2011			
	Consumer, excluding credit card	Credit card	Wholesale	Total	Consumer, excluding credit card	Credit card	Wholesale	Total
Purchases	\$6,601	\$—	\$827	\$7,428	\$7,525	\$—	\$906	\$8,431
Sales	1,852	—	3,423	5,275	1,384	—	3,289	4,673
Retained loans reclassified to held-for-sale	—	1,043	504	1,547	—	2,006	538	2,544

The following table provides information about gains/(losses) on loan sales by portfolio segment.

Year ended December 31, (in millions)	2012	2011	2010
Net gains/(losses) on sales of loans (including lower of cost or fair value adjustments) <sup>(a)</sup>			
Consumer, excluding credit card	\$122	\$131	\$265
Credit card	(9)	(24)	(16)
Wholesale	180	121	215
Total net gains/(losses) on sales of loans (including lower of cost or fair value adjustments) <sup>(a)</sup>	\$293	\$228	\$464

(a) Excludes sales related to loans accounted for at fair value.

Consumer, excluding credit card, loan portfolio

Consumer loans, excluding credit card loans, consist primarily of residential mortgages, home equity loans and lines of credit, auto loans, business banking loans, and student and other loans, with a primary focus on serving the prime consumer credit market. The portfolio also includes home equity loans secured by junior liens and mortgage loans with interest-only payment options to predominantly prime borrowers, as well as certain payment-option loans originated by Washington Mutual that may result in negative amortization.

The table below provides information about retained consumer loans, excluding credit card, by class.

December 31, (in millions)	2012	2011
Residential real estate – excluding PCI		
Home equity:		
Senior lien	\$19,385	\$21,765
Junior lien	48,000	56,035
Mortgages:		
Prime, including option ARMs	76,256	76,196
Subprime	8,255	9,664
Other consumer loans		
Auto	49,913	47,426
Business banking	18,883	17,652
Student and other	12,191	14,143
Residential real estate – PCI		
Home equity	20,971	22,697
Prime mortgage	13,674	15,180
Subprime mortgage	4,626	4,976
Option ARMs	20,466	22,693
Total retained loans	\$292,620	\$308,427

Delinquency rates are a primary credit quality indicator for consumer loans. Loans that are more than 30 days past due provide an early warning of borrowers who may be experiencing financial difficulties and/or who may be unable or unwilling to repay the loan. As the loan continues to age, it becomes more clear that the borrower is likely either unable or unwilling to pay. In the case of residential real estate loans, late-stage delinquencies (greater than 150 days past due) are a strong indicator of loans that will ultimately result in a foreclosure or similar liquidation transaction. In addition to delinquency rates, other credit quality indicators for consumer loans vary based on the class of loan, as follows:

- For residential real estate loans, including both non-PCI and PCI portfolios, the current estimated LTV ratio, or the combined LTV ratio in the case of junior lien loans, is an indicator of the potential loss severity in the event of default. Additionally, LTV or combined LTV can provide

insight into a borrower's continued willingness to pay, as the delinquency rate of high-LTV loans tends to be greater than that for loans where the borrower has equity in the collateral. The geographic distribution of the loan collateral also provides insight as to the credit quality of the portfolio, as factors such as the regional economy, home price changes and specific events such as natural disasters, will affect credit quality. The borrower's current or "refreshed" FICO score is a secondary credit-quality indicator for certain loans, as FICO scores are an indication of the borrower's credit payment history. Thus, a loan to a borrower with a low FICO score (660 or below) is considered to be of higher risk than a loan to a borrower with a high FICO score. Further, a loan to a borrower with a high LTV ratio and a low FICO score is at greater risk of default than a loan to a borrower that has both a high LTV ratio and a high FICO score.

For scored auto, scored business banking and student loans, geographic distribution is an indicator of the credit performance of the portfolio. Similar to residential real estate loans, geographic distribution provides insights into the portfolio performance based on regional economic activity and events.

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Risk-rated business banking and auto loans are similar to wholesale loans in that the primary credit quality indicators are the risk rating that is assigned to the loan and whether the loans are considered to be criticized and/or nonaccrual. Risk ratings are reviewed on a regular and ongoing basis by Credit and Risk Management and are adjusted as necessary for updated information about borrowers' ability to fulfill their obligations. For further information about risk-rated wholesale loan credit quality indicators, see page 271 of this Note.

Residential real estate – excluding PCI loans

The following table provides information by class for residential real estate – excluding retained PCI loans in the consumer, excluding credit card, portfolio segment.

The following factors should be considered in analyzing certain credit statistics applicable to the Firm's residential real estate – excluding PCI loans portfolio: (i) junior lien home equity loans may be fully charged off when the loan becomes 180 days past due, and the value of the collateral does not support the repayment of the loan, resulting in relatively high charge-off rates for this product class; and (ii) the lengthening of loss-mitigation timelines may result in higher delinquency rates for loans carried at the net realizable value of the collateral that remain on the Firm's Consolidated Balance Sheets.

## Notes to consolidated financial statements

## Residential real estate – excluding PCI loans

December 31, (in millions, except ratios)	Home equity		Junior lien		
	Senior lien				
	2012	2011	2012	2011	
Loan delinquency <sup>(a)</sup>					
Current	\$18,688	\$20,992	\$46,805	\$54,533	
30–149 days past due	330	405	960	1,272	
150 or more days past due	367	368	235	230	
Total retained loans	\$19,385	\$21,765	\$48,000	\$56,035	
% of 30+ days past due to total retained loans	3.60	% 3.55	% 2.49	% 2.68	%
90 or more days past due and still accruing	\$—	\$—	\$—	\$—	
90 or more days past due and government guaranteed <sup>(b)</sup>	—	—	—	—	
Nonaccrual loans <sup>(c)</sup>	931	495	2,277	<sup>(h)</sup> 792	
Current estimated LTV ratios <sup>(d)(e)(f)</sup>					
Greater than 125% and refreshed FICO scores:					
Equal to or greater than 660	\$197	\$341	\$4,561	\$6,463	
Less than 660	93	160	1,338	2,037	
101% to 125% and refreshed FICO scores:					
Equal to or greater than 660	491	663	7,089	8,775	
Less than 660	191	241	1,971	2,510	
80% to 100% and refreshed FICO scores:					
Equal to or greater than 660	1,502	1,850	9,604	11,433	
Less than 660	485	601	2,279	2,616	
Less than 80% and refreshed FICO scores:					
Equal to or greater than 660	13,988	15,350	18,252	19,326	
Less than 660	2,438	2,559	2,906	2,875	
U.S. government-guaranteed	—	—	—	—	
Total retained loans	\$19,385	\$21,765	\$48,000	\$56,035	
Geographic region					
California	\$2,786	\$3,066	\$10,969	\$12,851	
New York	2,847	3,023	9,753	10,979	
Illinois	1,358	1,495	3,265	3,785	
Florida	892	992	2,572	3,006	
Texas	2,508	3,027	1,503	1,859	
New Jersey	652	687	2,838	3,238	
Arizona	1,183	1,339	2,151	2,552	
Washington	651	714	1,629	1,895	
Ohio	1,514	1,747	1,091	1,328	
Michigan	910	1,044	1,169	1,400	
All other <sup>(g)</sup>	4,084	4,631	11,060	13,142	
Total retained loans	\$19,385	\$21,765	\$48,000	\$56,035	

Individual delinquency classifications included mortgage loans insured by U.S. government agencies as follows:

(a) current includes \$3.8 billion and \$3.0 billion; 30–149 days past due includes \$2.3 billion and \$2.3 billion; and 150 or more days past due includes \$9.5 billion and \$10.3 billion at December 31, 2012 and 2011, respectively.

(b) These balances, which are 90 days or more past due but insured by U.S. government agencies, are excluded from nonaccrual loans. In predominately all cases, 100% of the principal balance of the loans is insured and interest is guaranteed at a specified reimbursement rate subject to meeting agreed-upon servicing guidelines. These amounts are excluded from nonaccrual loans because reimbursement of insured and guaranteed amounts is proceeding

normally. At December 31, 2012 and 2011, these balances included \$6.8 billion and \$7.0 billion, respectively, of loans that are no longer accruing interest because interest has been curtailed by the U.S. government agencies although, in predominantly all cases, 100% of the principal is still insured. For the remaining balance, interest is being accrued at the guaranteed reimbursement rate.

At December 31, 2012, included \$1.7 billion of loans recorded in accordance with regulatory guidance requiring loans discharged under Chapter 7 bankruptcy and not reaffirmed by the borrower to be reported as nonaccrual loans, regardless of their delinquency status. This \$1.7 billion consisted of \$450 million, \$440 million, \$500

(c) million, and \$357 million for home equity - senior lien, home equity - junior lien, prime mortgage, including option ARMs, and subprime mortgages, respectively. Certain of these loans have previously been reported as performing TDRs (e.g., loans that were previously modified under one of the Firm's loss mitigation programs and that have made at least six payments under the modified payment terms).

Represents the aggregate unpaid principal balance of loans divided by the estimated current property value. Current property values are estimated, at a minimum, quarterly, based on home valuation models using nationally

(d) recognized home price index valuation estimates incorporating actual data to the extent available and forecasted data where actual data is not available. These property values do not represent actual appraised loan level collateral values; as such, the resulting ratios are necessarily imprecise and should be viewed as estimates.

(e) Junior lien represents combined LTV, which considers all available lien positions related to the property. All other products are presented without consideration of subordinate liens on the property.

(f) Refreshed FICO scores represent each borrower's most recent credit score, which is obtained by the Firm on at least a quarterly basis.

(g) At both December 31, 2012 and 2011, included mortgage loans insured by U.S. government agencies of \$15.6 billion.

(h) Includes \$1.2 billion of performing junior liens at December 31, 2012, that are subordinate to senior liens that are 90 days or more past due; such junior liens are now being reported as nonaccrual loans based upon regulatory guidance issued in the first quarter of 2012. Of the total, \$1.1 billion were current at December 31, 2012. Prior periods have not been restated.

(i) At December 31, 2012 and 2011, excluded mortgage loans insured by U.S. government agencies of \$11.8 billion and \$12.6 billion, respectively. These amounts were excluded as reimbursement of insured amounts is proceeding normally.

(table continued from previous page)

## Mortgages

Prime, including option ARMs		Subprime		Total residential real estate – excluding PCI			
2012	2011	2012	2011	2012	2011		
\$61,439	\$59,855	\$6,673	\$7,585	\$133,605	\$142,965		
3,237	3,475	727	820	5,254	5,972		
11,580	12,866	855	1,259	13,037	14,723		
\$76,256	\$76,196	\$8,255	\$9,664	\$151,896	\$163,660		
3.97	% <sup>(i)</sup> 4.96	% <sup>(i)</sup> 19.16	% 21.51	% 4.28	% <sup>(i)</sup> 4.97	% <sup>(i)</sup>	
\$—	\$—	\$—	\$—	\$—	\$—		
10,625	11,516	—	—	10,625	11,516		
3,445	3,462	1,807	1,781	8,460	6,530		
\$2,573	\$3,168	\$236	\$367	\$7,567	\$10,339		
991	1,416	653	1,061	3,075	4,674		
3,697	4,626	457	506	11,734	14,570		
1,376	1,636	985	1,284	4,523	5,671		
7,070	9,343	726	817	18,902	23,443		
2,117	2,349	1,346	1,556	6,227	7,122		
38,281	33,849	1,793	1,906	72,314	70,431		
4,549	4,225	2,059	2,167	11,952	11,826		
15,602	15,584	—	—	15,602	15,584		
\$76,256	\$76,196	\$8,255	\$9,664	\$151,896	\$163,660		
\$17,539	\$18,029	\$1,240	\$1,463	\$32,534	\$35,409		
11,190	10,200	1,081	1,217	24,871	25,419		
3,999	3,922	323	391	8,945	9,593		
4,372	4,565	1,031	1,206	8,867	9,769		
2,927	2,851	257	300	7,195	8,037		
2,131	2,042	399	461	6,020	6,428		
1,162	1,194	165	199	4,661	5,284		
1,741	1,878	177	209	4,198	4,696		
405	441	191	234	3,201	3,750		
866	909	203	246	3,148	3,599		
29,924	30,165	3,188	3,738	48,256	51,676		
\$76,256	\$76,196	\$8,255	\$9,664	\$151,896	\$163,660		

## Notes to consolidated financial statements

The following tables represent the Firm's delinquency statistics for junior lien home equity loans as of December 31, 2012 and 2011.

December 31, 2012 (in millions, except ratios)	Delinquencies			Total loans	Total 30+ day delinquency rate	
	30–89 days past due	90–149 days past due	150+ days past due			
HELOCs: <sup>(a)</sup>						
Within the revolving period <sup>(b)</sup>	\$514	\$196	\$185	\$40,794	2.19	%
Beyond the revolving period	48	19	27	2,127	4.42	
HELOANs	125	58	23	5,079	4.06	
Total	\$687	\$273	\$235	\$48,000	2.49	%
December 31, 2011 (in millions, except ratios)	Delinquencies			Total loans	Total 30+ day delinquency rate	
	30–89 days past due	90–149 days past due	150+ days past due			
HELOCs: <sup>(a)</sup>						
Within the revolving period <sup>(b)</sup>	\$606	\$314	\$173	\$47,760	2.29	%
Beyond the revolving period	45	19	15	1,636	4.83	
HELOANs	188	100	42	6,639	4.97	
Total	\$839	\$433	\$230	\$56,035	2.68	%

(a) These HELOCs are predominantly revolving loans for a 10-year period, after which time the HELOC converts to a loan with a 20-year amortization period, but also include HELOCs originated by Washington Mutual that require interest-only payments beyond the revolving period.

(b) The Firm manages the risk of HELOCs during their revolving period by closing or reducing the undrawn line to the extent permitted by law when borrowers are experiencing financial difficulty or when the collateral does not support the loan amount.

Home equity lines of credit ("HELOCs") within the required amortization period and home equity loans ("HELOANs") have higher delinquency rates than do HELOCs within the revolving period. That is primarily because the fully-amortizing payment required for those products is higher than the minimum payment options available for HELOCs within the revolving period. The higher delinquency rates associated with amortizing HELOCs and HELOANs are factored into the loss estimates produced by the Firm's delinquency roll-rate methodology, which estimates defaults based on the current delinquency status of a portfolio.



## Impaired loans

At December 31, 2012, the Firm reported, in accordance with regulatory guidance, \$1.6 billion of residential real estate loans that have been discharged under Chapter 7 bankruptcy and not reaffirmed by the borrower (“Chapter 7 loans”) as collateral-dependent nonaccrual TDRs, regardless of their delinquency status. Pursuant to that guidance, these Chapter 7 loans were charged off to the net realizable value of the collateral, resulting in \$747 million

of charge-offs for the year ended December 31, 2012. Prior periods were not restated for this policy change. Prior to September 30, 2012, the Firm’s policy was to charge down to net realizable value, and also to place on nonaccrual status, loans to borrowers who had filed for bankruptcy when such loans became 60 days past due; however, the Firm did not previously report Chapter 7 loans as TDRs unless otherwise modified under one of the Firm’s loss mitigation programs.

The table below sets forth information about the Firm’s residential real estate impaired loans, excluding PCI loans. These loans are considered to be impaired as they have been modified in a TDR. All impaired loans are evaluated for an asset-specific allowance as described in Note 15 on pages 276–279 of this Annual Report.

December 31, (in millions)	Home equity				Mortgages				Total residential real estate – excluding PCI	
	Senior lien		Junior lien		Prime, including option ARMs		Subprime		2012	2011
	2012	2011	2012	2011	2012	2011	2012	2011	2012	2011
Impaired loans										
With an allowance	\$542	\$319	\$677	\$622	\$5,810	\$4,332	\$3,071	\$3,047	\$10,100	\$8,320
Without an allowance <sup>(a)</sup>	550	16	546	35	1,308	545	741	172	3,145	768
Total impaired loans <sup>(b)(c)</sup>	\$1,092	\$335	\$1,223	\$657	\$7,118	\$4,877	\$3,812	\$3,219	\$13,245	\$9,088
Allowance for loan losses related to impaired loans	\$159	\$80	\$188	\$141	\$70	\$4	\$174	\$366	\$591	\$591
Unpaid principal balance of impaired loans <sup>(d)(e)</sup>	1,408	433	2,352	994	9,095	6,190	5,700	4,827	18,555	12,444
Impaired loans on nonaccrual status <sup>(f)</sup>	607	77	599	159	1,888	922	1,308	832	4,402	1,990

<sup>(a)</sup> Represents collateral-dependent residential mortgage loans, including Chapter 7 loans, that are charged off to the fair value of the underlying collateral less cost to sell.

At December 31, 2012 and 2011, \$7.5 billion and \$4.3 billion, respectively, of loans permanently modified subsequent to repurchase from Government National Mortgage Association (“Ginnie Mae”) in accordance with the standards of the appropriate government agency (i.e., Federal Housing Administration (“FHA”), U.S. Department of

<sup>(b)</sup> Veterans Affairs (“VA”), Rural Housing Services (“RHS”)) are not included in the table above. When such loans perform subsequent to modification in accordance with Ginnie Mae guidelines, they are generally sold back into Ginnie Mae loan pools. Modified loans that do not re-perform become subject to foreclosure.

<sup>(c)</sup> At December 31, 2012, included \$1.6 billion of Chapter 7 loans, consisting of \$450 million of senior lien home equity loans, \$448 million of junior lien home equity loans, \$465 million of prime including option ARMs, and \$245 million of subprime mortgages. Certain of these loans were previously reported as nonaccrual loans (e.g., based upon the delinquency status of the loan).

<sup>(d)</sup>

Represents the contractual amount of principal owed at December 31, 2012 and 2011. The unpaid principal balance differs from the impaired loan balances due to various factors, including charge-offs, net deferred loan fees or costs, and unamortized discounts or premiums on purchased loans.

(e) At December 31, 2012, included \$2.7 billion of Chapter 7 loans, consisting of \$596 million of senior lien home equity loans, \$990 million of junior lien home equity loans, \$713 million of prime, including option ARMs, and \$379 million of subprime mortgages.

(f) As of December 31, 2012 and 2011, nonaccrual loans included \$2.9 billion and \$886 million, respectively, of TDRs for which the borrowers were less than 90 days past due. For additional information about loans modified in a TDR that are on nonaccrual status refer to the Loan accounting framework on pages 250–252 of this Note.

The following table presents average impaired loans and the related interest income reported by the Firm.

Year ended December 31, (in millions)	Average impaired loans			Interest income on impaired loans <sup>(a)</sup>			Interest income on impaired loans on a cash basis <sup>(a)</sup>		
	2012	2011	2010	2012	2011	2010	2012	2011	2010
Home equity									
Senior lien	\$610	\$287	\$207	\$27	\$10	\$15	\$12	\$1	\$1
Junior lien	848	521	266	42	18	10	16	2	1
Mortgages									
Prime, including option ARMs	5,989	3,859	1,530	238	147	70	28	14	14
Subprime	3,494	3,083	2,539	183	148	121	31	16	19
Total residential real estate – excluding PCI	\$10,941	\$7,750	\$4,542	\$490	\$323	\$216	\$87	\$33	\$35

(a) Generally, interest income on loans modified in TDRs is recognized on a cash basis until such time as the borrower has made a minimum of six payments under the new terms.

## Notes to consolidated financial statements

## Loan modifications

The global settlement, which became effective on April 5, 2012, required the Firm to, among other things, provide approximately \$500 million of refinancing relief to certain “underwater” borrowers under the Refi Program and approximately \$3.7 billion of additional relief to certain borrowers under the Consumer Relief Program, including reductions of principal on first and second liens.

The purpose of the Refi Program was to allow eligible borrowers who were current on their mortgage loans to refinance their existing loans; such borrowers were otherwise unable to do so because they had no equity or, in many cases, negative equity in their homes. Under the Refi Program, the interest rate on each refinanced loan could have been reduced either for the remaining life of the loan or for five years. The Firm reduced the interest rates on loans that it refinanced under the Refi Program for the remaining lives of those loans. The refinancings generally did not result in term extensions and accordingly, in that

regard, were more similar to loan modifications than to traditional refinancings.

The Firm continues to modify first and second lien loans under the Consumer Relief Program. These loan modifications are primarily expected to be executed under the terms of either the U.S. Treasury’s Making Home Affordable (“MHA”) programs (e.g., the Home Affordable Modification Program (“HAMP”), the Second Lien Modification Program (“2MP”)) or one of the Firm’s proprietary modification programs. For further information on the global settlement, see Global settlement on servicing and origination of mortgages in Note 2 on page 195 of this Annual Report.

Modifications of residential real estate loans, excluding PCI loans, are generally accounted for and reported as TDRs. There were no additional commitments to lend to borrowers whose residential real estate loans, excluding PCI loans, have been modified in TDRs.

## TDR activity rollforward

The following table reconciles the beginning and ending balances of residential real estate loans, excluding PCI loans, modified in TDRs for the periods presented.

Year ended December 31, (in millions)	Home equity		Mortgages				Total residential			
	Senior lien		Junior lien		Prime, including option ARMs		Subprime		real estate – excluding PCI	
	2012	2011	2012	2011	2012	2011	2012	2011	2012	2011
Beginning balance of TDRs	\$335	\$226	\$657	\$283	\$4,877	\$2,084	\$3,219	\$2,751	\$9,088	\$5,344
New TDRs <sup>(a)</sup>	835	138	711	518	2,918	3,268	1,043	883	5,507	4,807
Charge-offs post-modification <sup>(b)</sup>	(31)	(15)	(2)	(78)	(135)	(119)	(208)	(234)	(376)	(446)
Foreclosures and other liquidations (e.g., short sales)	(5)	—	(21)	(11)	(138)	(108)	(113)	(82)	(277)	(201)
Principal payments and other	(42)	(14)	(122)	(55)	(404)	(248)	(129)	(99)	(697)	(416)
Ending balance of TDRs	\$1,092	\$335	\$1,223	\$657	\$7,118	\$4,877	\$3,812	\$3,219	\$13,245	\$9,088
Permanent modifications <sup>(a)</sup>	\$1,058	\$285	\$1,218	\$634	\$6,834	\$4,601	\$3,661	\$3,029	\$12,771	\$8,549
Trial modifications	\$34	\$50	\$5	\$23	\$284	\$276	\$151	\$190	\$474	\$539

For the year ended December 31, 2012, included \$1.6 billion of Chapter 7 loans consisting of \$450 million of senior lien home equity loans, \$448 million of junior lien home equity loans, \$465 million of prime, including option ARMs, and \$245 million of subprime mortgages. Certain of these loans were previously reported as nonaccrual loans (e.g., based upon the delinquency status of the loan).

(b)Includes charge-offs on unsuccessful trial modifications.



## Nature and extent of modifications

MHA, as well as the Firm's proprietary modification programs, generally provide various concessions to financially troubled borrowers including, but not limited to, interest rate reductions, term or payment extensions and

deferral of principal and/or interest payments that would otherwise have been required under the terms of the original agreement.

The following table provides information about how residential real estate loans, excluding PCI loans, were modified under the Firm's loss mitigation programs during the periods presented. This table excludes Chapter 7 loans where the sole concession granted is the discharge of debt. At December 31, 2012, there were approximately 37,300 of such Chapter 7 loans, consisting of approximately 9,000 senior lien home equity loans, 20,700 junior lien home equity loans, 3,800 prime mortgage, including option ARMs, and 3,800 subprime mortgages.

Year ended December 31,	Home equity				Mortgages				Total residential real estate - excluding PCI	
	Senior lien		Junior lien		Prime, including option ARMs		Subprime		2012	2011
	2012	2011	2012	2011	2012	2011	2012	2011	2012	2011
Number of loans approved for a trial modification, but not permanently modified	410	654	528	778	1,101	898	1,168	1,730	3,207	4,060
Number of loans permanently modified	4,385	1,006	7,430	9,142	9,043	9,579	9,964	4,972	30,822	24,699
Concession granted: <sup>(a)</sup>										
Interest rate reduction	81	% 76	% 89	% 95	% 75	% 54	% 70	% 79	% 77	% 75
Term or payment extension	49	86	76	81	61	71	45	74	57	76
Principal and/or interest deferred	8	12	19	22	21	18	12	19	16	19
Principal forgiveness	12	8	22	20	30	3	43	14	30	12
Other <sup>(b)</sup>	3	27	5	7	31	68	8	26	13	35

<sup>(a)</sup> As a percentage of the number of loans modified. The sum of the percentages exceeds 100% because predominantly all of the modifications include more than one type of concession.

<sup>(b)</sup> Represents variable interest rate to fixed interest rate modifications.

## Notes to consolidated financial statements

## Financial effects of modifications and redefaults

The following table provides information about the financial effects of the various concessions granted in modifications of residential real estate loans, excluding PCI, under the Firm's loss mitigation programs and about redefaults of certain loans modified in TDRs for the periods presented. This table excludes Chapter 7 loans where the sole concession granted is the discharge of debt.

Year ended December 31, (in millions, except weighted-average data and number of loans)	Home equity				Mortgages Prime, including option ARMs				Total residential real estate – excluding PCI	
	Senior lien		Junior lien		Subprime					
	2012	2011	2012	2011	2012	2011	2012	2011	2012	2011
Weighted-average interest rate of loans with interest rate reductions – before TDR	7.14	%7.25	% 5.40	%5.44	% 6.12	%5.99	% 7.78	%8.27	% 6.56	%6.47
Weighted-average interest rate of loans with interest rate reductions – after TDR	4.56	3.54	1.89	1.48	3.57	3.32	4.09	3.50	3.62	3.09
Weighted-average remaining contractual term (in years) of loans with term or payment extensions – before TDR	19	18	20	21	25	25	23	23	23	24
Weighted-average remaining contractual term (in years) of loans with term or payment extensions – after TDR	28	30	32	34	36	35	32	34	34	35
Charge-offs recognized upon permanent modification	\$8	\$1	\$65	\$117	\$35	\$61	\$29	\$19	\$137	\$198
Principal deferred	5	4	26	36	164	176	50	68	245	284
Principal forgiven	23	1	58	62	318	24	371	55	770	142
Number of loans that redefaulted within one year of permanent modification <sup>(a)</sup>	374	201	1,436	1,170	920	1,041	1,426	1,742	4,156	4,154
Balance of loans that redefaulted within one year of permanent modification <sup>(a)</sup>	\$30	\$17	\$46	\$47	\$255	\$319	\$156	\$245	\$487	\$628

(a) Represents loans permanently modified in TDRs that experienced a payment default in the period presented, and for which the payment default occurred within one year of the modification. The dollar amounts presented represent the balance of such loans at the end of the reporting period in which such loans defaulted. For residential real estate loans modified in TDRs, payment default is deemed to occur when the loan becomes two contractual payments past due. In the event that a modified loan redefaults, it is probable that the loan will ultimately be liquidated through foreclosure or another similar type of liquidation transaction. Redefaults of loans modified within the last 12 months may not be representative of ultimate redefault levels.

Approximately 85% of the trial modifications approved on or after July 1, 2010 (the approximate date on which substantial revisions were made to the HAMP program), that are seasoned more than six months have been successfully converted to permanent modifications.

The primary performance indicator for TDRs is the rate at which permanently modified loans redefault. At December 31, 2012, the cumulative redefault rates of residential real estate loans that have been modified under the Firm's loss mitigation programs, excluding PCI loans, based upon permanent modifications that were completed after October 1, 2009, and that are seasoned more than six months, are 25% for senior lien home equity, 20% for junior lien

home equity, 14% for prime mortgages including option ARMs, and 24% for subprime mortgages.

Default rates of Chapter 7 loans vary significantly based on the delinquency status of the loan and overall economic conditions at the time of discharge. Default rates for Chapter 7 residential real estate loans that were less than 60 days past due at the time of discharge have ranged between approximately 10% and 40% in recent years based on the economic conditions at the time of discharge. At December 31, 2012, Chapter 7 residential real estate loans included approximately 19% of senior lien home equity, 12% of junior lien home equity, 45% of prime mortgages, including option ARMs, and 32% of subprime mortgages that were 30 days or more past due.

At December 31, 2012, the weighted-average estimated remaining lives of residential real estate loans, excluding PCI loans, permanently modified in TDRs were 6 years for senior lien home equity, 7 years for junior lien home equity, 10 years for prime mortgage, including option ARMs and 8 years for subprime mortgage. The estimated remaining lives of these loans reflect estimated prepayments, both voluntary and involuntary (i.e., foreclosures and other forced liquidations).

## Other consumer loans

The table below provides information for other consumer retained loan classes, including auto, business banking and student loans.

December 31, (in millions, except ratios)	Auto		Business banking		Student and other		Total other consumer		
	2012	2011	2012	2011	2012	2011	2012	2011	
Loan delinquency <sup>(a)</sup>									
Current	\$49,290	\$46,891	\$18,482	\$17,173	\$11,038	\$12,905	\$78,810	\$76,969	
30–119 days past due	616	528	263	326	709	777	1,588	1,631	
120 or more days past due	7	7	138	153	444	461	589	621	
Total retained loans	\$49,913	\$47,426	\$18,883	\$17,652	\$12,191	\$14,143	\$80,987	\$79,221	
% of 30+ days past due to total retained loans	1.25	% 1.13	% 2.12	% 2.71	% 2.12	% <sup>(e)</sup> 1.76	% <sup>(e)</sup> 1.58	% <sup>(e)</sup> 1.59	% <sup>(e)</sup>
90 or more days past due and still accruing <sup>(b)</sup>	\$—	\$—	\$—	\$—	\$525	\$551	\$525	\$551	
Nonaccrual loans	163	<sup>(d)</sup> 118	481	694	70	69	714	881	
Geographic region									
California	\$4,962	\$4,413	\$1,983	\$1,342	\$1,108	\$1,261	\$8,053	\$7,016	
New York	3,742	3,616	2,981	2,792	1,202	1,401	7,925	7,809	
Illinois	2,738	2,496	1,404	1,364	556	851	4,698	4,711	
Florida	1,922	1,881	527	313	748	658	3,197	2,852	
Texas	4,739	4,467	2,749	2,680	891	1,053	8,379	8,200	
New Jersey	1,921	1,829	379	376	409	460	2,709	2,665	
Arizona	1,719	1,495	1,139	1,165	265	316	3,123	2,976	
Washington	824	735	202	160	287	249	1,313	1,144	
Ohio	2,462	2,633	1,443	1,541	770	880	4,675	5,054	
Michigan	2,091	2,282	1,368	1,389	548	637	4,007	4,308	
All other	22,793	21,579	4,708	4,530	5,407	6,377	32,908	32,486	
Total retained loans	\$49,913	\$47,426	\$18,883	\$17,652	\$12,191	\$14,143	\$80,987	\$79,221	
Loans by risk ratings <sup>(c)</sup>									
Noncriticized	\$8,882	\$6,775	\$13,336	\$11,749	NA	NA	\$22,218	\$18,524	
Criticized performing	130	166	713	817	NA	NA	843	983	
Criticized nonaccrual	4	3	386	524	NA	NA	390	527	

(a) Individual delinquency classifications included loans insured by U.S. government agencies under the Federal Family Education Loan Program (“FFELP”) as follows: current includes \$5.4 billion and \$7.0 billion; 30-119 days



past due includes \$466 million and \$542 million; and 120 or more days past due includes \$428 million and \$447 million at December 31, 2012 and 2011, respectively.

- (b) These amounts represent student loans, which are insured by U.S. government agencies under the FFELP. These amounts were accruing as reimbursement of insured amounts is proceeding normally.
- (c) For risk-rated business banking and auto loans, the primary credit quality indicator is the risk rating of the loan, including whether the loans are considered to be criticized and/or nonaccrual.
- (d) At December 31, 2012, included \$51 million of Chapter 7 auto loans.  
December 31, 2012 and 2011, excluded loans 30 days or more past due and still accruing, which are insured by
- (e) U.S. government agencies under the FFELP, of \$894 million and \$989 million, respectively. These amounts were excluded as reimbursement of insured amounts is proceeding normally.

## Notes to consolidated financial statements

## Other consumer impaired loans and loan modifications

The table below sets forth information about the Firm's other consumer impaired loans, including risk-rated business banking and auto loans that have been placed on nonaccrual status, and loans that have been modified in TDRs.

December 31, (in millions)	Auto		Business banking		Total other consumer <sup>(e)</sup>	
	2012	2011	2012	2011	2012	2011
Impaired loans						
With an allowance	\$78	\$88	\$543	\$713	\$621	\$801
Without an allowance <sup>(a)</sup>	72	3	—	—	72	3
Total impaired loans <sup>(b)</sup>	\$150	\$91	\$543	\$713	\$693	\$804
Allowance for loan losses related to impaired loans	\$12	\$12	\$126	\$225	\$138	\$237
Unpaid principal balance of impaired loans <sup>(c)(d)</sup>	259	126	624	822	883	948
Impaired loans on nonaccrual status <sup>(b)</sup>	109	41	394	551	503	592

When discounted cash flows, collateral value or market price equals or exceeds the recorded investment in the (a) loan, the loan does not require an allowance. This typically occurs when the impaired loans have been partially charged off and/or there have been interest payments received and applied to the loan balance.

(b) At December 31, 2012, included \$72 million of Chapter 7 auto loans. Certain of these loans were previously reported as nonaccrual loans (e.g., based upon the delinquency status of the loan).

(c) At December 31, 2012, included \$146 million of Chapter 7 auto loans.

(d) Represents the contractual amount of principal owed at December 31, 2012 and 2011. The unpaid principal balance differs from the impaired loan balances due to various factors, including charge-offs; interest payments received and applied to the principal balance; net deferred loan fees or costs; and unamortized discounts or premiums on purchased loans.

(e) There were no impaired student and other loans at December 31, 2012 and 2011.

The following table presents average impaired loans for the periods presented.

Year ended December 31, (in millions)	Average impaired loans <sup>(b)</sup>		
	2012	2011	2010
Auto	\$111	\$92	\$120
Business banking	622	760	682
Total other consumer <sup>(a)</sup>	\$733	\$852	\$802

(a) There were no impaired student and other loans for the years ended 2012, 2011 and 2010.

(b) The related interest income on impaired loans, including those on a cash basis, was not material for the years ended 2012, 2011 and 2010.

## Loan modifications

The following table provides information about the Firm's other consumer loans modified in TDRs. All of these TDRs are reported as impaired loans in the tables above.

December 31, (in millions)	Auto		Business banking		Total other consumer <sup>(d)</sup>	
	2012	2011	2012	2011	2012	2011
Loans modified in troubled debt restructurings <sup>(a)(b)(c)</sup>	\$150	\$88	\$352	\$415	\$502	\$503
TDRs on nonaccrual status	109	38	203	253	312	291

(a) These modifications generally provided interest rate concessions to the borrower or deferral of principal repayments.

(b) Additional commitments to lend to borrowers whose loans have been modified in TDRs as of December 31, 2012 and 2011, were immaterial.

(c) At December 31, 2012, included \$72 million of Chapter 7 auto loans. Certain of these loans were previously reported as nonaccrual loans (e.g., based upon the delinquency status of the loan).

(d) There were no student and other loans modified in TDRs at December 31, 2012 and 2011.

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## TDR activity rollforward

The following table reconciles the beginning and ending balances of other consumer loans modified in TDRs for the periods presented.

Year ended December 31, (in millions)	Auto		Business banking		Total other consumer	
	2012	2011	2012	2011	2012	2011
Beginning balance of TDRs	\$88	\$91	\$415	\$395	\$503	\$486
New TDRs <sup>(a)</sup>	145	54	104	195	249	249
Charge-offs post-modification	(9	)(5	)(9	)(11	)(18	)(16
Foreclosures and other liquidations	—	—	(1	)(3	)(1	)(3
Principal payments and other	(74	)(52	)(157	)(161	)(231	)(213
Ending balance of TDRs	\$150	\$88	\$352	\$415	\$502	\$503

(a) At December 31, 2012, included \$72 million of Chapter 7 auto loans. Certain of these loans were previously reported as nonaccrual loans (e.g., based upon the delinquency status of the loan).

## Financial effects of modifications and redefaults

For auto loans, TDRs typically occur in connection with the bankruptcy of the borrower. In these cases, the loan is modified with a revised repayment plan that typically incorporates interest rate reductions and, to a lesser extent, principal forgiveness. Beginning September 30, 2012, Chapter 7 auto loans are also considered TDRs.

For business banking loans, concessions are dependent on individual borrower circumstances and can be of a short-term nature for borrowers who need temporary relief or longer term for borrowers experiencing more fundamental financial difficulties. Concessions are predominantly term or payment extensions, but also may include interest rate reductions.

The balance of business banking loans modified in TDRs that experienced a payment default, and for which the payment default occurred within one year of the modification, was \$42 million and \$80 million, during the years ended December 31, 2012 and 2011, respectively. The balance of auto loans modified in TDRs that experienced a payment default, and for which the payment default occurred within one year of the modification, was \$46 million during the year ended December 31, 2012. The corresponding amount for the year ended December 31, 2011 was insignificant. A payment default is deemed to occur as follows: (1) for scored auto and business banking loans, when the loan is two payments past due; and (2) for risk-rated business banking loans and auto loans, when the borrower has not made a loan payment by its scheduled due date after giving effect to the contractual grace period, if any.

The following table provides information about the financial effects of the various concessions granted in modifications of other consumer loans for the periods presented.

Year ended December 31,	Auto		Business banking		
	2012	2011	2012	2011	
Weighted-average interest rate of loans with interest rate reductions – before TDR	12.64	%12.45	%7.33	%7.55	%
Weighted-average interest rate of loans with interest rate reductions – after TDR	4.83	5.70	5.49	5.52	
Weighted-average remaining contractual term (in years) of loans with term or payment extensions – before TDR	NM	NM	1.4	1.4	
Weighted-average remaining contractual term (in years) of loans with term or payment extensions – after TDR	NM	NM	2.4	2.6	

## Notes to consolidated financial statements

## Purchased credit-impaired loans

PCI loans are initially recorded at fair value at acquisition; PCI loans acquired in the same fiscal quarter may be aggregated into one or more pools, provided that the loans have common risk characteristics. A pool is then accounted for as a single asset with a single composite interest rate and an aggregate expectation of cash flows. With respect to the Washington Mutual transaction, all of the consumer loans were aggregated into pools of loans with common risk characteristics.

On a quarterly basis, the Firm estimates the total cash flows (both principal and interest) expected to be collected over the remaining life of each pool. These estimates incorporate assumptions regarding default rates, loss severities, the amounts and timing of prepayments and other factors that reflect then-current market conditions. Probable decreases in expected cash flows (i.e., increased credit losses) trigger the recognition of impairment, which is then measured as the present value of the expected principal loss plus any related foregone interest cash flows, discounted at the pool's effective interest rate. Impairments are recognized through the provision for credit losses and an increase in the allowance for loan losses. Probable and significant increases in expected cash flows (e.g., decreased credit losses, the net benefit of modifications) would first reverse any previously recorded allowance for loan losses with any remaining increases recognized prospectively as a yield adjustment over the remaining estimated lives of the underlying loans. The impacts of (i) prepayments, (ii) changes in variable interest rates, and (iii) any other changes in the timing of expected cash flows are recognized prospectively as adjustments to interest income. Disposals of loans — which may include sales of loans, receipt of payments in full by the borrower, or foreclosure — result in removal of the loans from the PCI portfolio.

The Firm continues to modify certain PCI loans. The impact of these modifications is incorporated into the Firm's quarterly assessment of whether a probable and significant change in expected cash flows has occurred, and the loans continue to be accounted for and reported as PCI loans. In evaluating the effect of modifications on expected cash flows, the Firm incorporates the effect of any foregone interest and also considers the potential for redefault. The Firm develops product-specific probability of default estimates, which are used to compute expected credit losses. In developing these probabilities of default, the Firm considers the relationship between the credit quality characteristics of the underlying loans and certain assumptions about home prices and unemployment based upon industry-wide data. The Firm also considers its own historical loss experience to date based on actual redefaulted PCI modified loans.

The excess of cash flows expected to be collected over the carrying value of the underlying loans is referred to as the accretable yield. This amount is not reported on the Firm's Consolidated Balance Sheets but is accreted into interest income at a level rate of return over the remaining estimated lives of the underlying pools of loans.

If the timing and/or amounts of expected cash flows on PCI loans were determined not to be reasonably estimable, no interest would be accreted and the loans would be reported as nonaccrual loans; however, since the timing and amounts of expected cash flows for the Firm's PCI consumer loans are reasonably estimable, interest is being accreted and the loans are being reported as performing loans.

Charge-offs are not recorded on PCI loans until actual losses exceed the estimated losses that were recorded as purchase accounting adjustments at acquisition date. Actual losses in excess of the purchase accounting adjustment are charged off against the PCI allowance for credit losses. To date, no charge-offs have been recorded for these consumer loans.

The PCI portfolio affects the Firm's results of operations primarily through: (i) contribution to net interest margin; (ii) expense related to defaults and servicing resulting from the liquidation of the loans; and (iii) any provision for loan losses. The PCI loans acquired in the Washington Mutual transaction were funded based on the interest rate characteristics of the loans. For example, variable-rate loans were funded with variable-rate liabilities and fixed-rate loans were funded with fixed-rate liabilities with a similar maturity profile. A net spread will be earned on the declining balance of the portfolio, which is estimated as of December 31, 2012, to have a remaining weighted-average life of 8 years.



Residential real estate – PCI loans

The table below sets forth information about the Firm’s consumer, excluding credit card, PCI loans.

December 31, (in millions, except ratios)	Home equity		Prime mortgage		Subprime mortgage		Option ARMs		Total PCI	
	2012	2011	2012	2011	2012	2011	2012	2011	2012	2011
Carrying value <sup>(a)</sup>	\$20,971	\$22,697	\$13,674	\$15,180	\$4,626	\$4,976	\$20,466	\$22,693	\$59,737	\$65,546
Related allowance for loan losses <sup>(b)</sup>	1,908	1,908	1,929	1,929	380	380	1,494	1,494	5,711	5,711
Loan delinquency (based on unpaid principal balance)										
Current	\$20,331	\$22,682	\$11,078	\$12,148	\$4,198	\$4,388	\$16,415	\$17,919	\$52,022	\$57,137
30–149 days past due	803	1,130	740	912	698	782	1,314	1,467	3,555	4,291
150 or more days past due	1,209	1,252	2,066	3,000	1,430	2,059	4,862	6,753	9,567	13,064
Total loans	\$22,343	\$25,064	\$13,884	\$16,060	\$6,326	\$7,229	\$22,591	\$26,139	\$65,144	\$74,492
% of 30+ days past due to total loans	9.01	%9.50	% 20.21	%24.36	% 33.64	%39.30	% 27.34	%31.45	% 20.14	%23.30
Current estimated LTV ratios (based on unpaid principal balance) <sup>(c)(d)</sup>										
Greater than 125% and refreshed FICO scores:										
Equal to or greater than 660	\$4,508	\$5,915	\$1,478	\$2,313	\$375	\$473	\$1,597	\$2,509	\$7,958	\$11,210
Less than 660	2,344	3,299	1,449	2,319	1,300	1,939	2,729	4,608	7,822	12,165
101% to 125% and refreshed FICO scores:										
Equal to or greater than	4,966	5,393	2,968	3,328	434	434	3,281	3,959	11,649	13,114

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660											
Less than 660	2,098	2,304	1,983	2,314	1,256	1,510	3,200	3,884	8,537	10,012	
80% to 100% and refreshed FICO scores:											
Equal to or greater than 660	3,531	3,482	1,872	1,629	416	372	3,794	3,740	9,613	9,223	
Less than 660	1,305	1,264	1,378	1,457	1,182	1,197	2,974	3,035	6,839	6,953	
Lower than 80% and refreshed FICO scores:											
Equal to or greater than 660	2,524	2,409	1,356	1,276	255	198	2,624	2,189	6,759	6,072	
Less than 660	1,067	998	1,400	1,424	1,108	1,106	2,392	2,215	5,967	5,743	
Total unpaid principal balance	\$22,343	\$25,064	\$13,884	\$16,060	\$6,326	\$7,229	\$22,591	\$26,139	\$65,144	\$74,492	
Geographic region (based on unpaid principal balance)											
California	\$13,493	\$15,091	\$7,877	\$9,121	\$1,444	\$1,661	\$11,889	\$13,565	\$34,703	\$39,438	
New York	1,067	1,179	927	1,018	649	709	1,404	1,548	4,047	4,454	
Illinois	502	558	433	511	338	411	587	702	1,860	2,182	
Florida	2,054	2,307	1,023	1,265	651	812	2,480	3,201	6,208	7,585	
Texas	385	455	148	168	368	405	118	140	1,019	1,168	
New Jersey	423	471	401	445	260	297	854	969	1,938	2,182	
Arizona	408	468	215	254	105	126	305	362	1,033	1,210	
Washington	1,215	1,368	328	388	142	160	563	649	2,248	2,565	
Ohio	27	32	71	79	100	114	89	111	287	336	
Michigan	70	81	211	239	163	187	235	268	679	775	
All other	2,699	3,054	2,250	2,572	2,106	2,347	4,067	4,624	11,122	12,597	
Total unpaid principal balance	\$22,343	\$25,064	\$13,884	\$16,060	\$6,326	\$7,229	\$22,591	\$26,139	\$65,144	\$74,492	

(a) Carrying value includes the effect of fair value adjustments that were applied to the consumer PCI portfolio at the date of acquisition.

(b) Management concluded as part of the Firm's regular assessment of the PCI loan pools that it was probable that higher expected credit losses would result in a decrease in expected cash flows. As a result, an allowance for loan losses for impairment of these pools has been recognized.

(c) Represents the aggregate unpaid principal balance of loans divided by the estimated current property value. Current property values are estimated, at a minimum, quarterly, based on home valuation models using nationally recognized home price index valuation estimates incorporating actual data to the extent available and forecasted data where actual data is not available. These property values do not represent actual appraised loan level collateral



values; as such, the resulting ratios are necessarily imprecise and should be viewed as estimates. Current estimated combined LTV for junior lien home equity loans considers all available lien positions related to the property.  
(d) Refreshed FICO scores, which the Firm obtains at least quarterly, represent each borrower's most recent credit score.

## Notes to consolidated financial statements

Approximately 21% of the PCI home equity portfolio are senior lien loans; the remaining balance are junior lien HELOANs or HELOCs. The following tables set forth delinquency statistics for PCI junior lien home equity loans based on unpaid principal balance as of December 31, 2012 and 2011.

December 31, 2012 (in millions, except ratios) HELOCs: <sup>(a)</sup>	Delinquencies			Total loans	Total 30+ day delinquency rate	
	30–89 days past due	90–149 days past due	150+ days past due			
Within the revolving period <sup>(b)</sup>	\$361	\$175	\$591	\$15,915	7.08	%
Beyond the revolving period <sup>(c)</sup>	30	13	20	666	9.46	
HELOANs	37	18	44	1,085	9.12	
Total	\$428	\$206	\$655	\$17,666	7.30	%
December 31, 2011 (in millions, except ratios) HELOCs: <sup>(a)</sup>	Delinquencies			Total loans	Total 30+ day delinquency rate	
	30–89 days past due	90–149 days past due	150+ days past due			
Within the revolving period <sup>(b)</sup>	\$500	\$296	\$543	\$18,246	7.34	%
Beyond the revolving period <sup>(c)</sup>	16	11	5	400	8.00	
HELOANs	53	29	44	1,327	9.50	
Total	\$569	\$336	\$592	\$19,973	7.50	%

(a) In general, these HELOCs are revolving loans for a 10-year period, after which time the HELOC converts to an interest-only loan with a balloon payment at the end of the loan's term.

(b) Substantially all undrawn HELOCs within the revolving period have been closed.

(c) Predominantly all of these loans have been modified into fixed-rate amortizing loans.

The table below sets forth the accretable yield activity for the Firm's PCI consumer loans for the years ended December 31, 2012, 2011 and 2010, and represents the Firm's estimate of gross interest income expected to be earned over the remaining life of the PCI loan portfolios. The table excludes the cost to fund the PCI portfolios, and therefore the accretable yield does not represent net interest income expected to be earned on these portfolios.

Year ended December 31, (in millions, except ratios)	Total PCI		
	2012	2011	2010
Beginning balance	\$19,072	\$19,097	\$25,544
Accretion into interest income	(2,491)	(2,767)	(3,232)
Changes in interest rates on variable-rate loans	(449)	(573)	(819)
Other changes in expected cash flows <sup>(a)</sup>	2,325	3,315	(2,396)
Balance at December 31	\$18,457	\$19,072	\$19,097
Accretable yield percentage	4.38	% 4.33	% 4.35

Other changes in expected cash flows may vary from period to period as the Firm continues to refine its cash flow model and periodically updates model assumptions. For the years ended December 31, 2012 and 2011, other changes in expected cash flows were principally driven by the impact of modifications, but also related to changes in prepayment assumptions. For the year ended December 31, 2010, other changes in expected cash flows were principally driven by changes in prepayment assumptions, as well as reclassification to the nonaccretable difference. Changes to prepayment assumptions change the expected remaining life of the portfolio, which drives changes in expected future interest cash collections. Such changes do not have a significant impact on the accretable yield percentage.

The factors that most significantly affect estimates of gross cash flows expected to be collected, and accordingly the accretable yield balance, include: (i) changes in the benchmark interest rate indices for variable-rate products such as option ARM and home equity loans; and (ii) changes in prepayment assumptions.

From the date of acquisition through 2011, the decrease in the accretable yield percentage has been primarily related to a decrease in interest rates on variable-rate loans and, to a lesser extent, extended loan liquidation periods. More recently, however, the Firm has observed loan liquidation periods start to shorten, thus increasing the accretable yield

percentage. Certain events, such as extended or shortened loan liquidation periods, affect the timing of

expected cash flows and the accretable yield percentage, but not the amount of cash expected to be received (i.e., the accretable yield balance). While extended loan liquidation periods reduce the accretable yield percentage (because the same accretable yield balance is recognized against a higher-than-expected loan balance over a longer-than-expected period of time), shortened loan liquidation periods would have the opposite effect.

## Credit card loan portfolio

The Credit card portfolio segment includes credit card loans originated and purchased by the Firm. Delinquency rates are the primary credit quality indicator for credit card loans as they provide an early warning that borrowers may be experiencing difficulties (30 days past due), as well as information on those borrowers that have been delinquent for a longer period of time (90 days past due). In addition to delinquency rates, the geographic distribution of the loans provides insight as to the credit quality of the portfolio based on the regional economy.

While the borrower's credit score is another general indicator of credit quality, because the borrower's credit score tends to be a lagging indicator, the Firm does not view credit scores as a primary indicator of credit quality. However, the distribution of such scores provides a general indicator of credit quality trends within the portfolio. Refreshed FICO score information for a statistically significant random sample of the credit card portfolio is indicated in the table below; FICO is considered to be the industry benchmark for credit scores.

The Firm generally originates new card accounts to prime consumer borrowers. However, certain cardholders' FICO scores may decrease over time, depending on the performance of the cardholder and changes in credit score technology.

The table below sets forth information about the Firm's credit card loans.

As of or for the year ended December 31, (in millions, except ratios)	2012	2011	
Net charge-offs	\$4,944	\$6,925	
% of net charge-offs to retained loans	3.95	%5.44	%
Loan delinquency			
Current and less than 30 days past due and still accruing	\$125,309	\$128,464	
30–89 days past due and still accruing	1,381	1,808	
90 or more days past due and still accruing	1,302	1,902	
Nonaccrual loans	1	1	
Total retained credit card loans	\$127,993	\$132,175	
Loan delinquency ratios			
% of 30+ days past due to total retained loans	2.10	%2.81	%
% of 90+ days past due to total retained loans	1.02	1.44	
Credit card loans by geographic region			
California	\$17,115	\$17,598	
New York	10,379	10,594	
Texas	10,209	10,239	
Illinois	7,399	7,548	
Florida	7,231	7,583	
New Jersey	5,503	5,604	
Ohio	4,956	5,202	
Pennsylvania	4,549	4,779	
Michigan	3,745	3,994	
Virginia	3,193	3,298	
All other	53,714	55,736	
Total retained credit card loans	\$127,993	\$132,175	
Percentage of portfolio based on carrying value with estimated refreshed FICO scores <sup>(a)</sup>			
Equal to or greater than 660	84.1	%81.4	%
Less than 660	15.9	18.6	

(a) Refreshed FICO scores are estimated based on a statistically significant random sample of credit card accounts in the credit card portfolio for the periods shown. The Firm obtains refreshed FICO scores at least quarterly.



## Notes to consolidated financial statements

## Credit card impaired loans and loan modifications

The table below sets forth information about the Firm's impaired credit card loans. All of these loans are considered to be impaired as they have been modified in TDRs.

December 31, (in millions)	2012	2011
Impaired credit card loans with an allowance <sup>(a)(b)</sup>		
Credit card loans with modified payment terms <sup>(c)</sup>	\$4,189	\$6,075
Modified credit card loans that have reverted to pre-modification payment terms <sup>(d)</sup>	573	1,139
Total impaired credit card loans	\$4,762	\$7,214
Allowance for loan losses related to impaired credit card loans	\$1,681	\$2,727

(a) The carrying value and the unpaid principal balance are the same for credit card impaired loans.

(b) There were no impaired loans without an allowance.

(c) Represents credit card loans outstanding to borrowers enrolled in a credit card modification program as of the date presented.

(d) Represents credit card loans that were modified in TDRs but that have subsequently reverted back to the loans' pre-modification payment terms. At December 31, 2012 and 2011, \$341 million and \$762 million, respectively, of loans have reverted back to the pre-modification payment terms of the loans due to noncompliance with the terms of the modified loans. The remaining \$232 million and \$377 million at December 31, 2012 and 2011, respectively, of these loans are to borrowers who have successfully completed a short-term modification program. The Firm continues to report these loans as TDRs since the borrowers' credit lines remain closed.

The following table presents average balances of impaired credit card loans and interest income recognized on those loans.

Year ended December 31, (in millions)	2012	2011	2010
Average impaired credit card loans	\$5,893	\$8,499	\$10,730
Interest income on impaired credit card loans	308	463	605

## Loan modifications

JPMorgan Chase may offer one of a number of loan modification programs to credit card borrowers who are experiencing financial difficulty. The Firm has short-term programs for borrowers who may be in need of temporary relief, and long-term programs for borrowers who are experiencing more fundamental financial difficulties. Most of the credit card loans have been modified under long-term programs. Modifications under long-term programs involve placing the customer on a fixed payment plan, generally for 60 months. Modifications under all short- and long-term programs typically include reducing the interest rate on the credit card. Certain borrowers enrolled in a short-term modification program may be given the option to re-enroll in a long-term program. Substantially all modifications are considered to be TDRs. If the cardholder does not comply with the modified payment terms, then the credit card loan agreement reverts back to its pre-modification payment terms. Assuming that the cardholder does not begin to perform in accordance with those payment terms, the loan continues to age and will ultimately be charged-off in accordance with the Firm's standard charge-off policy. In addition, if a borrower successfully completes a short-term

modification program, then the loan reverts back to its pre-modification payment terms. However, in most cases, the Firm does not reinstate the borrower's line of credit.

The following table provides information regarding the nature and extent of modifications of credit card loans for the periods presented.

Year ended December 31, (in millions)	New enrollments	
	2012	2011
Short-term programs	\$47	\$167
Long-term programs	1,607	2,523

Total new enrollments	\$1,654	\$2,690
Financial effects of modifications and redefaults		

The following table provides information about the financial effects of the concessions granted on credit card loans modified in TDRs and redefaults for the period presented.

Year ended December 31,

(in millions, except weighted-average data)	2012	2011	
Weighted-average interest rate of loans – before TDR	15.67	% 16.05	%
Weighted-average interest rate of loans – after TDR	5.19	5.28	
Loans that redefaulted within one year of modification <sup>(a)</sup>	\$309	\$687	

Represents loans modified in TDRs that experienced a payment default in the period presented, and for which the (a) payment default occurred within one year of the modification. The amounts presented represent the balance of such loans as of the end of the quarter in which they defaulted.

For credit card loans modified in TDRs, payment default is deemed to have occurred when the loans become two payments past due. A substantial portion of these loans is expected to be charged-off in accordance with the Firm's standard charge-off policy. Based on historical experience, the estimated weighted-average expected default rate for modified credit card loans was 38.23% at December 31, 2012, and 35.47% at December 31, 2011.

#### Wholesale loan portfolio

Wholesale loans include loans made to a variety of customers, ranging from large corporate and institutional clients to high-net-worth individuals.

The primary credit quality indicator for wholesale loans is the risk rating assigned each loan. Risk ratings are used to identify the credit quality of loans and differentiate risk within the portfolio. Risk ratings on loans consider the probability of default (“PD”) and the loss given default (“LGD”). PD is the likelihood that a loan will not be repaid at default. The LGD is the estimated loss on the loan that would be realized upon the default of the borrower and takes into consideration collateral and structural support for each credit facility.

Management considers several factors to determine an appropriate risk rating, including the obligor’s debt capacity and financial flexibility, the level of the obligor’s earnings, the amount and sources for repayment, the level and nature of contingencies, management strength, and the industry and geography in which the obligor operates. As of September 30, 2012, the Firm revised its definition of the criticized component of the wholesale portfolio to align with the banking regulators’ definition of criticized exposures, which consists of the special mention, substandard and doubtful categories. Prior periods have been reclassified to conform with the current presentation. Risk ratings generally represent ratings profiles similar to those defined by S&P and Moody’s. Investment grade ratings range from “AAA/Aaa” to “BBB-/Baa3.” Noninvestment grade ratings are classified as noncriticized (“BB+/Ba1 and B-/B3”) and criticized (“CCC+”/“Caa1 and below”), and the criticized portion is further subdivided into performing and nonaccrual loans, representing management’s assessment of the collectibility of principal and interest. Criticized loans have a higher probability of default than noncriticized loans.

Risk ratings are reviewed on a regular and ongoing basis by Credit Risk Management and are adjusted as necessary for updated information affecting the obligor’s ability to fulfill its obligations.

As noted above, the risk rating of a loan considers the industry in which the obligor conducts its operations. As part of the overall credit risk management framework, the Firm focuses on the management and diversification of its industry and client exposures, with particular attention paid to industries with actual or potential credit concern. See Note 5 on page 217 in this Annual Report for further detail on industry concentrations.



## Notes to consolidated financial statements

The table below provides information by class of receivable for the retained loans in the Wholesale portfolio segment.

As of or for the year ended December 31, (in millions, except ratios)	Commercial and industrial		Real estate		
	2012	2011	2012	2011	
Loans by risk ratings					
Investment grade	\$61,870	\$52,379	\$41,796	\$33,920	
Noninvestment grade:					
Noncriticized	44,651	37,870	14,567	14,394	
Criticized performing	2,636	3,077	3,857	5,484	
Criticized nonaccrual	708	889	520	886	
Total noninvestment grade	47,995	41,836	18,944	20,764	
Total retained loans	\$109,865	\$94,215	\$60,740	\$54,684	
% of total criticized to total retained loans	3.04	% 4.21	% 7.21	% 11.65	%
% of nonaccrual loans to total retained loans	0.64	0.94	0.86	1.62	
Loans by geographic distribution <sup>(a)</sup>					
Total non-U.S.	\$35,494	\$30,813	\$1,533	\$1,497	
Total U.S.	74,371	63,402	59,207	53,187	
Total retained loans	\$109,865	\$94,215	\$60,740	\$54,684	
Net charge-offs/(recoveries)	\$(212)	) \$124	\$54	\$256	
% of net charge-offs/(recoveries) to end-of-period retained loans	(0.19)	)% 0.13	% 0.09	% 0.47	%

Loan delinquency<sup>(b)</sup>

Current and less than 30 days past due and still accruing	\$109,019	\$93,060	\$59,829	\$53,387
30–89 days past due and still accruing	119	266	322	327
90 or more days past due and still accruing <sup>(c)</sup>	19	—	69	84
Criticized nonaccrual	708	889	520	886
Total retained loans	\$109,865	\$94,215	\$60,740	\$54,684

(a) The U.S. and non-U.S. distribution is determined based predominantly on the domicile of the borrower.

The credit quality of wholesale loans is assessed primarily through ongoing review and monitoring of an obligor's (b) ability to meet contractual obligations rather than relying on the past due status, which is generally a lagging indicator of credit quality. For a discussion of more significant risk factors, see page 271 of this Note.

(c) Represents loans that are considered well-collateralized and therefore still accruing interest.

(d) Other primarily includes loans to SPEs and loans to private banking clients. See Note 1 on pages 193–194 of this Annual Report for additional information on SPEs.

The following table presents additional information on the real estate class of loans within the Wholesale portfolio segment for the periods indicated. The real estate class primarily consists of secured commercial loans mainly to borrowers for multi-family and commercial lessor properties. Multifamily lending specifically finances apartment buildings. Commercial lessors receive financing specifically for real estate leased to retail, office and industrial tenants. Commercial construction and development loans represent financing for the construction of apartments, office and professional buildings and malls. Other real estate loans include lodging, real estate investment trusts ("REITs"), single-family, homebuilders and other real estate.

December 31, (in millions, except ratios)	Multifamily		Commercial lessors		
	2012	2011	2012	2011	
Real estate retained loans	\$38,030	\$32,524	\$14,668	\$14,444	
Criticized exposure	2,118	3,452	1,951	2,192	
% of criticized exposure to total real estate retained loans	5.57	% 10.61	% 13.30	% 15.18	%

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Criticized nonaccrual	\$249	\$412	\$207	\$284	
% of criticized nonaccrual to total real estate retained loans	0.65	% 1.27	% 1.41	% 1.97	%

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(table continued from previous page)

Financial institutions		Government agencies		Other <sup>(d)</sup>		Total retained loans		
2012	2011	2012	2011	2012	2011	2012	2011	
\$22,064	\$28,803	\$9,183	\$7,421	\$79,533	\$74,475	\$214,446	\$196,998	
13,760	8,849	356	377	9,914	7,450	83,248	68,940	
395	530	5	5	201	963	7,094	10,059	
8	37	—	16	198	570	1,434	2,398	
14,163	9,416	361	398	10,313	8,983	91,776	81,397	
\$36,227	\$38,219	\$9,544	\$7,819	\$89,846	\$83,458	\$306,222	\$278,395	
1.11	% 1.48	% 0.05	% 0.27	% 0.44	% 1.84	% 2.78	% 4.47	%
0.02	0.10	—	0.20	0.22	0.68	0.47	0.86	
\$26,326	\$29,996	\$1,582	\$583	\$39,421	\$32,275	\$104,356	\$95,164	
9,901	8,223	7,962	7,236	50,425	51,183	201,866	183,231	
\$36,227	\$38,219	\$9,544	\$7,819	\$89,846	\$83,458	\$306,222	\$278,395	
\$(36	) \$(137	) \$2	\$—	\$14	\$197	\$(178	) \$440	
(0.10	)% (0.36	)% 0.02	% —	% 0.02	% 0.24	% (0.06	)% 0.16	%
\$36,151	\$38,129	\$9,516	\$7,780	\$88,177	\$81,802	\$302,692	\$274,158	
62	51	28	23	1,427	1,072	1,958	1,739	
6	2	—	—	44	14	138	100	
8	37	—	16	198	570	1,434	2,398	
\$36,227	\$38,219	\$9,544	\$7,819	\$89,846	\$83,458	\$306,222	\$278,395	

(table continued from previous page)

Commercial construction and development		Other		Total real estate loans		
2012	2011	2012	2011	2012	2011	
\$2,989	\$3,148	\$5,053	\$4,568	\$60,740	\$54,684	
119	304	189	422	4,377	6,370	
3.98	% 9.66	% 3.74	% 9.24	% 7.21	% 11.65	%
\$21	\$69	\$43	\$121	\$520	\$886	
0.70	% 2.19	% 0.85	% 2.65	% 0.86	% 1.62	%



## Notes to consolidated financial statements

## Wholesale impaired loans and loan modifications

Wholesale impaired loans are comprised of loans that have been placed on nonaccrual status and/or that have been modified in a TDR. All impaired loans are evaluated for an asset-specific allowance as described in Note 15 on pages 276–279 of this Annual Report.

The table below sets forth information about the Firm's wholesale impaired loans.

December 31, (in millions)	Commercial and industrial		Real estate		Financial institutions		Government agencies		Other		Total retained loans	
	2012	2011	2012	2011	2012	2011	2012	2011	2012	2011	2012	2011
Impaired loans												
With an allowance	\$588	\$828	\$375	\$621	\$6	\$21	\$—	\$16	\$122	\$473	\$1,091	\$1,959
Without an allowance <sup>(a)</sup>	173	177	133	292	2	18	—	—	76	103	384	590
Total impaired loans	\$761	\$1,005	\$508	\$913	\$8	\$39	\$—	\$16	\$198	\$576	\$1,475	\$2,549
Allowance for loan losses related to impaired loans	\$205	\$276	\$82	\$148	\$2	\$5	\$—	\$10	\$30	\$77	\$319	\$516
Unpaid principal balance of impaired loans <sup>(b)</sup>	957	1,705	626	1,124	22	63	—	17	318	1,008	1,923	3,917

When the discounted cash flows, collateral value or market price equals or exceeds the recorded investment in the (a) loan, then the loan does not require an allowance. This typically occurs when the impaired loans have been partially charged-off and/or there have been interest payments received and applied to the loan balance.

Represents the contractual amount of principal owed at December 31, 2012 and 2011. The unpaid principal balance (b) differs from the impaired loan balances due to various factors, including charge-offs; interest payments received and applied to the carrying value; net deferred loan fees or costs; and unamortized discount or premiums on purchased loans.

The following table presents the Firm's average impaired loans for the years ended 2012, 2011 and 2010.

Year ended December 31, (in millions)	2012	2011	2010
Commercial and industrial	\$873	\$1,309	\$1,655
Real estate	784	1,813	3,101
Financial institutions	17	84	304
Government agencies	9	20	5
Other	277	634	884
Total <sup>(a)</sup>	\$1,960	\$3,860	\$5,949

(a) The related interest income on accruing impaired loans and interest income recognized on a cash basis were not material for the years ended December 31, 2012, 2011 and 2010.

### Loan modifications

Certain loan modifications are considered to be TDRs as they provide various concessions to borrowers who are experiencing financial difficulty. All TDRs are reported as impaired loans in the tables above.

The following table provides information about the Firm's wholesale loans that have been modified in TDRs, including a reconciliation of the beginning and ending balances of such loans and information regarding the nature and extent of modifications during the periods presented.

Years ended December 31, (in millions)	Commercial and industrial		Real estate		Other <sup>(b)</sup>		Total	
	2012	2011	2012	2011	2012	2011	2012	2011
Beginning balance of TDRs	\$531	\$212	\$176	\$907	\$43	\$24	\$750	\$1,143
New TDRs	162	\$665	43	113	73	32	278	810
Increases to existing TDRs	183	96	—	16	—	—	183	112
Charge-offs post-modification	(27 )	(30 )	(2 )	(146 )	(7 )	—	(36 )	(176 )
Sales and other <sup>(a)</sup>	(274 )	(412 )	(118 )	(714 )	(87 )	(13 )	(479 )	(1,139 )
Ending balance of TDRs	\$575	\$531	\$99	\$176	\$22	\$43	\$696	\$750
TDRs on nonaccrual status	\$522	\$415	\$92	\$128	\$22	\$35	\$636	\$578
Additional commitments to lend to borrowers whose loans have been modified in TDRs	44	147	—	—	2	—	46	147

Sales and other are largely sales and paydowns, but also includes performing loans restructured at market rates that (a) were removed from the reported TDR balance of \$44 million and \$152 million during the years ended

December 31, 2012 and 2011, respectively.

(b) Includes loans to Financial institutions, Government agencies and Other.

### Financial effects of modifications and redefaults

Loans modified as TDRs are typically term or payment extensions and, to a lesser extent, deferrals of principal and/or interest on commercial and industrial and real estate loans. For the years ended December 31, 2012 and 2011, the average term extension granted on loans with term or payment extensions was 1.1 years and 3.3 years, respectively. The weighted-average remaining term for all loans modified during these periods was 3.6 years and 4.5 years, respectively. Wholesale TDR loans that redefaulted within one year of the modification were \$56 million and \$96 million during the years ended December 31, 2012 and 2011, respectively. A payment default is deemed to occur when the borrower has not made a loan payment by its scheduled due date after giving effect to any contractual grace period.

## Notes to consolidated financial statements

## Note 15 – Allowance for credit losses

JPMorgan Chase's allowance for loan losses covers the consumer, including credit card, portfolio segments (primarily scored); and wholesale (risk-rated) portfolio, and represents management's estimate of probable credit losses inherent in the Firm's loan portfolio. The allowance for loan losses includes an asset-specific component, a formula-based component and a component related to PCI loans, as described below. Management also estimates an allowance for wholesale and consumer lending-related commitments using methodologies similar to those used to estimate the allowance on the underlying loans. During 2012, the Firm did not make any significant changes to the methodologies or policies used to determine its allowance for credit losses; such policies are described in the following paragraphs. The asset-specific component of the allowance relates to loans considered to be impaired, which includes loans that have been modified in TDRs as well as risk-rated loans that have been placed on nonaccrual status. To determine the asset-specific component of the allowance, larger loans are evaluated individually, while smaller loans are evaluated as pools using historical loss experience for the respective class of assets. Scored loans (i.e., consumer loans) are pooled by product type, while risk-rated loans (primarily wholesale loans) are segmented by risk rating. The Firm generally measures the asset-specific allowance as the difference between the recorded investment in the loan and the present value of the cash flows expected to be collected, discounted at the loan's original effective interest rate. Subsequent changes in impairment are reported as an adjustment to the provision for loan losses. In certain cases, the asset-specific allowance is determined using an observable market price, and the allowance is measured as the difference between the recorded investment in the loan and the loan's fair value. Impaired collateral-dependent loans are charged down to the fair value of collateral less costs to sell and therefore may not be subject to an asset-specific reserve as for other impaired loans. See Note 14 on pages 250–275 of this Annual Report for more information about charge-offs and collateral-dependent loans.

The asset-specific component of the allowance for impaired loans that have been modified in TDRs incorporates the effects of foregone interest, if any, in the present value calculation and also incorporates the effect of the modification on the loan's expected cash flows, which considers the potential for redefault. For residential real estate loans modified in TDRs, the Firm develops product-specific probability of default estimates, which are applied at a loan level to compute expected losses. In developing these probabilities of default, the Firm considers the relationship between the credit quality characteristics of the underlying loans and certain assumptions about home prices and unemployment, based upon industry-wide data. The Firm also considers its own historical loss experience to date based on actual redefaulted modified loans. For credit card loans modified in TDRs, expected losses incorporate projected redefaults based on the Firm's historical experience by type of modification program. For wholesale loans modified in TDRs, expected losses incorporate redefaults based on management's expectation of the borrower's ability to repay under the modified terms.

The formula-based component is based on a statistical calculation to provide for probable principal losses inherent in performing risk-rated loans and all consumer loans, except for any loans restructured in TDRs and PCI loans. See Note 14 on pages 250–275 of this Annual Report for more information on PCI loans.

For scored loans, the statistical calculation is performed on pools of loans with similar risk characteristics (e.g., product type) and generally computed by applying expected loss factors to outstanding principal balances over an estimated loss emergence period. The loss emergence period represents the time period between the date at which the loss is estimated to have been incurred and the ultimate realization of that loss (through a charge-off). Estimated loss emergence periods may vary by product and may change over time; management applies judgment in estimating loss emergence periods, using available credit information and trends.

Loss factors are statistically derived and sensitive to changes in delinquency status, credit scores, collateral values and other risk factors. The Firm uses a number of different forecasting models to estimate both the PD and the loss severity, including delinquency roll rate models and credit loss severity models. In developing PD and loss severity assumptions, the Firm also considers known and anticipated changes in the economic environment, including changes in home prices, unemployment rates and other risk indicators.





A nationally recognized home price index measure is used to estimate both the PD and the loss severity on residential real estate loans at the metropolitan statistical areas (“MSA”) level. Loss severity estimates are regularly validated by comparison to actual losses recognized on defaulted loans, market-specific real estate appraisals and property sales activity. The economic impact of potential modifications of residential real estate loans is not included in the statistical calculation because of the uncertainty regarding the type and results of such modifications. For risk-rated loans, the statistical calculation is the product of an estimated PD and an estimated LGD. These factors are differentiated by risk rating and expected maturity. In assessing the risk rating of a particular loan, among the factors considered are the obligor’s debt capacity and financial flexibility, the level of the obligor’s earnings, the amount and sources for repayment, the level and nature of contingencies, management strength, and the industry and geography in which the obligor operates. These factors are based on an evaluation of historical and current information, and involve subjective assessment and interpretation. Emphasizing one factor over another or considering additional factors could impact the risk rating assigned by the Firm to that loan. PD estimates are based on observable external through-the-cycle data, using credit-rating agency default statistics. LGD estimates are based on the Firm’s history of actual credit losses over more than one credit cycle.

Management applies judgment within an established framework to adjust the results of applying the statistical calculation described above. The determination of the appropriate adjustment is based on management’s view of uncertainties that have occurred but that are not yet reflected in the loss factors and that relate to current macroeconomic and political conditions, the quality of underwriting standards and other relevant internal and external factors affecting the credit quality of the portfolio. For the scored loan portfolios, adjustments to the statistical calculation are accomplished in part by analyzing the historical loss experience for each major product segment. Factors related to unemployment, home prices, borrower behavior and lien position, the estimated effects of the mortgage foreclosure-related settlement with federal and state officials and uncertainties regarding the ultimate success of loan modifications are incorporated into the calculation, as appropriate. For junior lien products, management considers the delinquency and/or modification status of any senior liens in determining the adjustment. In addition, for the risk-rated portfolios, any adjustments made to the statistical calculation also consider concentrated and deteriorating industries.

Management establishes an asset-specific allowance for lending-related commitments that are considered impaired and computes a formula-based allowance for performing consumer and wholesale lending-related commitments. These are computed using a methodology similar to that used for the wholesale loan portfolio, modified for expected maturities and probabilities of drawdown.

Determining the appropriateness of the allowance is complex and requires judgment by management about the effect of matters that are inherently uncertain. Subsequent evaluations of the loan portfolio, in light of the factors then prevailing, may result in significant changes in the allowances for loan losses and lending-related commitments in future periods.

At least quarterly, the allowance for credit losses is reviewed by the Chief Risk Officer, the Chief Financial Officer and the Controller of the Firm and discussed with the Risk Policy and Audit Committees of the Board of Directors of the Firm. As of December 31, 2012, JPMorgan Chase deemed the allowance for credit losses to be appropriate (i.e., sufficient to absorb probable credit losses that are inherent in the portfolio).

## Notes to consolidated financial statements

## Allowance for credit losses and loans and lending-related commitments by impairment methodology

The table below summarizes information about the allowance for loan losses, loans by impairment methodology, the allowance for lending-related commitments and lending-related commitments by impairment methodology.

Year ended December 31, (in millions)	2012			
	Consumer, excluding credit card	Credit card	Wholesale	Total
Allowance for loan losses				
Beginning balance at January 1,	\$16,294	\$6,999	\$4,316	\$27,609
Cumulative effect of change in accounting principles <sup>(a)</sup>	—	—	—	—
Gross charge-offs	4,805	(c) 5,755	346	10,906
Gross recoveries	(508)	(811)	(524)	(1,843)
Net charge-offs	4,297	(c) 4,944	(178)	9,063
Provision for loan losses	302	3,444	(359)	3,387
Other	(7)	2	8	3
Ending balance at December 31,	\$12,292	\$5,501	\$4,143	\$21,936
Allowance for loan losses by impairment methodology				
Asset-specific <sup>(b)</sup>	\$729	\$1,681	(d) \$319	\$2,729
Formula-based	5,852	3,820	3,824	13,496
PCI	5,711	—	—	5,711
Total allowance for loan losses	\$12,292	\$5,501	\$4,143	\$21,936
Loans by impairment methodology				
Asset-specific	\$13,938	\$4,762	\$1,475	\$20,175
Formula-based	218,945	123,231	304,728	646,904
PCI	59,737	—	19	59,756
Total retained loans	\$292,620	\$127,993	\$306,222	\$726,835
Impaired collateral-dependent loans				
Net charge-offs	\$973	(c) \$—	\$77	\$1,050
Loans measured at fair value of collateral less cost to sell	3,272	—	445	3,717
Allowance for lending-related commitments				
Beginning balance at January 1,	\$7	\$—	\$666	\$673
Cumulative effect of change in accounting principles <sup>(a)</sup>	—	—	—	—
Provision for lending-related commitments	—	—	(2)	(2)
Other	—	—	(3)	(3)
Ending balance at December 31,	\$7	\$—	\$661	\$668
Allowance for lending-related commitments by impairment methodology				
Asset-specific	\$—	\$—	\$97	\$97
Formula-based	7	—	564	571
Total allowance for lending-related commitments	\$7	\$—	\$661	\$668

## Lending-related commitments by impairment methodology

Asset-specific	\$—	\$—	\$355	\$355
Formula-based	60,156	533,018	434,459	1,027,633
Total lending-related commitments	\$60,156	\$533,018	\$434,814	\$1,027,988

Effective January 1, 2010, the Firm adopted accounting guidance related to VIEs. Upon adoption of the guidance, the Firm consolidated its Firm-sponsored credit card securitization trusts, its Firm-administered multi-seller

- (a) conduits and certain other consumer loan securitization entities, primarily mortgage-related. As a result, \$7.4 billion, \$14 million and \$127 million, respectively, of allowance for loan losses were recorded on-balance sheet with the consolidation of these entities. For further discussion, see Note 16 on pages 280–291 of this Annual Report.
- (b) Includes risk-rated loans that have been placed on nonaccrual status and loans that have been modified in a TDR.
- (c) Consumer, excluding credit card, charge-offs for the year ended December 31, 2012, included \$747 million of charge-offs for Chapter 7 residential real estate loans and \$53 million of charge-offs for Chapter 7 auto loans.
- The asset-specific credit card allowance for loan losses is related to loans that have been modified in a TDR; such
- (d) allowance is calculated based on the loans' original contractual interest rates and does not consider any incremental penalty rates.

(table continued from previous page)

2011				2010			
Consumer, excluding credit card	Credit card	Wholesale	Total	Consumer, excluding credit card	Credit card	Wholesale	Total
\$16,471	\$11,034	\$4,761	\$32,266	\$14,785	\$9,672	\$7,145	\$31,602
—	—	—	—	127	7,353	14	7,494
5,419	8,168	916	14,503	8,383	15,410	1,989	25,782
(547 )	(1,243 )	(476 )	(2,266 )	(474 )	(1,373 )	(262 )	(2,109 )
4,872	6,925	440	12,237	7,909	14,037	1,727	23,673
4,670	2,925	17	7,612	9,458	8,037	(673 )	16,822
25	(35 )	(22 )	(32 )	10	9	2	21
\$16,294	\$6,999	\$4,316	\$27,609	\$16,471	\$11,034	\$4,761	\$32,266
\$828	\$2,727	<sup>(d)</sup> \$516	\$4,071	\$1,075	\$4,069	<sup>(d)</sup> \$1,574	\$6,718
9,755	4,272	3,800	17,827	10,455	6,965	3,187	20,607
5,711	—	—	5,711	4,941	—	—	4,941
\$16,294	\$6,999	\$4,316	\$27,609	\$16,471	\$11,034	\$4,761	\$32,266
\$9,892	\$7,214	\$2,549	\$19,655	\$6,220	\$10,005	\$5,486	\$21,711
232,989	124,961	275,825	633,775	248,481	125,519	216,980	590,980
65,546	—	21	65,567	72,763	—	44	72,807
\$308,427	\$132,175	\$278,395	\$718,997	\$327,464	\$135,524	\$222,510	\$685,498
\$110	\$—	\$128	\$238	\$304	\$—	\$636	\$940
830	—	833	1,663	890	—	1,269	2,159
\$6	\$—	\$711	\$717	\$12	\$—	\$927	\$939
—	—	—	—	—	—	(18 )	(18 )
2	—	(40 )	(38 )	(6 )	—	(177 )	(183 )
(1 )	—	(5 )	(6 )	—	—	(21 )	(21 )
\$7	\$—	\$666	\$673	\$6	\$—	\$711	\$717
\$—	\$—	\$150	\$150	\$—	\$—	\$180	\$180
7	—	516	523	6	—	531	537
\$7	\$—	\$666	\$673	\$6	\$—	\$711	\$717
\$—	\$—	\$865	\$865	\$—	\$—	\$1,005	\$1,005
62,307	530,616	381,874	974,797	65,403	547,227	345,074	957,704
\$62,307	\$530,616	\$382,739	\$975,662	\$65,403	\$547,227	\$346,079	\$958,709



## Notes to consolidated financial statements

## Note 16 – Variable interest entities

For a further description of JPMorgan Chase’s accounting policies regarding consolidation of VIEs, see Note 1 on pages 193–194 of this Annual Report.

The following table summarizes the most significant types of Firm-sponsored VIEs by business segment. The Firm considers a “sponsored” VIE to include any entity where: (1) JPMorgan Chase is the principal beneficiary of the structure; (2) the VIE is used by JPMorgan Chase to securitize Firm assets; (3) the VIE issues financial instruments with the JPMorgan Chase name; or (4) the entity is a JPMorgan Chase–administered asset-backed commercial paper conduit.

Line-of-Business	Transaction Type	Activity	Annual Report page reference
CCB	Credit card securitization trusts	Securitization of both originated and purchased credit card receivables	281
	Other securitization trusts	Securitization of originated automobile and student loans	281–283
	Mortgage securitization trusts	Securitization of originated and purchased residential mortgages	281–283
CIB	Mortgage and other securitization trusts	Securitization of both originated and purchased residential and commercial mortgages, automobile and student loans	281–283
	Multi-seller conduits	Assist clients in accessing the financial markets in a cost-efficient manner and	284–285
	Investor intermediation activities:	structures transactions to meet investor needs	
	Municipal bond vehicles		285–286
	Credit-related note and asset swap vehicles		286–288

The Firm’s other business segments are also involved with VIEs, but to a lesser extent, as follows:

**Asset Management:** Sponsors and manages certain funds that are deemed VIEs. As asset manager of the funds, AM earns a fee based on assets managed; the fee varies with each fund’s investment objective and is competitively priced. For fund entities that qualify as VIEs, AM’s interests are, in certain cases, considered to be significant variable interests that result in consolidation of the financial results of these entities.

**Commercial Banking:** CB makes investments in and provides lending to community development entities that may meet the definition of a VIE. In addition, CB provides financing and lending related services to certain client-sponsored VIEs. In general, CB does not control the activities of these entities and does not consolidate these entities.

**Corporate/Private Equity:** Corporate uses VIEs to issue trust preferred securities. See Note 21 on pages 297–299 of this Annual Report for further information. The Private Equity business, within Corporate/Private Equity, may be involved with entities that are deemed VIEs. However, the Firm’s private equity business is subject to specialized investment company accounting, which does not require the consolidation of investments, including VIEs.

The Firm also invests in and provides financing and other services to VIEs sponsored by third parties, as described on page 288 of this Note.

#### Significant Firm-sponsored variable interest entities

##### Credit card securitizations

The Card business securitizes originated and purchased credit card loans, primarily through the Chase Issuance Trust (the "Trust"). The Firm's continuing involvement in credit card securitizations includes servicing the receivables, retaining an undivided seller's interest in the receivables, retaining certain senior and subordinated securities and maintaining escrow accounts.

The Firm is considered to be the primary beneficiary of these Firm-sponsored credit card securitization trusts based on the Firm's ability to direct the activities of these VIEs through its servicing responsibilities and other duties, including making decisions as to the receivables that are transferred into those trusts and as to any related modifications and workouts. Additionally, the nature and extent of the Firm's other continuing involvement with the trusts, as indicated above, obligates the Firm to absorb losses and gives the Firm the right to receive certain benefits from these VIEs that could potentially be significant.

The underlying securitized credit card receivables and other assets of the securitization trusts are available only for payment of the beneficial interests issued by the securitization trusts; they are not available to pay the Firm's other obligations or the claims of the Firm's other creditors.

The agreements with the credit card securitization trusts require the Firm to maintain a minimum undivided interest in the credit card trusts (which generally ranges from 4% to 12%). As of December 31, 2012 and 2011, the Firm held undivided interests in Firm-sponsored credit card securitization trusts of \$15.8 billion and \$13.7 billion, respectively. The Firm maintained an average undivided interest in principal receivables owned by those trusts of approximately 28% and 22% for the years ended December 31, 2012 and 2011, respectively. The Firm also retained \$362 million and \$541 million of senior securities and \$4.6 billion and \$3.0 billion of subordinated securities in certain of its credit card securitization trusts as of December 31, 2012 and 2011, respectively. The Firm's undivided interests in the credit card trusts and securities retained are eliminated in consolidation.

##### Firm-sponsored mortgage and other securitization trusts

The Firm securitizes (or has securitized) originated and purchased residential mortgages, commercial mortgages and other consumer loans (including automobile and student loans) primarily in its CIB and CCB businesses. Depending on the particular transaction, as well as the respective business involved, the Firm may act as the servicer of the loans and/or retain certain beneficial interests in the securitization trusts.

## Notes to consolidated financial statements

The following table presents the total unpaid principal amount of assets held in Firm-sponsored private-label securitization entities, including those in which the Firm has continuing involvement, and those that are consolidated by the Firm. Continuing involvement includes servicing the loans, holding senior interests or subordinated interests, recourse or guarantee arrangements, and derivative transactions. In certain instances, the Firm's only continuing involvement is servicing the loans. See Securitization activity on page 289 of this Note for further information regarding the Firm's cash flows with and interests retained in nonconsolidated VIEs, and pages 289–290 of this Note for information on the Firm's loan sales to U.S. government agencies.

December 31, 2012 <sup>(a)</sup> (in billions)	Principal amount outstanding			JPMorgan Chase interest in securitized assets in nonconsolidated VIEs <sup>(d)(e)(f)</sup>		
	Total assets held by securitization VIEs	Assets held in consolidated securitization VIEs	Assets held in nonconsolidated securitization VIEs with continuing involvement	Trading assets	AFS securities	Total interests held by JPMorgan Chase
Securitization-related Residential mortgage:						
Prime and Alt-A	\$ 107.2	\$ 2.5	\$ 80.6	\$ 0.3	\$ —	\$ 0.3
Subprime	34.5	1.3	31.3	0.1	—	0.1
Option ARMs	26.3	0.2	26.1	—	—	—
Commercial and other <sup>(b)</sup>	127.8	—	81.8	1.5	2.8	4.3
Total	\$ 295.8	\$ 4.0	\$ 219.8	\$ 1.9	\$ 2.8	\$ 4.7

December 31, 2011 <sup>(a)</sup> (in billions)	Principal amount outstanding			JPMorgan Chase interest in securitized assets in nonconsolidated VIEs <sup>(d)(e)(f)</sup>		
	Total assets held by securitization VIEs	Assets held in consolidated securitization VIEs	Assets held in nonconsolidated securitization VIEs with continuing involvement	Trading assets	AFS securities	Total interests held by JPMorgan Chase
Securitization-related Residential mortgage:						
Prime and Alt-A	\$ 129.9	\$ 2.7	\$ 101.0	\$ 0.6	\$ —	\$ 0.6
Subprime	39.4	1.4	35.8	—	—	—
Option ARMs	31.4	0.3	31.1	—	—	—
Commercial and other <sup>(b)</sup>	139.3	—	93.3	1.7	2.0	3.7
Total <sup>(c)</sup>	\$ 340.0	\$ 4.4	\$ 261.2	\$ 2.3	\$ 2.0	\$ 4.3

(a) Excludes U.S. government agency securitizations. See pages 289–290 of this Note for information on the Firm's loan sales to U.S. government agencies.

Consists of securities backed by commercial loans (predominantly real estate) and non-mortgage-related consumer

(b) receivables purchased from third parties. The Firm generally does not retain a residual interest in its sponsored commercial mortgage securitization transactions.

(c) Prior period amounts have been revised to conform with the current presentation methodology.

(d) The table above excludes the following: retained servicing (see Note 17 on pages 291–295 of this Annual Report for a discussion of MSRs); securities retained from loans sales to U.S. government agencies; interest rate and foreign exchange derivatives primarily used to manage interest rate and foreign exchange risks of securitization entities



(See Note 6 on pages 218–227 of this Annual Report for further information on derivatives); senior and subordinated securities of \$131 million and \$45 million, respectively, at December 31, 2012, and \$110 million and \$8 million, respectively, at December 31, 2011, which the Firm purchased in connection with CIB's secondary market-making activities.

(e) Includes interests held in re-securitization transactions.

As of December 31, 2012 and 2011, 74% and 68%, respectively, of the Firm's retained securitization interests, which are carried at fair value, were risk-rated "A" or better, on an S&P-equivalent basis. The retained interests in prime residential mortgages consisted of \$170 million and \$136 million of investment-grade and \$171 million and

(f) \$427 million of noninvestment-grade retained interests at December 31, 2012 and 2011, respectively. The retained interests in commercial and other securitizations trusts consisted of \$4.1 billion and \$3.4 billion of investment-grade and \$164 million and \$283 million of noninvestment-grade retained interests at December 31, 2012 and 2011, respectively.

### Residential mortgage

The Firm securitizes residential mortgage loans originated by CCB, as well as residential mortgage loans purchased from third parties by either CCB or CIB. CCB generally retains servicing for all residential mortgage loans originated or purchased by CCB, and for certain mortgage loans purchased by CIB. For securitizations serviced by CCB, the Firm has the power to direct the significant activities of the VIE because it is responsible for decisions related to loan modifications and workouts. CCB may also retain an interest upon securitization.

In addition, CIB engages in underwriting and trading activities involving securities issued by Firm-sponsored securitization trusts. As a result, CIB at times retains senior and/or subordinated interests (including residual interests) in residential mortgage securitizations upon securitization, and/or reacquires positions in the secondary market in the normal course of business. In certain instances, as a result of the positions retained or reacquired by CIB or held by CCB, when considered together with the servicing arrangements entered into by CCB, the Firm is deemed to be the primary beneficiary of certain securitization trusts. See the table on page 288 of this Note for more information on consolidated residential mortgage securitizations.

The Firm does not consolidate a residential mortgage securitization (Firm-sponsored or third-party-sponsored) when it is not the servicer (and therefore does not have the power to direct the most significant activities of the trust) or does not hold a beneficial interest in the trust that could potentially be significant to the trust. At December 31, 2012 and 2011, the Firm did not consolidate the assets of certain Firm-sponsored residential mortgage securitization VIEs, in which the Firm had continuing involvement, primarily due to the fact that the Firm did not hold an interest in these trusts that could potentially be significant to the trusts. See the table on page 288 of this Note for more information on the consolidated residential mortgage securitizations, and the table on the previous page of this Note for further information on interests held in nonconsolidated residential mortgage securitizations.

### Commercial mortgages and other consumer securitizations

CIB originates and securitizes commercial mortgage loans, and engages in underwriting and trading activities involving the securities issued by securitization trusts. CIB may retain unsold senior and/or subordinated interests in commercial mortgage securitizations at the time of securitization but, generally, the Firm does not service commercial loan securitizations. For commercial mortgage securitizations the power to direct the significant activities of the VIE generally is held by the servicer or investors in a specified class of securities (“controlling class”). See the table on page 288 of this Note for more information on the consolidated commercial mortgage securitizations, and the table on the previous page of this Note for further information on interests held in nonconsolidated securitizations.

The Firm also securitizes automobile and student loans. The Firm retains servicing responsibilities for all originated and certain purchased student and automobile loans and has the power to direct the activities of these VIEs through these servicing responsibilities. See the table on page 288 of this Note for more information on the consolidated student loan securitizations, and the table on the previous page of this Note for further information on interests held in nonconsolidated securitizations.

### Re-securitizations

The Firm engages in certain re-securitization transactions in which debt securities are transferred to a VIE in exchange for new beneficial interests. These transfers occur in connection with both agency (Fannie Mae, Freddie Mac and Ginnie Mae) and nonagency (private-label) sponsored VIEs, which may be backed by either residential or commercial mortgages. The Firm’s consolidation analysis is largely dependent on the Firm’s role and interest in the re-securitization trusts. During the years ended December 31, 2012, 2011 and 2010, the Firm transferred \$10.0 billion, \$24.9 billion and \$33.9 billion, respectively, of securities to agency VIEs, and \$286 million, \$381 million and \$1.3 billion, respectively, of securities to private-label VIEs.

Most re-securitizations with which the Firm is involved are client-driven transactions in which a specific client or group of clients are seeking a specific return or risk profile. For these transactions, the Firm has concluded that the decision-making power of the entity is shared between the Firm and its client(s), considering the joint effort and decisions in establishing the re-securitization trust and its assets, as well as the significant economic interest the client holds in the re-securitization trust; therefore the Firm does not consolidate the re-securitization VIE.



## Notes to consolidated financial statements

In more limited circumstances, the Firm creates a re-securitization trust independently and not in conjunction with specific clients. In these circumstances, the Firm is deemed to have the unilateral ability to direct the most significant activities of the re-securitization trust because of the decisions made during the establishment and design of the trust; therefore, the Firm consolidates the re-securitization VIE if the Firm holds an interest that could potentially be significant.

Additionally, the Firm may invest in beneficial interests of third-party securitizations and generally purchases these interests in the secondary market. In these circumstances, the Firm does not have the unilateral ability to direct the most significant activities of the re-securitization trust, either because it wasn't involved in the initial design of the trust, or the Firm is involved with an independent third party sponsor and demonstrates shared power over the creation of the trust; therefore, the Firm does not consolidate the re-securitization VIE.

As of December 31, 2012 and 2011, the Firm did not consolidate any agency re-securitizations. As of December 31, 2012 and 2011, the Firm consolidated \$76 million and \$348 million, respectively, of assets, and \$5 million and \$139 million, respectively, of liabilities of private-label re-securitizations. See the table on page 288 of this Note for more information on the consolidated re-securitization transactions.

As of December 31, 2012 and 2011, total assets (including the notional amount of interest-only securities) of nonconsolidated Firm-sponsored private-label re-securitization entities in which the Firm has continuing involvement were \$4.6 billion and \$3.3 billion, respectively. At December 31, 2012 and 2011, the Firm held approximately \$2.0 billion and \$3.6 billion, respectively, of interests in nonconsolidated agency re-securitization entities, and \$61 million and \$14 million, respectively, of senior and subordinated interests in nonconsolidated private-label re-securitization entities. See the table on page 282 of this Note for further information on interests held in nonconsolidated securitizations.

#### Multi-seller conduits

Multi-seller conduit entities are separate bankruptcy remote entities that purchase interests in, and make loans secured by, pools of receivables and other financial assets pursuant to agreements with customers of the Firm. The conduits fund their purchases and loans through the issuance of highly rated commercial paper. The primary source of repayment of the commercial paper is the cash flows from the pools of assets. In most instances, the assets are structured with deal-specific credit enhancements provided to the conduits by the customers (i.e., sellers) or other third parties. Deal-specific credit enhancements are generally structured to cover a multiple of historical losses expected on the pool of assets, and are typically in the form of overcollateralization provided by the seller. The deal-specific credit enhancements mitigate the Firm's potential losses on its agreements with the conduits.

To ensure timely repayment of the commercial paper, each asset pool financed by the conduits has a minimum 100% deal-specific liquidity facility associated with it provided by JPMorgan Chase Bank, N.A. JPMorgan Chase Bank, N.A. also provides the multi-seller conduit vehicles with uncommitted program-wide liquidity facilities and program-wide credit enhancement in the form of standby letters of credit. The amount of program-wide credit enhancement required is based upon commercial paper issuance and approximates 10% of the outstanding balance. The Firm consolidates its Firm-administered multi-seller conduits, as the Firm has both the power to direct the significant activities of the conduits and a potentially significant economic interest in the conduits. As administrative agent and in its role in structuring transactions, the Firm makes decisions regarding asset types and credit quality, and manages the commercial paper funding needs of the conduits. The Firm's interests that could potentially be significant to the VIEs include the fees received as administrative agent and liquidity and program-wide credit enhancement provider, as well as the potential exposure created by the liquidity and credit enhancement facilities provided to the conduits. See page 288 of this Note for further information on consolidated VIE assets and liabilities.

In the normal course of business, JPMorgan Chase makes markets in and invests in commercial paper, including commercial paper issued by the Firm-administered multi-seller conduits. The Firm held \$8.3 billion and \$11.3 billion of the commercial paper issued by the Firm-administered multi-seller conduits at December 31, 2012 and 2011, respectively. The Firm's investments were not driven by market illiquidity and the Firm is not obligated under any agreement to purchase the commercial paper issued by the Firm-administered multi-seller conduits.

Deal-specific liquidity facilities, program-wide liquidity and credit enhancement provided by the Firm have been eliminated in consolidation. The Firm provides lending-related commitments to certain clients of the Firm-administered multi-seller conduits. The unfunded portion of these commitments was \$10.8 billion at both December 31, 2012 and 2011, and are reported as off-balance sheet lending-related commitments. For more information on off-balance sheet lending-related commitments, see Note 29 on pages 308–315 of this Annual Report.

VIEs associated with investor intermediation activities

As a financial intermediary, the Firm creates certain types of VIEs and also structures transactions with these VIEs, typically using derivatives, to meet investor needs. The Firm may also provide liquidity and other support. The risks inherent in the derivative instruments or liquidity commitments are managed similarly to other credit, market or liquidity risks to which the Firm is exposed. The principal types of VIEs for which the Firm is engaged in on behalf of clients are municipal bond vehicles, credit-related note vehicles and asset swap vehicles.

Municipal bond vehicles

The Firm has created a series of trusts that provide short-term investors with qualifying tax-exempt investments, and that allow investors in tax-exempt securities to finance their investments at short-term tax-exempt rates. In a typical transaction, the vehicle purchases fixed-rate longer-term highly rated municipal bonds and funds the purchase by issuing two types of securities: (1) puttable floating-rate certificates and (2) inverse floating-rate residual interests ("residual interests"). The maturity of each of the puttable floating-rate certificates and the residual interests is equal to the life of the vehicle, while the maturity of the underlying municipal bonds is typically longer. Holders of the puttable floating-rate certificates may "put," or tender, the certificates if the remarketing agent cannot successfully remarket the floating-rate certificates to another investor. A liquidity facility conditionally obligates the liquidity provider to fund the purchase of the tendered floating-rate certificates. Upon termination of the vehicle, proceeds from the sale of the underlying municipal bonds would first repay any funded liquidity facility or outstanding floating-rate certificates and the remaining amount, if any, would be paid to the residual interests. If the proceeds from the sale of the underlying municipal bonds are not sufficient to repay the liquidity facility, in certain transactions the liquidity provider has recourse to the residual interest holders for

reimbursement. Certain residual interest holders may be required to post collateral with the Firm, as liquidity provider, to support such reimbursement obligations should the market value of the municipal bonds decline.

JPMorgan Chase Bank, N.A. often serves as the sole liquidity provider, and J.P. Morgan Securities LLC serves as remarketing agent, of the puttable floating-rate certificates. The liquidity provider's obligation to perform is conditional and is limited by certain termination events, which include bankruptcy or failure to pay by the municipal bond issuer or credit enhancement provider, an event of taxability on the municipal bonds or the immediate downgrade of the municipal bond to below investment grade. In addition, the Firm's exposure as liquidity provider is further limited by the high credit quality of the underlying municipal bonds, the excess collateralization in the vehicle, or in certain transactions, the reimbursement agreements with the residual interest holders. However, a downgrade of JPMorgan Chase Bank, N.A.'s short-term rating does not affect the Firm's obligation under the liquidity facility.

The long-term credit ratings of the puttable floating rate certificates are directly related to the credit ratings of the underlying municipal bonds, the credit rating of any insurer of the underlying municipal bond, and the Firm's short-term credit rating as liquidity provider. A downgrade in any of these ratings would affect the rating of the puttable floating-rate certificates and could cause demand for these certificates by investors to decline or disappear. As remarketing agent, the Firm may hold puttable floating-rate certificates of the municipal bond vehicles. At December 31, 2012 and 2011, the Firm held \$893 million and \$637 million, respectively, of these certificates on its Consolidated Balance Sheets. The largest amount held by the Firm at any time during 2012 was \$1.8 billion, or 8%, of the municipal bond vehicles' aggregate outstanding puttable floating-rate certificates. The Firm did not have and

continues not to have any intent to protect any residual interest holder from potential losses on any of the municipal bond holdings.

## Notes to consolidated financial statements

The Firm consolidates municipal bond vehicles if it owns the residual interest. The residual interest generally allows the owner to make decisions that significantly impact the economic performance of the municipal bond vehicle, primarily by directing the sale of the municipal bonds owned by the vehicle. In addition, the residual interest owners have the right to receive benefits and bear losses that could potentially be significant to the municipal bond

vehicle. The Firm does not consolidate municipal bond vehicles if it does not own the residual interests, since the Firm does not have the power to make decisions that significantly impact the economic performance of the municipal bond vehicle. See page 288 of this Note for further information on consolidated municipal bond vehicles.

The Firm's exposure to nonconsolidated municipal bond VIEs at December 31, 2012 and 2011, including the ratings profile of the VIEs' assets, was as follows.

December 31, (in billions)	Fair value of assets held by VIEs	Liquidity facilities	Excess/(deficit) <sup>(a)</sup>	Maximum exposure
Nonconsolidated municipal bond vehicles				
2012	\$14.2	\$8.0	\$ 6.2	\$8.0
2011	13.5	7.9	5.6	7.9

December 31, (in billions, except where otherwise noted)	Ratings profile of VIE assets <sup>(b)</sup>					Fair value of assets held by VIEs	Wt. avg. expected life of assets (years)		
	Investment-grade	Noninvestment grade	AAA to AAA-	AA+ to AA-	A+ to A- BBB+ to BBB-			BB+ and below	
2012			\$1.6	\$11.8	\$0.8	\$—	\$—	\$14.2	5.9
2011			1.5	11.2	0.7	—	0.1	13.5	6.6

(a) Represents the excess/(deficit) of the fair values of municipal bond assets available to repay the liquidity facilities, if drawn.

(b) The ratings scale is based on the Firm's internal risk ratings and is presented on an S&P-equivalent basis.

## Credit-related note and asset swap vehicles

## Credit-related note vehicles

The Firm structures transactions with credit-related note vehicles in which the VIE purchases highly rated assets, such as asset-backed securities, and enters into a credit derivative contract with the Firm to obtain exposure to a referenced credit which the VIE otherwise does not hold. The VIE then issues credit-linked notes ("CLNs") with maturities predominantly ranging from one to ten years in order to transfer the risk of the referenced credit to the VIE's investors. Clients and investors often prefer using a CLN vehicle since the CLNs issued by the VIE generally carry a higher credit rating than such notes would if issued directly by JPMorgan Chase. As a derivative counterparty in a credit-related note structure, the Firm has a senior claim on the collateral of the VIE and reports such derivatives on its Consolidated Balance Sheets at fair value. The collateral purchased by such VIEs is largely investment-grade, with a significant amount being rated "AAA." The Firm divides its credit-related note structures broadly into two types: static and managed.

In a static credit-related note structure, the CLNs and associated credit derivative contract either reference a single credit (e.g., a multi-national corporation), or all or part of a fixed portfolio of credits. In a managed credit-related note structure, the CLNs and associated credit

derivative generally reference all or part of an actively managed portfolio of credits. An agreement exists between a portfolio manager and the VIE that gives the portfolio manager the ability to substitute each referenced credit in the

portfolio for an alternative credit. The Firm does not act as portfolio manager; its involvement with the VIE is generally limited to being a derivative counterparty. As a net buyer of credit protection, in both static and managed credit-related note structures, the Firm pays a premium to the VIE in return for the receipt of a payment (up to the notional of the derivative) if one or more of the credits within the portfolio defaults, or if the losses resulting from the default of reference credits exceed specified levels. The Firm does not provide any additional contractual financial support to the VIE. In addition, the Firm has not historically provided any financial support to the CLN vehicles over and above its contractual obligations. Since each CLN is established to the specifications of the investors, the investors have the power over the activities of that VIE that most significantly affect the performance of the CLN. Furthermore, the Firm does not generally have a variable interest that could potentially be significant. Accordingly, the Firm does not generally consolidate these credit-related note entities. As a derivative counterparty, the Firm has a senior claim on the collateral of the VIE and reports such derivatives on its Consolidated Balance Sheets at fair value. Substantially all of the assets purchased by such VIEs are investment-grade.



## Asset swap vehicles

The Firm structures and executes transactions with asset swap vehicles on behalf of investors. In such transactions, the VIE purchases a specific asset or assets and then enters into a derivative with the Firm in order to tailor the interest rate or foreign exchange currency risk, or both, according to investors' requirements. Generally, the assets are held by the VIE to maturity, and the tenor of the derivatives would match the maturity of the assets. Investors typically invest in the notes issued by such VIEs in order to obtain exposure to the credit risk of the specific assets, as well as exposure to foreign exchange and interest rate risk that is tailored to their specific needs. The derivative transaction between the Firm and the VIE may include currency swaps to hedge assets held by the VIE denominated in foreign currency into the investors' local currency or interest rate swaps to hedge the interest rate risk of assets held by the VIE; to add additional interest rate exposure into the VIE in order to increase the return on the issued notes; or to convert an interest-bearing asset into a zero-coupon bond.

The Firm's exposure to asset swap vehicles is generally limited to its rights and obligations under the interest rate and/or foreign exchange derivative contracts. The Firm historically has not provided any financial support to the asset swap vehicles over and above its contractual obligations. The Firm does not generally consolidate these asset swap vehicles, since the Firm does not have the power to direct the significant activities of these entities and does not have a variable interest that could potentially be significant. As a derivative counterparty, the Firm has a senior claim on the collateral of the VIE and reports such derivatives on its Consolidated Balance Sheets at fair value. Substantially all of the assets purchased by such VIEs are investment-grade.

Exposure to nonconsolidated credit-related note and asset swap VIEs at December 31, 2012 and 2011, was as follows.

December 31, 2012 (in billions)	Net derivative receivables	Total exposure	Par value of collateral held by VIEs <sup>(a)</sup>
Credit-related notes			
Static structure	\$0.5	\$0.5	\$7.3
Managed structure	0.6	0.6	5.6
Total credit-related notes	1.1	1.1	12.9
Asset swaps	0.4	0.4	7.9
Total	\$1.5	\$1.5	\$20.8
December 31, 2011 (in billions)	Net derivative receivables	Total exposure	Par value of collateral held by VIEs <sup>(a)</sup>
Credit-related notes			
Static structure	\$1.0	\$1.0	\$9.1
Managed structure	2.7	2.7	7.7
Total credit-related notes	3.7	3.7	16.8
Asset swaps	0.6	0.6	8.6
Total	\$4.3	\$4.3	\$25.4

The Firm's maximum exposure arises through the derivatives executed with the VIEs; the exposure varies over time with changes in the fair value of the derivatives. The Firm relies on the collateral held by the VIEs to pay any amounts due under the derivatives; the vehicles are structured at inception so that the par value of the collateral is expected to be sufficient to pay amounts due under the derivative contracts.

## Notes to consolidated financial statements

The Firm consolidated Firm-sponsored and third-party credit-related note vehicles with collateral fair values of \$483 million and \$231 million, at December 31, 2012 and 2011, respectively. The Firm consolidated these vehicles, because it held positions in these entities that provided the Firm with control of certain vehicles. The Firm did not consolidate any asset swap vehicles at December 31, 2012 and 2011.

## VIEs sponsored by third parties

## VIE used in FRBNY transaction

In conjunction with the Bear Stearns merger in June 2008, the Federal Reserve Bank of New York (“FRBNY”) took control, through an LLC formed for this purpose, of a portfolio of \$30.0 billion in assets, based on the value of the portfolio as of March 14, 2008. The assets of the LLC were funded by a \$28.85 billion term loan from the FRBNY and a \$1.15 billion subordinated loan from JPMorgan Chase. The JPMorgan Chase loan was subordinated to the

FRBNY loan and bore the first \$1.15 billion of any losses of the portfolio. Any remaining assets in the portfolio after repayment of the FRBNY loan, repayment of the JPMorgan Chase loan and the expense of the LLC was for the account of the FRBNY. The extent to which the FRBNY and JPMorgan Chase loans were repaid depended on the value of the assets in the portfolio and the liquidation strategy directed by the FRBNY. The Firm did not consolidate the LLC, as it did not have the power to direct the activities of the VIE that most significantly impact the VIE’s economic performance. In June 2012, the FRBNY loan was repaid in full and in November 2012, the JPMorgan Chase loan was repaid in full. During the year ended December 31, 2012, JPMorgan Chase recognized a pretax gain of \$665 million reflecting the recovery on the \$1.15 billion subordinated loan plus contractual interest.

## Consolidated VIE assets and liabilities

The following table presents information on assets and liabilities related to VIEs consolidated by the Firm as of December 31, 2012 and 2011.

December 31, 2012 (in billions) <sup>(a)</sup>	Assets			Total assets <sup>(e)</sup>	Liabilities		
	Trading assets – debt and equity instruments	Loans	Other <sup>(d)</sup>		Beneficial interests in VIE assets <sup>(f)</sup>	Other <sup>(g)</sup>	Total liabilities
VIE program type							
Firm-sponsored credit card trusts	\$—	\$51.9	\$0.8	\$52.7	\$30.1	\$—	\$30.1
Firm-administered multi-seller conduits	—	25.4	0.1	25.5	17.2	—	17.2
Municipal bond vehicles	9.8	—	0.1	9.9	11.0	—	11.0
Mortgage securitization entities <sup>(b)</sup>	1.4	2.0	—	3.4	2.3	1.1	3.4
Other <sup>(c)</sup>	0.8	3.4	1.1	5.3	2.6	0.1	2.7
Total	\$12.0	\$82.7	\$2.1	\$96.8	\$63.2	\$1.2	\$64.4
December 31, 2011 (in billions) <sup>(a)</sup>	Assets			Total assets <sup>(e)</sup>	Liabilities		
	Trading assets – debt and equity instruments	Loans	Other <sup>(d)</sup>		Beneficial interests in VIE assets <sup>(f)</sup>	Other <sup>(g)</sup>	Total liabilities
VIE program type							

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Firm-sponsored credit card trusts	\$—	\$50.7	\$0.8	\$51.5	\$32.5	\$—	\$32.5
Firm-administered multi-seller conduits	—	29.7	0.2	29.9	18.7	—	18.7
Municipal bond vehicles	9.2	—	0.1	9.3	9.2	—	9.2
Mortgage securitization entities <sup>(b)</sup>	1.4	2.3	—	3.7	2.3	1.3	3.6
Other <sup>(c)</sup>	1.5	4.1	1.5	7.1	3.3	0.2	3.5
Total	\$12.1	\$86.8	\$2.6	\$101.5	\$66.0	\$1.5	\$67.5

(a) Excludes intercompany transactions which were eliminated in consolidation.

(b) Includes residential and commercial mortgage securitizations as well as re-securitizations.

(c) Primarily comprises student loan securitization entities. The Firm consolidated \$3.3 billion and \$4.1 billion of student loan securitization entities as of December 31, 2012 and 2011, respectively.

(d) Includes assets classified as cash, derivative receivables, AFS securities, and other assets within the Consolidated Balance Sheets.

(e) The assets of the consolidated VIEs included in the program types above are used to settle the liabilities of those entities. The difference between total assets and total liabilities recognized for consolidated VIEs represents the Firm's interest in the consolidated VIEs for each program type.

(f) The interest-bearing beneficial interest liabilities issued by consolidated VIEs are classified in the line item on the Consolidated Balance Sheets titled, "Beneficial interests issued by consolidated variable interest entities." The holders of these beneficial interests do not have recourse to the general credit of JPMorgan Chase. Included in beneficial interests in VIE assets are long-term beneficial interests of \$35.0 billion and \$39.7 billion at December 31, 2012 and 2011, respectively. The maturities of the long-term beneficial interests as of December 31, 2012, were as follows: \$11.9 billion under one year, \$16.0 billion between one and five years, and \$7.1 billion over five years, all respectively.

(g) Includes liabilities classified as accounts payable and other liabilities in the Consolidated Balance Sheets.

## Supplemental information on loan securitizations

The Firm securitizes and sells a variety of loans, including residential mortgage, credit card, automobile, student and commercial (primarily related to real estate) loans, as well as debt securities. The primary purposes of these securitization transactions are to satisfy investor demand and to generate liquidity for the Firm.

For loan securitizations in which the Firm is not required to consolidate the trust, the Firm records the transfer of the loan receivable to the trust as a sale when the accounting criteria for a sale are met. Those criteria are: (1) the transferred financial assets are legally isolated from the Firm's creditors; (2) the transferee or beneficial interest

holder can pledge or exchange the transferred financial assets; and (3) the Firm does not maintain effective control over the transferred financial assets (e.g., the Firm cannot repurchase the transferred assets before their maturity and it does not have the ability to unilaterally cause the holder to return the transferred assets).

For loan securitizations accounted for as a sale, the Firm recognizes a gain or loss based on the difference between the value of proceeds received (including cash, beneficial interests, or servicing assets received) and the carrying value of the assets sold. Gains and losses on securitizations are reported in noninterest revenue.

## Securitization activity

The following tables provide information related to the Firm's securitization activities for the years ended December 31, 2012, 2011 and 2010, related to assets held in JPMorgan Chase-sponsored securitization entities that were not consolidated by the Firm, and where sale accounting was achieved based on the accounting rules in effect at the time of the securitization.

Year ended December 31, (in millions, except rates) <sup>(a)</sup>	2012		2011		2010	
	Residential mortgage <sup>(d)(e)</sup>	Commercial and other <sup>(f)(g)</sup>	Residential mortgage <sup>(d)(e)</sup>	Commercial and other <sup>(f)(g)</sup>	Residential mortgage <sup>(d)(e)</sup>	Commercial and other <sup>(f)(g)</sup>
Principal securitized	\$—	\$5,421	\$—	\$5,961	\$35	\$2,237
All cash flows during the period:						
Proceeds from new securitizations <sup>(b)</sup>	\$—	\$5,705	\$—	\$6,142	\$36	\$2,369
Servicing fees collected	662	4	755	4	968	4
Purchases of previously transferred financial assets (or the underlying collateral) <sup>(c)</sup>	222	—	772	—	321	—
Cash flows received on interests	185	163	235	178	319	143

(a) Excludes re-securitization transactions.

Proceeds from commercial mortgage securitizations were received in the form of securities. During 2012, \$5.7 billion of commercial mortgage securitizations were classified in level 2 of the fair value hierarchy. During 2011, (b) \$4.0 billion and \$2.1 billion of commercial mortgage securitizations were classified in levels 2 and 3 of the fair value hierarchy, respectively. During 2010, \$2.2 billion and \$172 million of residential and commercial mortgage securitizations were classified in levels 2 and 3 of the fair value hierarchy, respectively.

(c) Includes cash paid by the Firm to reacquire assets from off-balance sheet, nonconsolidated entities – for example, loan repurchases due to representation and warranties and servicer clean-up calls

(d) Includes prime, Alt-A, subprime, and option ARMs. Excludes sales for which the Firm did not securitize the loan (including loans sold to Ginnie Mae, Fannie Mae and Freddie Mac).

(e) There were no residential mortgage securitizations during 2012 and 2011.

(f) Includes commercial and student loan securitizations.

(g) Key assumptions used to measure retained interests originated during the year included weighted-average life (in years) of 8.8, 1.7 and 7.1 for the years ended December 31, 2012, 2011, and 2010, respectively, and weighted-average discount rate of 3.6%, 3.5% and 7.7% for the years ended December 31, 2012, 2011, and 2010,

respectively.

Loans and excess mortgage servicing rights sold to agencies and other third-party-sponsored securitization entities. In addition to the amounts reported in the securitization activity tables above, the Firm, in the normal course of business, sells originated and purchased mortgage loans and certain originated excess mortgage servicing rights on a nonrecourse basis, predominantly to Ginnie Mae, Fannie Mae and Freddie Mac (the “Agencies”). These loans and excess mortgage servicing rights are sold primarily for the purpose of securitization by the Agencies, which also provide credit enhancement of the loans and excess mortgage servicing rights through certain guarantee provisions. The Firm does not consolidate these securitization vehicles as it is not the primary beneficiary. For a limited number of loan sales, the Firm is obligated to

share a portion of the credit risk associated with the sold loans with the purchaser. See Note 29 on pages 308–315 of this Annual Report for additional information about the Firm’s loan sales- and securitization-related indemnifications. See Note 17 on pages 291–295 of this Annual Report for additional information about the impact of the Firm’s sale of certain excess mortgage servicing rights.

## Notes to consolidated financial statements

The following table summarizes the activities related to loans sold to U.S. government-sponsored agencies and third-party-sponsored securitization entities.

Year ended December 31, (in millions)	2012	2011	2010
Carrying value of loans sold <sup>(a)</sup>	\$180,097	\$150,632	\$156,615
Proceeds received from loan sales as cash	\$1,270	\$2,864	\$3,887
Proceeds from loan sales as securities <sup>(b)</sup>	176,592	145,340	149,786
Total proceeds received from loan sales <sup>(c)</sup>	\$177,862	\$148,204	\$153,673
Gains on loan sales <sup>(d)</sup>	141	133	212

(a) Predominantly to U.S. government agencies.

(b) Predominantly includes securities from U.S. government agencies that are generally sold shortly after receipt.

(c) Excludes the value of MSR retained upon the sale of loans. Gains on loan sales include the value of MSR.

(d) The carrying value of the loans accounted for at fair value approximated the proceeds received upon loan sale.

## Options to repurchase delinquent loans

In addition to the Firm's obligation to repurchase certain loans due to material breaches of representations and warranties as discussed in Note 29 on pages 308–315 of this Annual Report, the Firm also has the option to repurchase delinquent loans that it services for Ginnie Mae loan pools, as well as for other U.S. government agencies under certain arrangements. The Firm typically elects to repurchase delinquent loans from Ginnie Mae loan pools as it continues to service them and/or manage the foreclosure process in accordance with the applicable requirements, and such loans continue to be insured or guaranteed. When the Firm's repurchase option becomes exercisable, such loans must be reported on the Consolidated Balance Sheets as a loan with a corresponding liability. As of December 31, 2012 and 2011, the Firm had recorded on its Consolidated Balance Sheets \$15.6 billion and \$15.7 billion, respectively, of loans that either had been repurchased or for which the Firm had an option to repurchase. Predominately all of these amounts relate to loans that have been repurchased from Ginnie Mae loan pools. Additionally, real estate owned resulting from voluntary repurchases of loans was \$1.6 billion and \$1.0 billion as of December 31, 2012 and 2011, respectively. Substantially all of these loans and real estate owned are insured or guaranteed by U.S. government agencies and reimbursement is proceeding normally. For additional information, refer to Note 14 on pages 250–275 of this Annual Report.

## JPMorgan Chase's interest in securitized assets held at fair value

The following table outlines the key economic assumptions used to determine the fair value, as of December 31, 2012 and 2011, of certain of the Firm's retained interests in nonconsolidated VIEs (other than MSRs), that are valued using modeling techniques. The table also outlines the sensitivities of those fair values to immediate 10% and 20% adverse changes in assumptions used to determine fair value. For a discussion of MSRs, see Note 17 on pages 291–295 of this Annual Report.

	Commercial and other		
December 31, (in millions, except rates and where otherwise noted) <sup>(a)</sup>	2012	2011 <sup>(d)</sup>	
JPMorgan Chase interests in securitized assets <sup>(b)</sup>	\$1,488	\$1,585	
Weighted-average life (in years)	6.1	1.0	
Weighted-average discount rate <sup>(c)</sup>	4.1	% 59.1	%
Impact of 10% adverse change	\$(34	) \$(45	)
Impact of 20% adverse change	(65	) (76	)

The Firm's interests in prime mortgage securitizations were \$341 million and \$555 million, as of December 31, 2012 and 2011, respectively. These include retained interests in Alt-A loans and re-securitization transactions. The (a) Firm's interests in subprime mortgage securitizations were \$68 million and \$31 million, as of December 31, 2012 and 2011, respectively. Additionally, the Firm had interests in option ARM mortgage securitizations of \$23 million at December 31, 2011.

- (b) Includes certain investments acquired in the secondary market but predominantly held for investment purposes.
- (c) Incorporates the Firm's weighted-average loss assumption.
- (d) The prior period has been reclassified to conform with the current presentation.

The sensitivity analysis in the preceding table is hypothetical. Changes in fair value based on a 10% or 20% variation in assumptions generally cannot be extrapolated easily, because the relationship of the change in the assumptions to the change in fair value may not be linear. Also, in the table, the effect that a change in a particular assumption may have on the fair value is calculated without changing any other assumption. In reality, changes in one factor may result in changes in another, which might counteract or magnify the sensitivities. The above sensitivities also do not reflect risk management practices the Firm may undertake to mitigate such risks.

## Loan delinquencies and liquidation losses

The table below includes information about components of nonconsolidated securitized financial assets, in which the Firm has continuing involvement, and delinquencies as of December 31, 2012 and 2011.

As of or for the year ended December 31, (in millions)	Securitized assets		90 days past due		Liquidation losses	
	2012	2011	2012	2011	2012	2011
Securitized loans <sup>(a)</sup>						
Residential mortgage:						
Prime mortgage <sup>(b)</sup>	\$80,572	\$101,004	\$16,270	\$24,285	\$6,850	\$5,650
Subprime mortgage	31,264	35,755	10,570	14,293	3,013	3,086
Option ARMs	26,095	31,075	6,595	9,999	2,268	1,907
Commercial and other	81,834	93,336	4,077	4,836	1,265	1,101
Total loans securitized <sup>(c)</sup>	\$219,765	\$261,170	\$37,512	\$53,413	\$13,396	\$11,744

Total assets held in securitization-related SPEs were \$295.8 billion and \$340.0 billion, respectively, at December 31, 2012 and 2011. The \$219.8 billion and \$261.2 billion, respectively, of loans securitized at

(a) December 31, 2012 and 2011, excludes: \$72.0 billion and \$74.4 billion, respectively, of securitized loans in which the Firm has no continuing involvement, and \$4.0 billion and \$4.4 billion, respectively, of loan securitizations consolidated on the Firm's Consolidated Balance Sheets at December 31, 2012 and 2011.

(b) Includes Alt-A loans.

(c) Includes securitized loans that were previously recorded at fair value and classified as trading assets.

## Note 17 – Goodwill and other intangible assets

Goodwill and other intangible assets consist of the following.

December 31, (in millions)	2012	2011	2010
Goodwill	\$48,175	\$48,188	\$48,854
Mortgage servicing rights	7,614	7,223	13,649
Other intangible assets:			
Purchased credit card relationships	\$295	\$602	\$897
Other credit card-related intangibles	229	488	593
Core deposit intangibles	355	594	879
Other intangibles	1,356	1,523	1,670
Total other intangible assets	\$2,235	\$3,207	\$4,039

## Goodwill

Goodwill is recorded upon completion of a business combination as the difference between the purchase price and the fair value of the net assets acquired. Subsequent to initial recognition, goodwill is not amortized but is tested for impairment during the fourth quarter of each fiscal year, or more often if events or circumstances, such as adverse changes in the business climate, indicate there may be impairment.

The goodwill associated with each business combination is allocated to the related reporting units, which are determined based on how the Firm's businesses are managed and how they are reviewed by the Firm's Operating Committee. The following table presents goodwill attributed to the business segments.

December 31, (in millions)	2012	2011	2010
Consumer & Community Banking	\$31,048	\$30,996	\$31,018
Corporate & Investment Bank	6,895	6,944	6,958
Commercial Banking	2,863	2,864	2,866
Asset Management	6,992	7,007	7,635
Corporate/Private Equity	377	377	377
Total goodwill	\$48,175	\$48,188	\$48,854

The following table presents changes in the carrying amount of goodwill.

Year ended December 31,	2012	2011	2010
-------------------------	------	------	------



(in millions)

Balance at beginning of period <sup>(a)</sup>	\$48,188	\$48,854	\$48,357
Changes during the period from:			
Business combinations	43	97	556
Dispositions	(4	) (685	) (19
Other <sup>(b)</sup>	(52	) (78	) (40
Balance at December 31, <sup>(a)</sup>	\$48,175	\$48,188	\$48,854

(a) Reflects gross goodwill balances as the Firm has not recognized any impairment losses to date.

(b) Includes foreign currency translation adjustments and other tax-related adjustments.

The net reduction in goodwill from 2010 to 2011 was predominantly due to AM's sale of its investment in an asset manager.

#### Impairment testing

Goodwill was not impaired at December 31, 2012 or 2011, nor was any goodwill written off due to impairment during 2012, 2011 or 2010.

The goodwill impairment test is performed in two steps. In the first step, the current fair value of each reporting unit is compared with its carrying value, including goodwill. If the fair value is in excess of the carrying value (including goodwill), then the reporting unit's goodwill is considered not to be impaired. If the fair value is less than the carrying value (including goodwill), then a second step is performed. In the second step, the implied current fair value of the reporting unit's goodwill is determined by comparing the fair value of the reporting unit (as determined in step one) to the fair value of the net assets of the reporting unit, as if the reporting unit were being acquired in a business combination. The resulting implied current fair value of goodwill is then compared with the carrying value of the reporting unit's goodwill. If the carrying value of the goodwill exceeds its implied current fair value, then an impairment charge is recognized for the excess. If the

## Notes to consolidated financial statements

carrying value of goodwill is less than its implied current fair value, then no goodwill impairment is recognized. The Firm uses the reporting units' allocated equity plus goodwill capital as a proxy for the carrying amounts of equity for the reporting units in the goodwill impairment testing. Reporting unit equity is determined on a similar basis as the allocation of equity to the Firm's lines of business, which takes into consideration the capital the business segment would require if it were operating independently, incorporating sufficient capital to address regulatory capital requirements (including Basel III), economic risk measures and capital levels for similarly rated peers. Proposed line of business equity levels are incorporated into the Firm's annual budget process, which is reviewed by the Firm's Board of Directors. Allocated equity is further reviewed on a periodic basis and updated as needed.

The primary method the Firm uses to estimate the fair value of its reporting units is the income approach. The models project cash flows for the forecast period and use the perpetuity growth method to calculate terminal values. These cash flows and terminal values are then discounted using an appropriate discount rate. Projections of cash flows are based on the reporting units' earnings forecasts, which include the estimated effects of regulatory and legislative changes (including, but not limited to the Dodd-Frank Wall Street Reform and Consumer Protection Act (the "Dodd-Frank Act"), the CARD Act, and limitations on non-sufficient funds and overdraft fees), and which are reviewed with the Operating Committee of the Firm. The discount rate used for each reporting unit represents an estimate of the cost of equity for that reporting unit and is determined considering the Firm's overall estimated cost of equity (estimated using the Capital Asset Pricing Model), as adjusted for the risk characteristics specific to each reporting unit (for example, for higher levels of risk or uncertainty associated with the business or management's forecasts and assumptions). To assess the reasonableness of the discount rates used for each reporting unit management compares the discount rate to the estimated cost of equity for publicly traded institutions with similar businesses and risk characteristics. In addition, the weighted average cost of equity (aggregating the various reporting units) is compared with the Firm's overall estimated cost of equity to ensure reasonableness.

The valuations derived from the discounted cash flow models are then compared with market-based trading and transaction multiples for relevant competitors. Trading and transaction comparables are used as general indicators to assess the general reasonableness of the estimated fair values, although precise conclusions generally cannot be drawn due to the differences that naturally exist between the Firm's businesses and competitor institutions. Management also takes into consideration a comparison between the aggregate fair value of the Firm's reporting units and JPMorgan Chase's market capitalization. In evaluating this comparison, management considers several

factors, including (a) a control premium that would exist in a market transaction, (b) factors related to the level of execution risk that would exist at the firmwide level that do not exist at the reporting unit level and (c) short-term market volatility and other factors that do not directly affect the value of individual reporting units.

While no impairment of goodwill was recognized, the Firm's mortgage lending business in CCB remain at an elevated risk of goodwill impairment due to its exposure to U.S. consumer credit risk and the effects of economic, regulatory and legislative changes. The valuation of this business is particularly dependent upon economic conditions (including new unemployment claims and home prices), regulatory and legislative changes (for example, those related to residential mortgage servicing, foreclosure and loss mitigation activities), and the amount of equity capital required. In addition, the earnings or estimated cost of equity of the Firm's capital markets businesses could also be affected by regulatory or legislative changes. The assumptions used in the discounted cash flow valuation models were determined using management's best estimates. The cost of equity reflected the related risks and uncertainties, and was evaluated in comparison to relevant market peers. Deterioration in these assumptions could cause the estimated fair values of these reporting units and their associated goodwill to decline, which may result in a material impairment charge to earnings in a future period related to some portion of the associated goodwill.

#### Mortgage servicing rights

Mortgage servicing rights represent the fair value of expected future cash flows for performing servicing activities for others. The fair value considers estimated future servicing fees and ancillary revenue, offset by estimated costs to service the loans, and generally declines over time as net servicing cash flows are received, effectively amortizing the MSR asset against contractual servicing and ancillary fee income. MSRs are either purchased from third parties or recognized upon sale or securitization of mortgage loans if servicing is retained.

As permitted by U.S. GAAP, the Firm elected to account for its MSRs at fair value. The Firm treats its MSRs as a single class of servicing assets based on the availability of market inputs used to measure the fair value of its MSR asset and its treatment of MSRs as one aggregate pool for risk management purposes. The Firm estimates the fair value of MSRs using an option-adjusted spread (“OAS”) model, which projects MSR cash flows over multiple interest rate scenarios in conjunction with the Firm’s prepayment model, and then discounts these cash flows at risk-adjusted rates. The model considers portfolio characteristics, contractually specified servicing fees, prepayment assumptions, delinquency rates, costs to service, late charges and other ancillary revenue, and other economic factors. The Firm compares fair value estimates and assumptions to observable market data where available, and also considers recent market activity and actual portfolio experience.

The fair value of MSR is sensitive to changes in interest rates, including their effect on prepayment speeds. MSRs typically decrease in value when interest rates decline because declining interest rates tend to increase prepayments and therefore reduce the expected life of the net servicing cash flows that comprise the MSR asset. Conversely, securities (e.g., mortgage-backed securities), principal-only certificates and certain derivatives (i.e., those for which the Firm receives fixed-rate interest payments) increase in value when interest rates decline. JPMorgan Chase uses combinations of derivatives and securities to manage changes in the fair value of MSRs. The intent is to offset any interest-rate related changes in the fair value of MSRs with changes in the fair value of the related risk management instruments.

The following table summarizes MSR activity for the years ended December 31, 2012, 2011 and 2010.

As of or for the year ended December 31, (in millions, except where otherwise noted)	2012	2011	2010
Fair value at beginning of period	\$7,223	\$13,649	\$15,531
MSR activity			
Originations of MSRs	2,376	2,570	3,153
Purchase of MSRs	457	33	26
Disposition of MSRs	(579)	—	(407)
Changes due to modeled amortization	(1,228)	(1,910)	(2,386)
Net additions and amortization	1,026	693	386
Changes due to market interest rates	(589)	(5,392)	(2,224)
Other changes in valuation due to inputs and assumptions <sup>(a)</sup>	(46)	(1,727)	(44)
Total change in fair value of MSRs <sup>(b)</sup>	(635)	(7,119)	(2,268)
Fair value at December 31 <sup>(c)</sup>	\$7,614	\$7,223	\$13,649
Change in unrealized gains/(losses) included in income related to MSRs held at December 31	\$(635)	\$(7,119)	\$(2,268)
Contractual service fees, late fees and other ancillary fees included in income	\$3,783	\$3,977	\$4,484
Third-party mortgage loans serviced at December 31 (in billions)	\$867	\$910	\$976
Servicer advances at December 31 (in billions) <sup>(d)</sup>	\$10.9	\$11.1	\$9.9

Represents the aggregate impact of changes in model inputs and assumptions such as costs to service, home prices, (a) mortgage spreads, ancillary income, and assumptions used to derive prepayment speeds, as well as changes to the valuation models themselves.

(b) Includes changes related to commercial real estate of \$(8) million, \$(9) million and \$(1) million for the years ended December 31, 2012, 2011 and 2010, respectively.

(c) Includes \$23 million, \$31 million and \$40 million related to commercial real estate at December 31, 2012, 2011 and 2010, respectively.

Represents amounts the Firm pays as the servicer (e.g., scheduled principal and interest to a trust, taxes and insurance), which will generally be reimbursed within a short period of time after the advance from future cash

(d) flows from the trust or the underlying loans. The Firm's credit risk associated with these advances is minimal because reimbursement of the advances is senior to all cash payments to investors. In addition, the Firm maintains the right to stop payment to investors if the collateral is insufficient to cover the advance.

Includes excess mortgage servicing rights transferred to an agency-sponsored trust in exchange for stripped (e) mortgage backed securities ("SMBS"). A portion of the SMBS was acquired by third parties at the transaction date; the Firm acquired and has retained the remaining balance of those SMBS as trading assets.

During the year ended December 31, 2011, the fair value of the MSR decreased by \$6.4 billion. This decrease was predominately due to a decline in market interest rates, which resulted in a loss in fair value of \$5.4 billion. These losses were offset by gains of \$5.6 billion on derivatives used to hedge the MSR asset; these derivatives are

recognized on the Consolidated Balance Sheets separately from the MSR asset. Also contributing to the decline in fair value of the MSR asset was a \$1.7 billion decrease related to revised cost to service and ancillary income assumptions incorporated in the MSR valuation. The increased cost to service assumptions reflect the estimated impact of higher servicing costs to enhance servicing processes, particularly loan modification and foreclosure procedures, including costs to comply with Consent Orders entered into with banking regulators. The increase in the cost to service assumption contemplates significant and prolonged increases in staffing levels in the core and default servicing functions. The decreased ancillary income assumption is similarly related to a reassessment of business practices in consideration of the Consent Orders and the existing industry-wide regulatory environment, which is broadly affecting market participants.

Also in the fourth quarter of 2011, the Firm revised its OAS assumption and updated its proprietary prepayment model; these changes had generally offsetting effects. The Firm's OAS assumption is based upon capital and return requirements that the Firm believes a market participant would consider, taking into account factors such as the pending Basel III capital rules. Consequently, the OAS assumption for the Firm's portfolio increased by approximately 400 basis points and decreased the fair value of the MSR asset by approximately \$1.2 billion.

Since 2009, the Firm has continued to refine its proprietary prepayment model based on a number of market-related factors, including a downward trend in home prices, a general tightening of credit underwriting standards and the associated impact on refinancing activity. In the fourth quarter of 2011, the Firm further enhanced its proprietary prepayment model to incorporate: (i) the impact of the Home Affordable Refinance Program ("HARP") 2.0, and (ii) assumptions that will limit modeled refinancings due to the combined influences of relatively strict underwriting standards and reduced levels of expected home price appreciation. In the aggregate, these refinements increased the fair value of the MSR asset by approximately \$1.2 billion.

The decrease in the fair value of the MSR results in a lower asset value that will amortize in future periods against contractual and ancillary fee income received in future periods. While there is expected to be higher levels of noninterest expense associated with higher servicing costs

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in those future periods, there will also be less MSR amortization, which will have the effect of increasing mortgage fees and related income. The amortization of the MSR is reflected in the tables above under “Changes due to modeled amortization.”

The following table presents the components of mortgage fees and related income (including the impact of MSR risk management activities) for the years ended December 31, 2012, 2011 and 2010.

Year ended December 31, (in millions)	2012	2011	2010
Mortgage fees and related income			
Net production revenue:			
Production revenue	\$5,783	\$3,395	\$3,440
Repurchase losses	(272)	(1,347)	(2,912)
Net production revenue	5,511	2,048	528
Net mortgage servicing revenue			
Operating revenue:			
Loan servicing revenue	3,772	4,134	4,575
Changes in MSR asset fair value due to modeled amortization	(1,222)	(1,904)	(2,384)
Total operating revenue	2,550	2,230	2,191
Risk management:			
Changes in MSR asset fair value due to market interest rates	(587)	(5,390)	(2,224)
Other changes in MSR asset fair value due to inputs or assumptions in model <sup>(a)</sup>	(46)	(1,727)	(44)
Change in derivative fair value and other	1,252	5,553	3,404
Total risk management	619	(1,564)	1,136
Net mortgage servicing revenue	3,169	666	3,327
All other	7	7	15
Mortgage fees and related income	\$8,687	\$2,721	\$3,870

Represents the aggregate impact of changes in model inputs and assumptions such as costs to service, home prices, (a) mortgage spreads, ancillary income, and assumptions used to derive prepayment speeds, as well as changes to the valuation models themselves.

The table below outlines the key economic assumptions used to determine the fair value of the Firm’s MSRs at December 31, 2012 and 2011, and outlines the sensitivities of those fair values to immediate adverse changes in those assumptions, as defined below.

December 31, (in millions, except rates)	2012	2011
Weighted-average prepayment speed assumption (“CPR”)	13.04	18.07
Impact on fair value of 10% adverse change	\$(517)	\$(585)
Impact on fair value of 20% adverse change	(1,009)	(1,118)
Weighted-average option adjusted spread	7.61	7.83
Impact on fair value of 100 basis points adverse change	\$(306)	\$(269)
Impact on fair value of 200 basis points adverse change	(591)	(518)

CPR: Constant prepayment rate.

The sensitivity analysis in the preceding table is hypothetical and should be used with caution. Changes in fair value based on variation in assumptions generally cannot be easily extrapolated, because the relationship of the change in the assumptions to the change in fair value are often highly inter-related and may not be linear. In this table, the effect that a change in a particular assumption may have on the fair value is calculated without changing any other assumption. In reality, changes in one factor may result in changes in another, which would either magnify or counteract the impact of the initial change.



### Other intangible assets

Other intangible assets are recorded at their fair value upon completion of a business combination or certain other transactions, and generally represent the value of customer relationships or arrangements. Subsequently, the Firm's intangible assets with finite lives, including core deposit intangibles, purchased credit card relationships, and other intangible assets, are amortized over their useful lives in a manner that best reflects the economic benefits of the intangible asset. The \$972 million decrease in other intangible assets during 2012 was due to \$957 million in amortization, which included a \$214 million impairment write-off of purchased credit card relationships and other credit card-related intangibles, as projected cash flows associated with a non-strategic credit card relationship within CCB had deteriorated.

The components of credit card relationships, core deposits and other intangible assets were as follows.

December 31, (in millions)	2012			2011		
	Gross amount <sup>(a)</sup>	Accumulated amortization <sup>(a)</sup>	Net carrying value	Gross amount	Accumulated amortization	Net carrying value
Purchased credit card relationships	\$3,775	\$ 3,480	\$295	\$3,826	\$3,224	\$602
Other credit card-related intangibles	850	621	229	844	356	488
Core deposit intangibles	4,133	3,778	355	4,133	3,539	594
Other intangibles <sup>(b)</sup>	2,390	1,034	1,356	2,467	944	1,523

(a) The decrease in the gross amount and accumulated amortization from December 31, 2011, was due to the removal of fully amortized assets.

(b) Includes intangible assets of approximately \$600 million consisting primarily of asset management advisory contracts, which were determined to have an indefinite life and are not amortized.

### Amortization expense

The following table presents amortization expense related to credit card relationships, core deposits and other intangible assets.

December 31, (in millions)	2012	2011	2010
Purchased credit card relationships	\$309	\$295	\$355
Other credit card-related intangibles	265	106	111
Core deposit intangibles	239	285	328
Other intangibles	144	162	142
Total amortization expense	\$957	\$848	\$936

### Future amortization expense

The following table presents estimated future amortization expense related to credit card relationships, core deposits and other intangible assets at December 31, 2012.

Year ended December 31, (in millions)	Purchased credit card relationships	Other credit card-related intangibles	Core deposit intangibles	Other intangibles	Total
2013	\$192	\$57	\$196	\$132	\$577
2014	91	49	102	116	358
2015	7	39	26	96	168
2016	4	34	14	89	141
2017	1	29	13	88	131

### Impairment testing

The Firm's intangible assets are tested for impairment annually or more often if events or changes in circumstances indicate that the asset might be impaired.

The impairment test for a finite-lived intangible asset compares the undiscounted cash flows associated with the use or disposition of the intangible asset to its carrying value. If the sum of the undiscounted cash flows exceeds its carrying value, then no impairment charge is recorded. If the sum of the undiscounted cash flows is less than its carrying value,



then an impairment charge is recognized in amortization expense to the extent the carrying amount of the asset exceeds its fair value.

The impairment test for indefinite-lived intangible assets compares the fair value of the intangible asset to its carrying amount. If the carrying value exceeds the fair value, then an impairment charge is recognized in amortization expense for the difference.

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## Note 18 – Premises and equipment

Premises and equipment, including leasehold improvements, are carried at cost less accumulated depreciation and amortization. JPMorgan Chase computes depreciation using the straight-line method over the estimated useful life of an asset. For leasehold improvements, the Firm uses the straight-line method computed over the lesser of the remaining term of the leased facility or the estimated useful life of the leased asset. JPMorgan Chase has recorded immaterial asset retirement obligations related to asbestos remediation in those cases where it has sufficient information to estimate the obligations' fair value.

JPMorgan Chase capitalizes certain costs associated with the acquisition or development of internal-use software. Once the software is ready for its intended use, these costs are amortized on a straight-line basis over the software's expected useful life and reviewed for impairment on an ongoing basis.

## Note 19 – Deposits

At December 31, 2012 and 2011, noninterest-bearing and interest-bearing deposits were as follows.

December 31, (in millions)	2012	2011
U.S. offices		
Noninterest-bearing	\$380,320	\$346,670
Interest-bearing		
Demand <sup>(a)</sup>	53,980	47,075
Savings <sup>(b)</sup>	407,710	375,051
Time (included \$5,140 and \$3,861 at fair value) <sup>(c)</sup>	90,416	82,738
Total interest-bearing deposits	552,106	504,864
Total deposits in U.S. offices	932,426	851,534
Non-U.S. offices		
Noninterest-bearing	17,845	18,790
Interest-bearing		
Demand	195,395	188,202
Savings	1,004	687
Time (included \$593 and \$1,072 at fair value) <sup>(c)</sup>	46,923	68,593
Total interest-bearing deposits	243,322	257,482
Total deposits in non-U.S. offices	261,167	276,272
Total deposits	\$1,193,593	\$1,127,806

(a) Includes Negotiable Order of Withdrawal (“NOW”) accounts, and certain trust accounts.

(b) Includes Money Market Deposit Accounts (“MMDAs”).

(c) Includes structured notes classified as deposits for which the fair value option has been elected. For further discussion, see Note 4 on pages 214–216 of this Annual Report.

At December 31, 2012 and 2011, time deposits in denominations of \$100,000 or more were as follows.

December 31, (in millions)	2012	2011	
U.S. offices	\$70,008	\$57,802	
Non-U.S. offices	46,890	60,066	(a)
Total	\$116,898	\$117,868	

(a) The prior period balance has been revised.

At December 31, 2012, the maturities of interest-bearing time deposits were as follows.

December 31, 2012 (in millions)	U.S.	Non-U.S.	Total
2013	\$74,469	\$45,731	\$120,200
2014	3,792	795	4,587
2015	3,374	34	3,408
2016	4,566	188	4,754
2017	1,195	110	1,305

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After 5 years	3,020	65	3,085
Total	\$90,416	\$46,923	\$137,339

Note 20 – Accounts payable and other liabilities

The following table details the components of accounts payable and other liabilities.

December 31, (in millions)	2012	2011
Brokerage payables <sup>(a)</sup>	\$108,398	\$121,353
Accounts payable and other liabilities <sup>(b)</sup>	86,842	81,542
Total	\$195,240	\$202,895

(a) Includes payables to customers, brokers, dealers and clearing organizations, and securities fails.

(b) Includes \$36 million and \$51 million accounted for at fair value at December 31, 2012 and 2011, respectively.

## Note 21 – Long-term debt

JPMorgan Chase issues long-term debt denominated in various currencies, although predominantly U.S. dollars, with both fixed and variable interest rates. Included in senior and subordinated debt below are various equity-linked or other indexed instruments, which the Firm has elected to measure at fair value. Changes in fair value are recorded in principal transactions revenue in the Consolidated Statements of Income. The following table is a summary of long-term debt carrying values (including unamortized original issue discount, valuation adjustments and fair value adjustments, where applicable) by remaining contractual maturity as of December 31, 2012.

By remaining maturity at December 31,		2012			2011	
(in millions, except rates)		Under 1 year	1-5 years	After 5 years	Total	Total
<b>Parent company</b>						
Senior debt:	Fixed rate <sup>(a)</sup>	\$6,876	\$47,101	\$45,739	\$99,716	\$96,478
	Variable rate <sup>(b)</sup>	10,049	22,706	6,010	38,765	55,779
	Interest rates <sup>(c)</sup>	0.43-5.38%	0.35-7.00%	0.26-7.25%	0.26-7.25%	0.32-7.25%
Subordinated debt:	Fixed rate	\$2,421	\$8,259	\$5,632	\$16,312	\$19,167
	Variable rate	—	3,431	9	3,440	1,954
	Interest rates <sup>(c)</sup>	5.25-5.75%	0.61-6.13%	3.88-8.53%	0.61-8.53%	1.09-8.53%
	Subtotal	\$19,346	\$81,497	\$57,390	\$158,233	\$173,378
<b>Subsidiaries</b>						
FHLB advances:	Fixed rate	\$1,510	\$3,040	\$162	\$4,712	\$4,738
	Variable rate	2,321	23,012	12,000	37,333	13,085
	Interest rates <sup>(c)</sup>	0.30-1.15%	0.30-2.04%	0.39-0.47%	0.30-2.04%	0.32-2.04%
Senior debt:	Fixed rate	\$582	\$2,397	\$3,782	\$6,761	\$6,546
	Variable rate	7,577	11,390	2,640	21,607	28,257
	Interest rates <sup>(c)</sup>	0.33-2.10%	0.16-3.75%	1.00-7.28%	0.16-7.28%	0.13-14.21%
Subordinated debt:	Fixed rate	\$—	\$5,651	\$1,862	\$7,513	\$8,755
	Variable rate	—	2,466	—	2,466	1,150
	Interest rates <sup>(c)</sup>	— %	0.64-6.00%	4.38-8.25%	0.64-8.25%	0.87-8.25%
Junior subordinated debt:	Subtotal	\$11,990	\$47,956	\$20,446	\$80,392	\$62,531
	Fixed rate	\$—	\$—	\$7,131	\$7,131	\$15,784
	Variable rate	—	—	3,268	3,268	5,082
	Interest rates <sup>(c)</sup>	— %	— %	0.81-8.75%	0.81-8.75%	0.93-8.75%
	Subtotal	\$—	\$—	\$10,399	\$10,399	\$20,866
<b>Total long-term debt<sup>(d)(e)(f)</sup></b>		<b>\$31,336</b>	<b>\$129,453</b>	<b>\$88,235</b>	<b>\$249,024</b>	<b>\$256,775<sup>(h)(i)</sup></b>

## Long-term beneficial interests:

Fixed rate	\$ 1,629	\$ 5,502	\$ 3,262	\$ 10,393	\$ 6,261
Variable rate	10,226	10,551	3,802	24,579	33,473
Interest rates	0.27-5.40%	0.23-5.63%	0.32-13.91%	0.23-13.91%	0.02-11.00%
Total long-term beneficial interests <sup>(g)</sup>	\$ 11,855	\$ 16,053	\$ 7,064	\$ 34,972	\$ 39,734

Included \$8.4 billion as of December 31, 2011, that was guaranteed by the FDIC under the Temporary Liquidity (a) Guarantee (“TLG”) Program. All long-term debt guaranteed under the TLG Program matured prior to December 31, 2012.

(b) Included \$11.9 billion as of December 31, 2011 that was guaranteed by the FDIC under the TLG Program. All long-term debt guaranteed under the TLG Program matured prior to December 31, 2012.

The interest rates shown are the range of contractual rates in effect at year-end, including non-U.S. dollar fixed- and variable-rate issuances, which excludes the effects of the associated derivative instruments used in hedge accounting relationships, if applicable. The use of these derivative instruments modifies the Firm’s exposure to the (c) contractual interest rates disclosed in the table above. Including the effects of the hedge accounting derivatives, the range of modified rates in effect at December 31, 2012, for total long-term debt was (0.76)% to 7.86%, versus the contractual range of 0.16% to 8.75% presented in the table above. The interest rate ranges shown exclude structured notes accounted for at fair value.

Included long-term debt of \$48.0 billion and \$23.8 billion secured by assets totaling \$112.8 billion and \$89.4 (d) billion at December 31, 2012 and 2011, respectively. The amount of long-term debt secured by assets does not include amounts related to hybrid instruments.

(e) Included \$30.8 billion and \$34.7 billion of outstanding structured notes accounted for at fair value at December 31, 2012 and 2011, respectively.

Included \$1.6 billion and \$2.1 billion of outstanding zero-coupon notes at December 31, 2012 and 2011, (f) respectively. The aggregate principal amount of these notes at their respective maturities was \$3.0 billion and \$5.0 billion, respectively.

Included on the Consolidated Balance Sheets in beneficial interests issued by consolidated VIEs. Also included (g) \$1.2 billion and \$1.3 billion of outstanding structured notes accounted for at fair value at December 31, 2012 and 2011, respectively. Excluded short-term commercial paper and other short-term beneficial interests of \$28.2 billion and \$26.2 billion at December 31, 2012 and 2011, respectively.

(h) At December 31, 2012, long-term debt in the aggregate of \$22.1 billion was redeemable at the option of JPMorgan Chase, in whole or in part, prior to maturity, based on the terms specified in the respective notes.

(i) The aggregate carrying values of debt that matures in each of the five years subsequent to 2012 is \$31.3 billion in 2013, \$35.8 billion in 2014, \$32.0 billion in 2015, \$28.0 billion in 2016 and \$33.6 billion in 2017.

## Notes to consolidated financial statements

The weighted-average contractual interest rates for total long-term debt excluding structured notes accounted for at fair value were 3.09% and 3.57% as of December 31, 2012 and 2011, respectively. In order to modify exposure to interest rate and currency exchange rate movements, JPMorgan Chase utilizes derivative instruments, primarily interest rate and cross-currency interest rate swaps, in conjunction with some of its debt issues. The use of these instruments modifies the Firm's interest expense on the associated debt. The modified weighted-average interest rates for total long-term debt, including the effects of related derivative instruments, were 2.33% and 2.67% as of December 31, 2012 and 2011, respectively.

The Parent Company has guaranteed certain long-term debt of its subsidiaries, including both long-term debt and structured notes sold as part of the Firm's market-making activities. These guarantees rank on parity with all of the Firm's other unsecured and unsubordinated indebtedness. Guaranteed liabilities were \$1.7 billion and \$3.0 billion at December 31, 2012 and 2011, respectively.

The Firm's unsecured debt does not contain requirements that would call for an acceleration of payments, maturities or changes in the structure of the existing debt, provide any limitations on future borrowings or require additional collateral, based on unfavorable changes in the Firm's credit ratings, financial ratios, earnings or stock price.

Junior subordinated deferrable interest debentures held by trusts that issued guaranteed capital debt securities  
On July 12, 2012, JPMorgan Chase redeemed \$9.0 billion, or 100% of the liquidation amount, of the following guaranteed capital debt securities ("trust preferred securities"): JPMorgan Chase Capital XV, JPMorgan Chase Capital XVII, JPMorgan Chase Capital XVIII, JPMorgan Chase Capital XX, JPMorgan Chase Capital XXII, JPMorgan Chase Capital XXV, JPMorgan Chase Capital XXVI, JPMorgan Chase Capital XXVII, and JPMorgan Chase Capital XXVIII. Other income for the year ended December 31, 2012, reflected \$888 million of pretax extinguishment gains related to adjustments applied to the cost basis of the redeemed trust preferred securities during the period they were in a qualified hedge accounting relationship.

At December 31, 2012, the Firm had outstanding 17 wholly-owned Delaware statutory business trusts ("issuer trusts") that had issued guaranteed capital debt securities.

The junior subordinated deferrable interest debentures issued by the Firm to the issuer trusts, totaling \$10.4 billion and \$20.9 billion at December 31, 2012 and 2011, respectively, were reflected in the Firm's Consolidated Balance Sheets in long-term debt, and in the table on the preceding page under the caption "Junior subordinated debt" (i.e., trust preferred securities). The Firm also records the common capital securities issued by the issuer trusts in other assets in its Consolidated Balance Sheets at December 31, 2012 and 2011. The debentures issued to the issuer trusts by the Firm, less the common capital securities of the issuer trusts, qualified as Tier 1 capital as of December 31, 2012.

The following is a summary of the outstanding trust preferred securities, including unamortized original issue discount, issued by each trust, and the junior subordinated deferrable interest debenture issued to each trust, as of December 31, 2012.

December 31, 2012 (in millions)	Amount of trust preferred securities issued by trust <sup>(a)</sup>	Principal amount of debenture issued to trust <sup>(b)</sup>	Issue date	Stated maturity of trust preferred securities and debentures	Earliest redemption date	Interest rate of trust preferred securities and debentures	Interest payment/distribution dates
Bank One Capital III	\$474	\$757	2000	2030	Any time	8.75%	Semiannually
Bank One Capital VI	100	105	2001	2031	Any time	7.20%	Quarterly
Chase Capital II	482	498	1997	2027	Any time	LIBOR + 0.50%	Quarterly
Chase Capital III	296	305	1997	2027	Any time	LIBOR + 0.55%	Quarterly
Chase Capital VI	241	249	1998	2028	Any time	LIBOR + 0.625%	Quarterly
First Chicago NBD Capital I	249	256	1997	2027	Any time	LIBOR + 0.55%	Quarterly
J.P. Morgan Chase Capital X	1,000	1,018	2002	2032	Any time	7.00%	Quarterly
J.P. Morgan Chase Capital XI	1,075	1,013	2003	2033	Any time	5.88%	Quarterly
J.P. Morgan Chase Capital XII	400	392	2003	2033	Any time	6.25%	Quarterly
JPMorgan Chase Capital XIII	465	480	2004	2034	2014	LIBOR + 0.95%	Quarterly
JPMorgan Chase Capital XIV	600	588	2004	2034	Any time	6.20%	Quarterly
JPMorgan Chase Capital XVI	500	494	2005	2035	Any time	6.35%	Quarterly
JPMorgan Chase Capital XIX	563	564	2006	2036	Any time	6.63%	Quarterly
JPMorgan Chase Capital XXI	836	837	2007	2037	Any time	LIBOR + 0.95%	Quarterly
JPMorgan Chase Capital XXIII	643	643	2007	2047	Any time	LIBOR + 1.00%	Quarterly
JPMorgan Chase Capital XXIV	700	700	2007	2047	Any time	6.88%	Quarterly
JPMorgan Chase Capital XXIX	1,500	1,500	2010	2040	2015	6.70%	Quarterly
Total	\$10,124	\$10,399					

(a) Represents the amount of trust preferred securities issued to the public by each trust, including unamortized original issue discount.

(b) Represents the principal amount of JPMorgan Chase debentures issued to each trust, including unamortized original-issue discount. The principal amount of debentures issued to the trusts includes the impact of hedging and

purchase accounting fair value adjustments that were recorded on the Firm's Consolidated Financial Statements.



## Notes to consolidated financial statements

## Note 22 – Preferred stock

At December 31, 2012 and 2011, JPMorgan Chase was authorized to issue 200 million shares of preferred stock, in one or more series, with a par value of \$1 per share.

In the event of a liquidation or dissolution of the Firm, JPMorgan Chase's preferred stock then outstanding takes precedence over the Firm's common stock for the payment of dividends and the distribution of assets.

The following is a summary of JPMorgan Chase's preferred stock outstanding as of December 31, 2012 and 2011.

	Contractual rate in effect at December 31, 2012	Shares at December 31, <sup>(a)</sup>		Carrying value (in millions) at December 31,		Earliest redemption date	Share value and redemption price per share <sup>(b)</sup>
		2012	2011	2012	2011		
Fixed-to-Floating Rate							
Non-Cumulative Perpetual Preferred Stock, Series I 8.625%	7.900	% 600,000	600,000	\$6,000	\$6,000	4/30/2018	\$10,000
Non-Cumulative Perpetual Preferred Stock, Series J 5.50%	8.625	% 180,000	180,000	1,800	1,800	9/1/2013	10,000
Non-Cumulative Perpetual Preferred Stock, Series O	5.500	% 125,750	—	1,258	—	9/1/2017	10,000
Total preferred stock		905,750	780,000	\$9,058	\$7,800		

(a) Represented by depositary shares.

(b) The redemption price includes the amount shown in the table plus any accrued but unpaid dividends.

Dividends on the Fixed-to-Floating Rate Non-Cumulative Perpetual Preferred Stock, Series I shares are payable semiannually at a fixed annual dividend rate of 7.90% through April 2018, and then become payable quarterly at an annual dividend rate of three-month LIBOR plus 3.47%. Dividends on the 8.625% Non-Cumulative Preferred Stock, Series J and on the 5.50% Non-Cumulative Preferred Stock, Series O are payable quarterly. The 5.50% Non-Cumulative was issued in August 2012.

On August 20, 2010, the Firm redeemed all of the outstanding shares of its 6.15% Cumulative Preferred Stock, Series E; 5.72% Cumulative Preferred Stock, Series F; and 5.49% Cumulative Preferred Stock, Series G at their stated redemption value.

## Redemption rights

Each series of the Firm's preferred stock may be redeemed on any dividend payment date on or after the earliest redemption date for that series. The Series O preferred stock may also be redeemed following a capital treatment event, as described in the terms of that series. Any redemption of the Firm's preferred stock is subject to non-objection from the Federal Reserve.

## Note 23 – Common stock

At December 31, 2012 and 2011, JPMorgan Chase was authorized to issue 9.0 billion shares of common stock with a par value of \$1 per share.

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Common shares issued (newly issued or distributed from treasury) by JPMorgan Chase during the years ended December 31, 2012, 2011 and 2010 were as follows.

Year ended December 31, (in millions)	2012	2011	2010	
Issued – balance at January 1	4,104.9	4,104.9	4,104.9	
New open market issuances	—	—	—	
Total issued – balance at December 31	4,104.9	4,104.9	4,104.9	
Treasury – balance at January 1	(332.2	)(194.6	)(162.9	)
Purchase of treasury stock	(33.5	)(226.9	)(77.9	)
Share repurchases related to employee stock-based awards <sup>(a)</sup>	(0.2	)(0.1	)(0.1	)
Issued from treasury:				
Employee benefits and compensation plans	63.7	88.3	45.3	
Employee stock purchase plans	1.3	1.1	1.0	
Total issued from treasury	65.0	89.4	46.3	
Total treasury – balance at December 31	(300.9	)(332.2	)(194.6	)
Outstanding	3,804.0	3,772.7	3,910.3	

(a) Participants in the Firm's stock-based incentive plans may have shares withheld to cover income taxes.

Pursuant to the U.S. Treasury's Capital Purchase Program, the Firm issued to the U.S. Treasury a Warrant to purchase up to 88,401,697 shares of the Firm's common stock, at an exercise price of \$42.42 per share, subject to certain antidilution and other adjustments. The U.S. Treasury exchanged the Warrant for 88,401,697 warrants, each of which was a warrant to purchase a share of the Firm's common stock at an exercise price of \$42.42 per share and, on December 11, 2009, sold the warrants in a secondary public offering for \$950 million. The warrants are exercisable, in whole or in part, at any time and from time to time until October 28, 2018. As part of its common equity repurchase program discussed below, during 2012 and 2011, the Firm repurchased 18,471,300 and 10,167,698 warrants, for \$238 million and \$122 million, respectively, which resulted in adjustments to capital surplus. The Firm did not repurchase any of the warrants during 2010. At December 31, 2012 and 2011, respectively, 59,762,699 and 78,233,999 warrants remained outstanding.

On March 18, 2011, the Board of Directors approved a \$15.0 billion common equity (i.e., common stock and warrants) repurchase program, of which \$8.95 billion was authorized for repurchase in 2011. On March 13, 2012, the Board of Directors authorized a \$15.0 billion common equity repurchase program, of which up to \$12.0 billion was approved for repurchase in 2012 and up to an additional \$3.0 billion is approved for repurchases through the end of the first quarter of 2013. Following the voluntary cessation of its common equity repurchase program in May 2012, the Firm resubmitted its capital plan to the Federal Reserve under the 2012 CCAR process in August 2012. Pursuant to a non-objection received from the Federal Reserve on November 5, 2012, with respect to the resubmitted capital plan, the Firm is authorized to repurchase up to \$3.0 billion of common equity in the first quarter of 2013. During 2012, 2011 and 2010, the Firm repurchased (on a trade-date basis) 31 million, 229 million, and 78 million shares of common stock, for \$1.3 billion, \$8.8 billion and \$3.0 billion, respectively. For additional information regarding repurchases of the Firm's equity securities, see Part II, Item 5: Market for registrant's common equity, related stockholder matters and issuer purchases of equity securities, on pages 22–23 of JPMorgan Chase's 2012 Form 10-K. The Firm may, from time to time, enter into written trading plans under Rule 10b5-1 of the Securities Exchange Act of 1934 to facilitate repurchases in accordance with the repurchase program. A Rule 10b5-1 repurchase plan allows the Firm to repurchase its equity during periods when it would not otherwise be repurchasing common equity – for example, during internal trading “black-out periods.” All purchases under a Rule 10b5-1 plan must be made according to a predefined plan established when the Firm is not aware of material nonpublic information.

As of December 31, 2012, approximately 325 million unissued shares of common stock were reserved for issuance under various employee incentive, compensation, option and stock purchase plans, director compensation plans, and the warrants sold by the U.S. Treasury as discussed above.

#### Note 24 – Earnings per share

Earnings per share (“EPS”) is calculated under the two-class method under which all earnings (distributed and undistributed) are allocated to each class of common stock and participating securities based on their respective rights to receive dividends. JPMorgan Chase grants restricted stock and RSUs to certain employees under its stock-based compensation programs, which entitle recipients to receive nonforfeitable dividends during the vesting period on a basis equivalent to the dividends paid to holders of common stock; these unvested awards meet the definition of participating securities. Options issued under employee benefit plans that have an antidilutive effect are excluded from the computation of diluted EPS.

The following table presents the calculation of basic and diluted EPS for the years ended December 31, 2012, 2011 and 2010.

Year ended December 31, (in millions, except per share amounts)	2012	2011	2010
Basic earnings per share			
Net income	\$21,284	\$18,976	\$17,370
Less: Preferred stock dividends	653	629	642
Net income applicable to common equity	20,631	18,347	16,728
	754	779	964

Less: Dividends and undistributed earnings allocated to participating securities

Net income applicable to common stockholders	\$19,877	\$17,568	\$15,764
Total weighted-average basic shares outstanding	3,809.4	3,900.4	3,956.3
Net income per share	\$5.22	\$4.50	\$3.98

Diluted earnings per share

Net income applicable to common stockholders	\$19,877	\$17,568	\$15,764
Total weighted-average basic shares outstanding	3,809.4	3,900.4	3,956.3
Add: Employee stock options, SARs and warrants <sup>(a)</sup>	12.8	19.9	20.6
Total weighted-average diluted shares outstanding <sup>(b)</sup>	3,822.2	3,920.3	3,976.9
Net income per share	\$5.20	\$4.48	\$3.96

Excluded from the computation of diluted EPS (due to the antidilutive effect) were options issued under employee benefit plans and the warrants originally issued in 2008 under the U.S. Treasury's Capital Purchase Program to (a) purchase shares of the Firm's common stock. The aggregate number of shares issuable upon the exercise of such options and warrants was 148 million, 133 million and 233 million for the full years ended December 31, 2012, 2011 and 2010 respectively.

(b) Participating securities were included in the calculation of diluted EPS using the two-class method, as this computation was more dilutive than the calculation using the treasury stock method.

## Notes to consolidated financial statements

## Note 25 – Accumulated other comprehensive income/(loss)

AOCI includes the after-tax change in unrealized gains and losses on AFS securities, foreign currency translation adjustments (including the impact of related derivatives), cash flow hedging activities, and net loss and prior service costs/(credit) related to the Firm's defined benefit pension and OPEB plans.

Year ended December 31, (in millions)	Unrealized gains/(losses) on AFS securities <sup>(b)</sup>	Translation adjustments, net of hedges	Cash flow hedges	Defined benefit pension and OPEB plans	Accumulated other comprehensive income/(loss)
Balance at December 31, 2009	\$2,032	\$(16 )	\$181	\$(2,288 )	\$ (91 )
Cumulative effect of changes in accounting principles <sup>(a)</sup>	(144 )	—	—	—	(144 )
Net change	610 <sup>(c)</sup>	269	25	332	1,236
Balance at December 31, 2010	\$2,498 <sup>(d)</sup>	\$253	\$206	\$(1,956 )	\$ 1,001
Net change	1,067 <sup>(e)</sup>	(279 )	(155 )	(690 )	(57 )
Balance at December 31, 2011	\$3,565 <sup>(d)</sup>	\$(26 )	\$51	\$(2,646 )	\$ 944
Net change	3,303 <sup>(f)</sup>	(69 )	69	(145 )	3,158
Balance at December 31, 2012	\$6,868 <sup>(d)</sup>	\$(95 )	\$120	\$(2,791 )	\$ 4,102

Reflects the effect of the adoption of accounting guidance related to the consolidation of VIEs and to embedded credit derivatives in beneficial interests in securitized financial assets. AOCI decreased by \$129 million due to the adoption of the accounting guidance related to VIEs, as a result of the reversal of the fair value adjustments taken (a) on retained AFS securities that were eliminated in consolidation; for further discussion see Note 16 on pages 280–291 of this Annual Report. AOCI decreased by \$15 million due to the adoption of guidance related to credit derivatives embedded in certain of the Firm's AFS securities; for further discussion see Note 6 on pages 218–227 of this Annual Report.

(b) Represents the after-tax difference between the fair value and amortized cost of securities accounted for as AFS.

The net change during 2010 was due primarily to the narrowing of spreads on commercial and non-agency MBS as (c) well as on collateralized loan obligations; also reflects increased market value on pass-through MBS due to narrowing of spreads and other market factors.

Included after-tax unrealized losses not related to credit on debt securities for which credit losses have been (d) recognized in income of \$(56) million and \$(81) million at December 31, 2011 and 2010, respectively. There were no such losses at December 31, 2012.

The net change for 2011 was due primarily to increased market value on agency MBS and municipal securities, (e) partially offset by the widening of spreads on non-U.S. corporate debt and the realization of gains due to portfolio repositioning.

(f) The net change for 2012 was predominantly driven by increased market value on non-U.S. residential MBS, corporate debt securities and obligations of U.S. states and municipalities, partially offset by realized gains.

The following table presents the before- and after-tax changes in the components of other comprehensive income/(loss).

Year ended December 31, (in millions)	2012		2011		2010		Tax effect	After-tax	
	Pretax	Tax effect	After-tax	Pretax	Tax effect	After-tax			
Unrealized gains/(losses) on AFS securities:									
Net unrealized gains/(losses) arising during the period	\$7,521	\$(2,930)	\$4,591	\$3,361	\$(1,322)	\$2,039	\$3,982	\$(1,540)	\$2,442
Reclassification adjustment for realized (gains)/losses included in net income	(2,110 )	822	(1,288 )	(1,593 )	621	(972 )	(2,982 )	1,150	(1,832 )
Net change	5,411	(2,108 )	3,303	1,768	(701 )	1,067	1,000	(390 )	610

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Translation adjustments:															
Translation	(26	)	8	(18	)	(672	)	255	(417	)	402	(139	)	263	
Hedges	(82	)	31	(51	)	226	(88	)	138	11	(5	)	6		
Net change	(108	)	39	(69	)	(446	)	167	(279	)	413	(144	)	269	
Cash flow hedges:															
Net unrealized gains/(losses) arising during the period	141	(55	)	86	50	(19	)	31	247	(96	)	151			
Reclassification adjustment for realized (gains)/losses included in net income	(28	)	11	(17	)	(301	)	115	(186	)	(206	)	80	(126	)
Net change	113	(44	)	69	(251	)	96	(155	)	41	(16	)	25		
Defined benefit pension and OPEB plans:															
Prior service credits arising during the period	6	(2	)	4	—	—	—	10	(4	)	6				
Net gains/(losses) arising during the period	(537	)	228	(309	)	(1,290	)	502	(788	)	262	(84	)	178	
Reclassification adjustments included in net income:															
Amortization of net loss	324	(126	)	198	214	(83	)	131	280	(112	)	168			
Prior service costs/(credits)	(41	)	16	(25	)	(52	)	20	(32	)	(57	)	22	(35	)
Settlement gain/(loss)	—	—	—	—	—	—	—	1	—	—	1				
Foreign exchange and other	(21	)	8	(13	)	(1	)	—	(1	)	22	(8	)	14	
Net change	(269	)	124	(145	)	(1,129	)	439	(690	)	518	(186	)	332	
Total other comprehensive income/(loss)	\$5,147	\$(1,989)	\$3,158	\$(58	)	\$1	\$(57	)	\$1,972	\$(736	)	\$1,236			

## Note 26 – Income taxes

JPMorgan Chase and its eligible subsidiaries file a consolidated U.S. federal income tax return. JPMorgan Chase uses the asset and liability method to provide income taxes on all transactions recorded in the Consolidated Financial Statements. This method requires that income taxes reflect the expected future tax consequences of temporary differences between the carrying amounts of assets or liabilities for book and tax purposes. Accordingly, a deferred tax asset or liability for each temporary difference is determined based on the tax rates that the Firm expects to be in effect when the underlying items of income and expense are realized. JPMorgan Chase's expense for income taxes includes the current and deferred portions of that expense. A valuation allowance is established to reduce deferred tax assets to the amount the Firm expects to realize.

Due to the inherent complexities arising from the nature of the Firm's businesses, and from conducting business and being taxed in a substantial number of jurisdictions, significant judgments and estimates are required to be made. Agreement of tax liabilities between JPMorgan Chase and the many tax jurisdictions in which the Firm files tax returns may not be finalized for several years. Thus, the Firm's final tax-related assets and liabilities may ultimately be different from those currently reported.

The components of income tax expense/(benefit) included in the Consolidated Statements of Income were as follows for each of the years ended December 31, 2012, 2011, and 2010.

Income tax expense/(benefit) Year ended December 31, (in millions)	2012	2011	2010
Current income tax expense			
U.S. federal	\$3,225	\$3,719	\$4,001
Non-U.S.	1,782	1,183	2,712
U.S. state and local	1,496	1,178	1,744
Total current income tax expense	6,503	6,080	8,457
Deferred income tax expense/(benefit)			
U.S. federal	2,238	2,109	(753)
Non-U.S.	(327)	) 102	169
U.S. state and local	(781)	) (518)	) (384)
Total deferred income tax expense/(benefit)	1,130	1,693	(968)
Total income tax expense	\$7,633	\$7,773	\$7,489

Total income tax expense includes \$200 million, \$76 million and \$485 million of tax benefits recorded in 2012, 2011, and 2010, respectively, as a result of tax audit resolutions.

The preceding table does not reflect the tax effect of certain items that are recorded each period directly in stockholders' equity and certain tax benefits associated with the Firm's employee stock-based compensation plans. The tax effect of all items recorded directly to stockholders' equity resulted in a decrease of \$1.9 billion in 2012, and increases of \$927 million and \$1.8 billion in 2011 and 2010, respectively.

U.S. federal income taxes have not been provided on the undistributed earnings of certain non-U.S. subsidiaries, to the extent that such earnings have been reinvested abroad for an indefinite period of time. During 2012, as part of JPMorgan Chase's ongoing review of the business requirements and capital needs of certain of its non-U.S. subsidiaries and their associated U.S. parent, the Firm determined that the undistributed earnings of certain of its subsidiaries would no longer be indefinitely reinvested. This determination resulted in the establishment of deferred tax liabilities and the recognition of an income tax expense of \$80 million associated with prior years' undistributed earnings. Based on JPMorgan Chase's ongoing review of the business requirements and capital needs of its non-U.S. subsidiaries, combined with the formation of specific strategies and steps taken to fulfill these requirements and needs, the Firm has determined that the undistributed earnings of certain of its subsidiaries would be indefinitely reinvested to fund current and future growth of the related businesses. As management does not intend to use the earnings of these subsidiaries as a source of funding for its U.S. operations, such earnings will not be distributed to the U.S. in the foreseeable future. For 2012, pretax earnings of approximately \$3.1 billion were generated and will be indefinitely

reinvested in these subsidiaries. At December 31, 2012, the cumulative amount of undistributed pretax earnings in these subsidiaries approximated \$25.1 billion. If the Firm were to record a deferred tax liability associated with these undistributed earnings, the amount would be approximately \$5.7 billion at December 31, 2012.

Tax expense applicable to securities gains and losses for the years 2012, 2011 and 2010 was \$822 million, \$617 million, and \$1.1 billion, respectively.



## Notes to consolidated financial statements

A reconciliation of the applicable statutory U.S. income tax rate to the effective tax rate for each of the years ended December 31, 2012, 2011 and 2010, is presented in the following table.

Effective tax rate	2012		2011		2010	
Year ended December 31,						
Statutory U.S. federal tax rate	35.0	%	35.0	%	35.0	%
Increase/(decrease) in tax rate resulting from:						
U.S. state and local income taxes, net of U.S. federal income tax benefit	1.6		1.6		3.6	
Tax-exempt income	(2.9	)	(2.1	)	(2.4	)
Non-U.S. subsidiary earnings <sup>(a)</sup>	(2.4	)	(2.3	)	(2.2	)
Business tax credits	(4.2	)	(4.0	)	(3.7	)
Other, net	(0.7	)	0.9		(0.2	)
Effective tax rate	26.4	%	29.1	%	30.1	%

(a) Includes earnings deemed to be reinvested indefinitely in non-U.S. subsidiaries.

Deferred income tax expense/(benefit) results from differences between assets and liabilities measured for financial reporting purposes versus income tax return purposes. Deferred tax assets are recognized if, in management's judgment, their realizability is determined to be more likely than not. If a deferred tax asset is determined to be unrealizable, a valuation allowance is established. The significant components of deferred tax assets and liabilities are reflected in the following table as of December 31, 2012 and 2011.

Deferred taxes	2012		2011	
December 31, (in millions)				
Deferred tax assets				
Allowance for loan losses	\$8,712		\$10,689	
Employee benefits	4,308		4,570	
Accrued expenses and other <sup>(a)</sup>	12,393		11,183	
Non-U.S. operations	3,537		2,943	
Tax attribute carryforwards	1,062		1,547	
Gross deferred tax assets <sup>(a)</sup>	30,012		30,932	
Valuation allowance	(689	)	(1,303	)
Deferred tax assets, net of valuation allowance <sup>(a)</sup>	\$29,323		\$29,629	
Deferred tax liabilities				
Depreciation and amortization <sup>(a)</sup>	\$2,563		\$2,799	
Mortgage servicing rights, net of hedges <sup>(a)</sup>	5,336		4,396	
Leasing transactions <sup>(a)</sup>	2,242		2,348	
Non-U.S. operations	3,582		2,790	
Other, net <sup>(a)</sup>	4,340		2,520	
Gross deferred tax liabilities <sup>(a)</sup>	18,063		14,853	
Net deferred tax assets	\$11,260		\$14,776	

(a) The prior period has been revised to conform with the current presentation.

JPMorgan Chase has recorded deferred tax assets of \$1.1 billion at December 31, 2012, in connection with U.S. federal and state and local net operating loss carryforwards and foreign tax credit carryforwards. At December 31, 2012, the U.S. federal net operating loss carryforwards were approximately \$1.5 billion; the state and local net operating loss carryforward was approximately \$269 million; and the U.S. foreign tax credit carryforward was approximately \$525 million. If not utilized, the U.S. federal net operating loss carryforwards and the state and local net operating loss carryforward will expire between 2027 and 2030; and the U.S. foreign tax credit carryforward will expire in 2022.

The valuation allowance at December 31, 2012, was due to losses associated with non-U.S. subsidiaries. During 2012, the valuation allowance decreased by \$614 million largely related to the realization of state and local tax benefits.

At December 31, 2012, 2011 and 2010, JPMorgan Chase's unrecognized tax benefits, excluding related interest expense and penalties, were \$7.2 billion, \$7.2 billion and \$7.8 billion, respectively, of which \$4.2 billion, \$4.0 billion and \$3.8 billion, respectively, if recognized, would reduce the annual effective tax rate. Included in the amount of unrecognized tax benefits are certain items that would not affect the effective tax rate if they were recognized in the Consolidated Statements of Income. These unrecognized items include the tax effect of certain temporary differences, the portion of gross state and local unrecognized tax benefits that would be offset by the benefit from associated U.S. federal income tax deductions, and the portion of gross non-U.S. unrecognized tax benefits that would have offsets in other jurisdictions. As JPMorgan Chase is presently under audit by a number of taxing authorities, it is reasonably possible that significant changes in the gross balance of unrecognized tax benefits may occur within the next 12 months. JPMorgan Chase does not expect that any changes over the next 12 months in its gross balance of unrecognized tax benefits caused by such audits would result in a significant change in its annual effective tax rate. The following table presents a reconciliation of the beginning and ending amount of unrecognized tax benefits for the years ended December 31, 2012, 2011 and 2010.

Unrecognized tax benefits			
Year ended December 31, (in millions)	2012	2011	2010
Balance at January 1,	\$7,189	\$7,767	\$6,608
Increases based on tax positions related to the current period	680	516	813
Decreases based on tax positions related to the current period	—	(110)	(24)
Increases based on tax positions related to prior periods	234	496	1,681
Decreases based on tax positions related to prior periods	(853)	(1,433)	(1,198)
Decreases related to settlements with taxing authorities	(50)	(16)	(74)
Decreases related to a lapse of applicable statute of limitations	(42)	(31)	(39)
Balance at December 31,	\$7,158	\$7,189	\$7,767

After-tax interest expense/(benefit) and penalties related to income tax liabilities recognized in income tax expense were \$147 million, \$184 million and \$(54) million in 2012, 2011 and 2010, respectively.

At December 31, 2012 and 2011, in addition to the liability for unrecognized tax benefits, the Firm had accrued \$1.9 billion and \$1.7 billion, respectively, for income tax-related interest and penalties.

JPMorgan Chase is continually under examination by the Internal Revenue Service, by taxing authorities throughout the world, and by many states throughout the U.S. The following table summarizes the status of significant income tax examinations of JPMorgan Chase and its consolidated subsidiaries as of December 31, 2012.

December 31, 2012	Periods under examination	Status
JPMorgan Chase – U.S.	2003 - 2005	Field examination completed, JPMorgan Chase intends to file refund claims
JPMorgan Chase – U.S.	2006 - 2010	Field examination
Bear Stearns – U.S.	2006 – 2008	Field examination
JPMorgan Chase – United Kingdom	2006 – 2010	Field examination
JPMorgan Chase – New York State and City	2005 – 2007	Field examination
JPMorgan Chase – California	2006 – 2008	Field examination

The following table presents the U.S. and non-U.S. components of income before income tax expense for the years ended December 31, 2012, 2011 and 2010.

Income before income tax expense - U.S. and non-U.S.

Year ended December 31, (in millions)	2012	2011	2010
U.S.	\$24,895	\$16,336	\$16,568
Non-U.S. <sup>(a)</sup>	4,022	10,413	8,291
Income before income tax expense	\$28,917	\$26,749	\$24,859

<sup>(a)</sup> For purposes of this table, non-U.S. income is defined as income generated from operations located outside the U.S.



## Notes to consolidated financial statements

## Note 27 – Restrictions on cash and intercompany funds transfers

The business of JPMorgan Chase Bank, National Association (“JPMorgan Chase Bank, N.A.”) is subject to examination and regulation by the Office of the Comptroller of the Currency (“OCC”). The Bank is a member of the U.S. Federal Reserve System, and its deposits in the U.S. are insured by the FDIC.

The Board of Governors of the Federal Reserve System (the “Federal Reserve”) requires depository institutions to maintain cash reserves with a Federal Reserve Bank. The average amount of reserve balances deposited by the Firm’s bank subsidiaries with various Federal Reserve Banks was approximately \$5.6 billion and \$4.4 billion in 2012 and 2011, respectively.

Restrictions imposed by U.S. federal law prohibit JPMorgan Chase and certain of its affiliates from borrowing from banking subsidiaries unless the loans are secured in specified amounts. Such secured loans to the Firm or to other affiliates are generally limited to 10% of the banking subsidiary’s total capital, as determined by the risk-based capital guidelines; the aggregate amount of all such loans is limited to 20% of the banking subsidiary’s total capital.

The principal sources of JPMorgan Chase’s income (on a parent company-only basis) are dividends and interest from JPMorgan Chase Bank, N.A., and the other banking and nonbanking subsidiaries of JPMorgan Chase. In addition to dividend restrictions set forth in statutes and regulations, the Federal Reserve, the OCC and the FDIC have authority under the Financial Institutions Supervisory Act to prohibit or to limit the payment of dividends by the banking organizations they supervise, including JPMorgan Chase and its subsidiaries that are banks or bank holding companies, if, in the banking regulator’s opinion, payment of a dividend would constitute an unsafe or unsound practice in light of the financial condition of the banking organization.

At January 1, 2013, JPMorgan Chase’s banking subsidiaries could pay, in the aggregate, \$18.4 billion in dividends to their respective bank holding companies without the prior approval of their relevant banking regulators. The capacity to pay dividends in 2013 will be supplemented by the banking subsidiaries’ earnings during the year.

In compliance with rules and regulations established by U.S. and non-U.S. regulators, as of December 31, 2012 and 2011, cash in the amount of \$25.1 billion and \$25.4 billion, respectively, and securities with a fair value of \$0.7 billion and \$16.1 billion, respectively, were segregated in special bank accounts for the benefit of securities and futures brokerage customers. In addition, as of December 31, 2012 and 2011, the Firm had other restricted cash of \$3.4 billion and \$4.2 billion, respectively, primarily representing cash reserves held at non-U.S. central banks and held for other general purposes.

## Note 28 – Regulatory capital

The Federal Reserve establishes capital requirements, including well-capitalized standards for the consolidated financial holding company. The OCC establishes similar capital requirements and standards for the Firm’s national banks, including JPMorgan Chase Bank, N.A., and Chase Bank USA, N.A.

There are two categories of risk-based capital: Tier 1 capital and Tier 2 capital. Tier 1 capital consists of common stockholders’ equity, perpetual preferred stock, noncontrolling interests in subsidiaries and trust preferred securities, less goodwill and certain other adjustments. Tier 2 capital consists of preferred stock not qualifying as Tier 1 capital, subordinated long-term debt and other instruments qualifying as Tier 2 capital, and the aggregate allowance for credit losses up to a certain percentage of risk-weighted assets. Total capital is Tier 1 capital plus Tier 2 capital.

Risk-weighted assets (“RWA”) consist of on- and off-balance sheet assets that are assigned to one of several broad risk categories and weighted by factors representing their risk and potential for default. On-balance sheet assets are risk-weighted based on the perceived credit risk associated with the obligor or counterparty, the nature of any collateral, and the guarantor, if any. Off-balance sheet assets, such as lending-related commitments, guarantees, and derivatives, are risk-weighted by multiplying the contractual amount by the appropriate credit conversion factor to determine the on-balance sheet credit-equivalent amount, which is then risk-weighted based on the same factors used for on-balance sheet assets. Risk-weighted assets also incorporate a measure for the market risk related to applicable trading assets—debt and equity instruments, and foreign exchange and commodity derivatives. The resulting risk-weighted values for each of the risk categories are then aggregated to determine total risk-weighted assets.

Under the risk-based capital guidelines of the Federal Reserve, JPMorgan Chase is required to maintain minimum ratios of Tier 1 and Total capital to risk-weighted assets, as well as minimum leverage ratios (which are defined as

Tier 1 capital divided by adjusted quarterly average assets). Failure to meet these minimum requirements could cause the Federal Reserve to take action. Banking subsidiaries also are subject to these capital requirements by their respective primary regulators. As of December 31, 2012 and 2011, JPMorgan Chase and all of its banking subsidiaries were well-capitalized and met all capital requirements to which each was subject.

The following table presents the regulatory capital, assets and risk-based capital ratios for JPMorgan Chase and its significant banking subsidiaries at December 31, 2012 and 2011. These amounts are determined in accordance with regulations issued by the Federal Reserve and/or OCC. The following table reflects an adjustment to RWA to reflect regulatory guidance regarding a limited number of market risk models used for certain positions held by the Firm and JPMorgan Chase Bank, N.A. during the first half of 2012, including the synthetic credit portfolio. In the fourth quarter of 2012, the adjustment to RWA decreased substantially as a result of regulatory approval of certain market risk models and a reduction in related positions.

December 31, (in millions, except ratios)	JPMorgan Chase & Co. <sup>(d)</sup>		JPMorgan Chase Bank, N.A. <sup>(d)</sup>		Chase Bank USA, N.A. <sup>(d)</sup>		Well-capitalized ratios <sup>(e)</sup>	Minimum capital ratios <sup>(e)</sup>
	2012	2011	2012	2011	2012	2011		
<b>Regulatory capital</b>								
Tier 1 <sup>(a)</sup>	\$ 160,002	\$ 150,384	\$ 111,827	\$ 98,426	\$ 9,648	\$ 11,903		
Total	194,036	188,088	146,870	136,017	13,131	15,448		
<b>Assets</b>								
Risk-weighted <sup>(b)</sup>	\$ 1,270,378	\$ 1,221,198	\$ 1,094,155	\$ 1,042,898	\$ 103,593	\$ 107,421		
Adjusted average <sup>(c)</sup>	2,243,242	2,202,087	1,815,816	1,789,194	103,688	106,312		
<b>Capital ratios</b>								
Tier 1 <sup>(a)</sup>	12.6	% 12.3	% 10.2	% 9.4	% 9.3	% 11.1	% 6.0	% 4.0%
Total	15.3	15.4	13.4	13.0	12.7	14.4	10.0	8.0
Tier 1 leverage	7.1	6.8	6.2	5.5	9.3	11.2	5.0	<sup>(f)</sup> 3.0 <sup>(g)</sup>

JPMorgan Chase redeemed \$9.0 billion of trust preferred securities effective July 12, 2012. At December 31, 2012, for JPMorgan Chase and JPMorgan Chase Bank, N.A., trust preferred securities were \$10.2 billion and \$600 million, respectively. If these securities were excluded from the calculation at December 31, 2012, Tier 1 capital would be \$149.8 billion and \$111.2 billion, respectively, and the Tier 1 capital ratio would be 11.8% and 10.2%, respectively. At December 31, 2012, Chase Bank USA, N.A. had no trust preferred securities.

Includes off-balance sheet risk-weighted assets at December 31, 2012, of \$304.5 billion, \$297.1 billion and \$16 million, and at December 31, 2011, of \$301.1 billion, \$291.0 billion and \$38 million, for JPMorgan Chase, JPMorgan Chase Bank, N.A. and Chase Bank USA, N.A., respectively.

Adjusted average assets, for purposes of calculating the leverage ratio, include total quarterly average assets adjusted for unrealized gains/(losses) on securities, less deductions for disallowed goodwill and other intangible assets, investments in certain subsidiaries, and the total adjusted carrying value of nonfinancial equity investments that are subject to deductions from Tier 1 capital.

Asset and capital amounts for JPMorgan Chase's banking subsidiaries reflect intercompany transactions; whereas the respective amounts for JPMorgan Chase reflect the elimination of intercompany transactions.

As defined by the regulations issued by the Federal Reserve, OCC and FDIC.

Represents requirements for banking subsidiaries pursuant to regulations issued under the FDIC Improvement Act. There is no Tier 1 leverage component in the definition of a well-capitalized bank holding company.

The minimum Tier 1 leverage ratio for bank holding companies and banks is 3% or 4%, depending on factors specified in regulations issued by the Federal Reserve and OCC.

Note: Rating agencies allow measures of capital to be adjusted upward for deferred tax liabilities, which have resulted from both nontaxable business combinations and from tax-deductible goodwill. The Firm had deferred tax liabilities resulting from nontaxable business combinations totaling \$291 million and \$414 million at December 31, 2012 and 2011, respectively; and deferred tax liabilities resulting from tax-deductible goodwill of

\$2.5 billion and \$2.3 billion at December 31, 2012 and 2011, respectively.



## Notes to consolidated financial statements

A reconciliation of the Firm's Total stockholders' equity to Tier 1 capital and Total qualifying capital is presented in the table below.

December 31, (in millions)	2012	2011
Tier 1 capital		
Total stockholders' equity	\$204,069	\$183,573
Effect of certain items in accumulated other comprehensive income/(loss) excluded from Tier 1 capital	(4,198	) (970
Qualifying hybrid securities and noncontrolling interests <sup>(a)</sup>	10,608	19,668
Less: Goodwill <sup>(b)</sup>	45,663	45,873
Fair value DVA on structured notes and derivative liabilities related to the Firm's credit quality	1,577	2,150
Investments in certain subsidiaries	926	993
Other intangible assets <sup>(b)</sup>	2,311	2,871
Total Tier 1 capital	160,002	150,384
Tier 2 capital		
Long-term debt and other instruments qualifying as Tier 2	18,061	22,275
Qualifying allowance for credit losses	15,995	15,504
Adjustment for investments in certain subsidiaries and other	(22	) (75
Total Tier 2 capital	34,034	37,704
Total qualifying capital	\$194,036	\$188,088

(a) Primarily includes trust preferred securities of certain business trusts.

(b) Goodwill and other intangible assets are net of any associated deferred tax liabilities.

#### Note 29 – Off-balance sheet lending-related financial instruments, guarantees, and other commitments

JPMorgan Chase provides lending-related financial instruments (e.g., commitments and guarantees) to meet the financing needs of its customers. The contractual amount of these financial instruments represents the maximum possible credit risk to the Firm should the counterparty draw upon the commitment or the Firm be required to fulfill its obligation under the guarantee, and should the counterparty subsequently fail to perform according to the terms of the contract. Most of these commitments and guarantees expire without being drawn or a default occurring. As a result, the total contractual amount of these instruments is not, in the Firm's view, representative of its actual future credit exposure or funding requirements.

To provide for the risk of loss inherent in consumer (excluding credit card) and wholesale contracts, an allowance for credit losses on lending-related commitments is maintained. See Note 15 on pages 276–279 of this Annual Report for further discussion regarding the allowance for credit losses on lending-related commitments. The following table summarizes the contractual amounts and carrying values of off-balance sheet lending-related financial instruments, guarantees and other commitments at December 31, 2012 and 2011. The amounts in the table below for credit card and home equity lending-related commitments represent the total available credit for these products. The Firm has not experienced, and does not anticipate, that all available lines of credit for these products will be utilized at the same time. The Firm can reduce or cancel credit card lines of credit by providing the borrower notice or, in some cases, without notice as permitted by law. The Firm may reduce or close home equity lines of credit when there are significant decreases in the value of the underlying property, or when there has been a demonstrable decline in the creditworthiness of the borrower. Also, the Firm typically closes credit card lines when the borrower is 60 days or more past due.

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Off-balance sheet lending-related financial instruments, guarantees and other commitments

	Contractual amount				2011	Carrying value <sup>(h)</sup>		
	2012	Expires	Expires	Expires		2012	2011	
By remaining maturity at December 31, (in millions)	Expires in 1 year or less	1 year through 3 years	after 3 years through 5 years	after 5 years	Total	Total		
Lending-related								
Consumer, excluding credit card:								
Home equity – senior lien	\$2,039	\$5,208	\$4,848	\$3,085	\$15,180	\$16,542	\$—	\$—
Home equity – junior lien	3,739	8,343	6,361	3,353	21,796	26,408	—	—
Prime mortgage	4,107	—	—	—	4,107	1,500	—	—
Subprime mortgage	—	—	—	—	—	—	—	—
Auto	6,916	111	127	31	7,185	6,694	1	1
Business banking	10,160	476	94	362	11,092	10,299	6	6
Student and other	128	189	8	471	796	864	—	—
Total consumer, excluding credit card	27,089	14,327	11,438	7,302	60,156	62,307	7	7
Credit card	533,018	—	—	—	533,018	530,616	—	—
Total consumer	560,107	14,327	11,438	7,302	593,174	592,923	7	7
Wholesale:								
Other unfunded commitments to extend credit <sup>(a)(b)</sup>	57,443	81,575	97,394	6,813	243,225	215,251	377	347
Standby letters of credit and other financial guarantees <sup>(a)(b)(c)(d)</sup>	28,641	31,270	39,076	1,942	100,929	101,899	647	696
Unused advised lines of credit	73,967	10,328	375	417	85,087	60,203	—	—
Other letters of credit <sup>(a)(d)</sup>	4,276	1,169	74	54	5,573	5,386	2	2
Total wholesale	164,327	124,342	136,919	9,226	434,814	382,739	1,026	1,045
Total lending-related	\$724,434	\$138,669	\$148,357	\$16,528	\$1,027,988	\$975,662	\$1,033	\$1,052
Other guarantees and commitments								
Securities lending indemnification agreements and guarantees <sup>(e)</sup>	\$166,493	\$—	\$—	\$—	\$166,493	\$186,077	NA	NA
Derivatives qualifying as guarantees	2,336	2,441	19,946	37,015	61,738	75,593	\$42	\$457
Unsettled reverse repurchase and securities borrowing agreements <sup>(f)</sup>	34,871	—	—	—	34,871	39,939	—	—
Loan sale and securitization-related indemnifications:								
Mortgage repurchase liability	NA	NA	NA	NA	NA	NA	2,811	3,557
Loans sold with recourse	NA	NA	NA	NA	9,305	10,397	141	148
Other guarantees and commitments <sup>(g)</sup>	609	319	1,400	4,452	6,780	6,321	(75)	(5)

(a) At December 31, 2012 and 2011, reflects the contractual amount net of risk participations totaling \$473 million and \$1.1 billion, respectively, for other unfunded commitments to extend credit; \$16.6 billion and \$19.8 billion, respectively, for standby letters of credit and other financial guarantees; and \$690 million and \$974 million,

respectively, for other letters of credit. In regulatory filings with the Federal Reserve these commitments are shown gross of risk participations.

(b) At December 31, 2012 and 2011, included credit enhancements and bond and commercial paper liquidity commitments to U.S. states and municipalities, hospitals and other non-profit entities of \$44.5 billion and \$48.6 billion, respectively. These commitments also include liquidity facilities to nonconsolidated municipal bond VIEs; for further information, see Note 16 on pages 280–291 of this Annual Report.

(c) At December 31, 2012 and 2011, included unissued standby letters of credit commitments of \$44.4 billion and \$44.1 billion, respectively.

(d) At December 31, 2012 and 2011, JPMorgan Chase held collateral relating to \$42.7 billion and \$41.5 billion, respectively, of standby letters of credit; and \$1.1 billion and \$1.3 billion, respectively, of other letters of credit.

(e) At December 31, 2012 and 2011, collateral held by the Firm in support of securities lending indemnification agreements was \$165.1 billion and \$186.3 billion, respectively. Securities lending collateral comprises primarily cash and securities issued by governments that are members of the Organisation for Economic Co-operation and Development (“OECD”) and U.S. government agencies.

(f) At December 31, 2012 and 2011, the amount of commitments related to forward-starting reverse repurchase agreements and securities borrowing agreements were \$13.2 billion and \$14.4 billion, respectively. Commitments related to unsettled reverse repurchase agreements and securities borrowing agreements with regular-way settlement periods were \$21.7 billion and \$25.5 billion, at December 31, 2012 and 2011, respectively.

At December 31, 2012 and 2011, included unfunded commitments of \$370 million and \$789 million, respectively, to third-party private equity funds; and \$1.5 billion and \$1.5 billion, respectively, to other equity investments.

(g) These commitments included \$333 million and \$820 million, respectively, related to investments that are generally fair valued at net asset value as discussed in Note 3 on pages 196–214 of this Annual Report. In addition, at December 31, 2012 and 2011, included letters of credit hedged by derivative transactions and managed on a market risk basis of \$4.5 billion and \$3.9 billion, respectively.

(h) For lending-related products, the carrying value represents the allowance for lending-related commitments and the guarantee liability; for derivative-related products, the carrying value represents the fair value.

## Notes to consolidated financial statements

## Other unfunded commitments to extend credit

Other unfunded commitments to extend credit generally comprise commitments for working capital and general corporate purposes, extensions of credit to support commercial paper facilities and bond financings in the event that those obligations cannot be remarketed to new investors as well as committed liquidity facilities to clearing organizations.

Also included in other unfunded commitments to extend credit are commitments to noninvestment-grade counterparties in connection with leveraged and acquisition finance activities, which were \$8.8 billion and \$6.1 billion at December 31, 2012 and 2011, respectively. For further information, see Note 3 and Note 4 on pages 196–214 and 214–216 respectively, of this Annual Report.

In addition, the Firm acts as a clearing and custody bank in the U.S. tri-party repurchase transaction market. In its role as clearing and custody bank, the Firm is exposed to intra-day credit risk of the cash borrowers, usually broker-dealers; however, this exposure is secured by collateral and typically extinguished through the settlement process by the end of the day. For the three months ended December 31, 2012, the tri-party repurchase daily balances averaged \$409 billion.

## Guarantees

U.S. GAAP requires that a guarantor recognize, at the inception of a guarantee, a liability in an amount equal to the fair value of the obligation undertaken in issuing the guarantee. U.S. GAAP defines a guarantee as a contract that contingently requires the guarantor to pay a guaranteed party based upon: (a) changes in an underlying asset, liability or equity security of the guaranteed party; or (b) a third party's failure to perform under a specified agreement. The Firm considers the following off-balance sheet lending-related arrangements to be guarantees under U.S. GAAP: standby letters of credit and financial guarantees, securities lending indemnifications, certain indemnification agreements included within third-party contractual arrangements and certain derivative contracts.

As required by U.S. GAAP, the Firm initially records guarantees at the inception date fair value of the obligation assumed (e.g., the amount of consideration received or the net present value of the premium receivable). For certain types of guarantees, the Firm records this fair value amount in other liabilities with an offsetting entry recorded in cash (for premiums received), or other assets (for premiums receivable). Any premium receivable recorded in other assets is reduced as cash is received under the contract, and the fair value of the liability recorded at inception is amortized into income as lending and deposit-related fees over the life of the guarantee contract. For indemnifications provided in sales agreements, a portion of the sale proceeds is allocated to the guarantee, which adjusts the gain or loss that would otherwise result from the transaction. For these indemnifications, the initial liability is amortized to income as the Firm's risk is reduced (i.e., over time or when the indemnification expires). Any contingent liability that exists as a result of issuing the guarantee or indemnification is recognized when it becomes probable and reasonably estimable. The contingent portion of the liability is not recognized if the estimated amount is less than the carrying amount of the liability recognized at inception (adjusted for any amortization). The recorded amounts of the liabilities related to guarantees and indemnifications at December 31, 2012 and 2011, excluding the allowance for credit losses on lending-related commitments, are discussed below.

#### Standby letters of credit and other financial guarantees

Standby letters of credit (“SBLC”) and other financial guarantees are conditional lending commitments issued by the Firm to guarantee the performance of a customer to a third party under certain arrangements, such as commercial paper facilities, bond financings, acquisition financings, trade and similar transactions. The carrying values of standby and other letters of credit were

\$649 million and \$698 million at December 31, 2012 and 2011, respectively, which were classified in accounts payable and other liabilities on the Consolidated Balance Sheets; these carrying values included \$284 million and \$319 million, respectively, for the allowance for lending-related commitments, and \$365 million and \$379 million, respectively, for the guarantee liability and corresponding asset.

The following table summarizes the types of facilities under which standby letters of credit and other letters of credit arrangements are outstanding by the ratings profiles of the Firm’s customers, as of December 31, 2012 and 2011.

Standby letters of credit, other financial guarantees and other letters of credit

December 31, (in millions)	2012		2011	
	Standby letters of credit and other financial guarantees	Other letters of credit	Standby letters of credit and other financial guarantees	Other letters of credit
Investment-grade <sup>(a)</sup>	\$77,081	\$3,998	\$78,884	\$4,105
Noninvestment-grade <sup>(a)</sup>	23,848	1,575	23,015	1,281
Total contractual amount	\$100,929	<sup>(b)</sup> \$5,573	\$101,899	<sup>(b)</sup> \$5,386
Allowance for lending-related commitments	\$282	\$2	\$317	\$2
Commitments with collateral	42,654	1,145	41,529	1,264

<sup>(a)</sup> The ratings scale is based on the Firm’s internal ratings which generally correspond to ratings as defined by S&P and Moody’s.

<sup>(b)</sup> At December 31, 2012 and 2011, included unissued standby letters of credit commitments of \$44.4 billion and \$44.1 billion, respectively.

#### Advised lines of credit

An advised line of credit is a revolving credit line which specifies the maximum amount the Firm may make available to an obligor, on a nonbinding basis. The borrower receives written or oral advice of this facility. The Firm may cancel this facility at any time by providing the borrower notice or, in some cases, without notice as permitted by law.

#### Securities lending indemnifications

Through the Firm’s securities lending program, customers’ securities, via custodial and non-custodial arrangements, may be lent to third parties. As part of this program, the Firm provides an indemnification in the lending agreements which protects the lender against the failure of the borrower to return the lent securities. To minimize its liability under these indemnification agreements, the Firm obtains cash or other highly liquid collateral with a market value exceeding 100% of the value of the securities on loan from the borrower. Collateral is marked to market daily to help assure that collateralization is adequate. Additional collateral is called from the borrower if a shortfall exists, or collateral may be released to the borrower in the event of overcollateralization. If a borrower defaults, the Firm would use the collateral held to purchase replacement securities in the market or to credit the lending customer with the cash equivalent thereof.

#### Derivatives qualifying as guarantees

In addition to the contracts described above, the Firm transacts certain derivative contracts that have the characteristics of a guarantee under U.S. GAAP. These contracts include written put options that require the Firm to purchase assets upon exercise by the option holder at a specified price by a specified date in the future. The Firm may enter into

written put option contracts in order to meet client needs, or for other trading purposes. The terms of written put options are typically five years or less. Derivative guarantees also include contracts such as stable value derivatives that require the Firm to make a payment of the difference between the market value and the book value of a counterparty's reference portfolio of assets in the event that market value is less than book value and certain other conditions have been met. Stable value derivatives, commonly referred to as "stable value wraps", are transacted in order to allow investors to realize investment returns with less volatility than an unprotected portfolio and are typically longer-term or may have no stated maturity, but allow the Firm to terminate the contract under certain conditions.

## Notes to consolidated financial statements

Derivative guarantees are recorded on the Consolidated Balance Sheets at fair value in trading assets and trading liabilities. The total notional value of the derivatives that the Firm deems to be guarantees was \$61.7 billion and \$75.6 billion at December 31, 2012 and 2011, respectively. The notional amount generally represents the Firm's maximum exposure to derivatives qualifying as guarantees. However, exposure to certain stable value contracts is contractually limited to a substantially lower percentage of the notional amount; the notional amount on these stable value contracts was \$26.5 billion and \$26.1 billion and the maximum exposure to loss was \$2.8 billion and \$2.8 billion, at December 31, 2012 and 2011, respectively. The fair values of the contracts reflect the probability of whether the Firm will be required to perform under the contract. The fair value related to derivatives that the Firm deems to be guarantees were derivative payables of \$122 million and \$555 million and derivative receivables of \$80 million and \$98 million at December 31, 2012 and 2011, respectively. The Firm reduces exposures to these contracts by entering into offsetting transactions, or by entering into contracts that hedge the market risk related to the derivative guarantees.

In addition to derivative contracts that meet the characteristics of a guarantee, the Firm is both a purchaser and seller of credit protection in the credit derivatives market. For a further discussion of credit derivatives, see Note 6 on pages 218–227 of this Annual Report.

**Unsettled reverse repurchase and securities borrowing agreements**

In the normal course of business, the Firm enters into reverse repurchase agreements and securities borrowing agreements that settle at a future date. At settlement, these commitments require that the Firm advance cash to and accept securities from the counterparty. These agreements generally do not meet the definition of a derivative, and therefore, are not recorded on the Consolidated Balance Sheets until settlement date. At December 31, 2012 and 2011, the amount of commitments related to forward starting reverse repurchase agreements and securities borrowing agreements were \$13.2 billion and \$14.4 billion, respectively. Commitments related to unsettled reverse repurchase agreements and securities borrowing agreements with regular way settlement periods were \$21.7 billion and \$25.5 billion at December 31, 2012 and 2011, respectively.

**Loan sales- and securitization-related indemnifications****Mortgage repurchase liability**

In connection with the Firm's loan sale and securitization activities with the GSEs and other loan sale and private-label securitization transactions, as described in Note 16 on pages 280–291 of this Annual Report, the Firm has made representations and warranties that the loans sold meet certain requirements. The Firm may be, and has been, required to repurchase loans and/or indemnify the GSEs and other investors for losses due to material breaches of these representations and warranties. Generally, the maximum amount of future payments the Firm would be required to make for breaches of these representations and warranties would be equal to the unpaid principal balance of such loans that are deemed to have defects that were sold to purchasers (including securitization-related SPEs) plus, in certain circumstances, accrued interest on such loans and certain expense.

Subsequent to the Firm's acquisition of certain assets and liabilities of Washington Mutual from the FDIC in September 2008, the Firm resolved and/or limited certain current and future repurchase demands for loans sold to the GSEs by Washington Mutual, although it remains the Firm's position that such obligations remain with the FDIC receivership. As of December 31, 2012, the Firm believes that it has no remaining exposure related to loans sold by Washington Mutual to the GSEs.

There have been generalized allegations, as well as specific demands, that the Firm repurchase loans sold or deposited into private-label securitizations (including claims from insurers that have guaranteed certain obligations of the securitization trusts). Although the Firm encourages parties to use the contractual repurchase process established in the governing agreements, these private-label repurchase claims have generally manifested themselves through threatened or pending litigation. Accordingly, the liability related to repurchase demands associated with all of the private-label securitizations is separately evaluated by the Firm in establishing its litigation reserves. For additional information regarding litigation, see Note 31 on pages 316–325 of this Annual Report.





To estimate the Firm’s mortgage repurchase liability arising from breaches of representations and warranties, the Firm considers:

- (i) the level of outstanding unresolved repurchase demands, estimated probable future repurchase demands considering information about file requests, delinquent and
- (ii) liquidated loans, resolved and unresolved mortgage insurance rescission notices and the Firm’s historical experience,
- (iii) the potential ability of the Firm to cure the defects identified in the repurchase demands (“cure rate”),
- (iv) the estimated severity of loss upon repurchase of the loan or collateral, make-whole settlement, or indemnification,
- (v) the Firm’s potential ability to recover its losses from third-party originators, and
- (vi) the terms of agreements with certain mortgage insurers and other parties.

Based on these factors, the Firm has recognized a mortgage repurchase liability of \$2.8 billion and \$3.6 billion, as of December 31, 2012 and 2011, respectively, which is reported in accounts payable and other liabilities net of probable recoveries from third-party originators of \$441 million and \$577 million at December 31, 2012 and 2011, respectively. The Firm’s mortgage repurchase liability is intended to cover losses associated with all loans previously sold in connection with loan sale and securitization transactions with the GSEs, regardless of when those losses occur or how they are ultimately resolved (e.g., repurchase, make-whole payment). The liability related to all repurchase demands associated with private-label securitizations is separately evaluated by the Firm in establishing its litigation reserves.

Substantially all of the estimates and assumptions underlying the Firm’s established methodology for computing its recorded mortgage repurchase liability — including the amount of probable future demands from the GSEs (based on both historical experience and the Firm’s expectations about the GSEs future behavior), the ability of the Firm to cure identified defects, the severity of loss upon repurchase or foreclosure, and recoveries from third parties — require application of a significant level of management judgment.

While the Firm uses the best information available to it in estimating its mortgage repurchase liability, the estimation process is inherently uncertain and imprecise and, accordingly, losses in excess of the amounts accrued as of December 31, 2012, are reasonably possible. The Firm believes the estimate of the range of reasonably possible losses, in excess of its established repurchase liability, is from \$0 to approximately \$0.9 billion at December 31, 2012. This estimated range of reasonably possible loss considers the Firm’s GSE-related exposure based on an assumed peak to trough decline in home prices of 40%, which is an additional 10 percentage point decline in home prices beyond the Firm’s current assumptions (which were derived from a nationally recognized home price index). Although the Firm does not consider a further decline in home prices of this magnitude likely to occur, such a decline could increase the levels of loan delinquencies, which may, in turn, increase the level of repurchase demands from the GSEs and potentially result in additional repurchases of loans at greater loss severities; each of these factors could affect the Firm’s mortgage repurchase liability.

The following table summarizes the change in the mortgage repurchase liability for each of the periods presented. Summary of changes in mortgage repurchase liability<sup>(a)</sup>

Year ended December 31, (in millions)	2012	2011	2010
Repurchase liability at beginning of period	\$3,557	\$3,285	\$1,705
Realized losses <sup>(b)</sup>	(1,158 )	(1,263 )	(1,423 )
Provision for repurchase losses <sup>(c)</sup>	412	1,535	3,003
Repurchase liability at end of period	\$2,811	\$3,557	\$3,285

(a) All mortgage repurchase demands associated with private-label securitizations are separately evaluated by the Firm in establishing its litigation reserves.

(b) Includes principal losses and accrued interest on repurchased loans, “make-whole” settlements, settlements with claimants, and certain related expense. Make-whole settlements were \$524 million, \$640 million and \$632 million,

for the years ended December 31, 2012, 2011 and 2010, respectively.

(c) Includes \$112 million, \$52 million and \$47 million of provision related to new loan sales for the years ended December 31, 2012, 2011 and 2010, respectively.

## Notes to consolidated financial statements

## Loans sold with recourse

The Firm provides servicing for mortgages and certain commercial lending products on both a recourse and nonrecourse basis. In nonrecourse servicing, the principal credit risk to the Firm is the cost of temporary servicing advances of funds (i.e., normal servicing advances). In recourse servicing, the servicer agrees to share credit risk with the owner of the mortgage loans, such as Fannie Mae or Freddie Mac or a private investor, insurer or guarantor. Losses on recourse servicing predominantly occur when foreclosure sales proceeds of the property underlying a defaulted loan are less than the sum of the outstanding principal balance, plus accrued interest on the loan and the cost of holding and disposing of the underlying property. The Firm's securitizations are predominantly nonrecourse, thereby effectively transferring the risk of future credit losses to the purchaser of the mortgage-backed securities issued by the trust. At December 31, 2012 and 2011, the unpaid principal balance of loans sold with recourse totaled \$9.3 billion and \$10.4 billion, respectively. The carrying value of the related liability that the Firm has recorded, which is representative of the Firm's view of the likelihood it will have to perform under its recourse obligations, was \$141 million and \$148 million at December 31, 2012 and 2011, respectively.

## Other off-balance sheet arrangements

## Indemnification agreements – general

In connection with issuing securities to investors, the Firm may enter into contractual arrangements with third parties that require the Firm to make a payment to them in the event of a change in tax law or an adverse interpretation of tax law. In certain cases, the contract also may include a termination clause, which would allow the Firm to settle the contract at its fair value in lieu of making a payment under the indemnification clause. The Firm may also enter into indemnification clauses in connection with the licensing of software to clients ("software licensees") or when it sells a business or assets to a third party ("third-party purchasers"), pursuant to which it indemnifies software licensees for claims of liability or damages that may occur subsequent to the licensing of the software, or third-party purchasers for losses they may incur due to actions taken by the Firm prior to the sale of the business or assets. It is difficult to estimate the Firm's maximum exposure under these indemnification arrangements, since this would require an assessment of future changes in tax law and future claims that may be made against the Firm that have not yet occurred. However, based on historical experience, management expects the risk of loss to be remote.

## Credit card charge-backs

Chase Paymentech Solutions, Card's merchant services business and a subsidiary of JPMorgan Chase Bank, N.A., is a global leader in payment processing and merchant acquiring.

Under the rules of Visa USA, Inc., and MasterCard International, JPMorgan Chase Bank, N.A., is liable primarily for the amount of each processed credit card sales

transaction that is the subject of a dispute between a cardmember and a merchant. If a dispute is resolved in the cardmember's favor, Chase Paymentech will (through the cardmember's issuing bank) credit or refund the amount to the cardmember and will charge back the transaction to the merchant. If Chase Paymentech is unable to collect the amount from the merchant, Chase Paymentech will bear the loss for the amount credited or refunded to the cardmember. Chase Paymentech mitigates this risk by withholding future settlements, retaining cash reserve accounts or by obtaining other security. However, in the unlikely event that: (1) a merchant ceases operations and is unable to deliver products, services or a refund; (2) Chase Paymentech does not have sufficient collateral from the merchant to provide customer refunds; and (3) Chase Paymentech does not have sufficient financial resources to provide customer refunds, JPMorgan Chase Bank, N.A., would be liable for the amount of the transaction. For the year ended December 31, 2012, Chase Paymentech incurred aggregate credit losses of \$16 million on \$655.2 billion of aggregate volume processed, and at December 31, 2012, it held \$203 million of collateral. For the year ended December 31, 2011, Chase Paymentech incurred aggregate credit losses of \$13 million on \$553.7 billion of aggregate volume processed, and at December 31, 2011, it held \$204 million of collateral. For the year ended December 31, 2010, Chase Paymentech incurred aggregate credit losses of \$12 million on \$469.3 billion of aggregate volume processed, and at December 31, 2010, it held \$189 million of collateral. The Firm believes that, based on historical experience and the collateral held by Chase Paymentech, the fair value of the Firm's charge back-related obligations, which are representative of the payment or performance risk to the Firm, is immaterial.

Exchange and clearinghouse guarantees

The Firm is a member of several securities and futures exchanges and clearinghouses, both in the U.S. and other countries. Membership in some of these organizations requires the Firm to pay a pro rata share of the losses incurred by the organization as a result of the default of another member. Such obligations vary with different organizations. These obligations may be limited to members who dealt with the defaulting member or to the amount (or a multiple of the amount) of the Firm's contribution to a member's guarantee fund, or, in a few cases, the obligation may be unlimited. It is difficult to estimate the Firm's maximum exposure under these membership agreements, since this would require an assessment of future claims that may be made against the Firm that have not yet occurred. However, based on historical experience, management expects the risk of loss to be remote.

The Firm clears transactions on behalf of its clients through various clearinghouses, and the Firm stands behind the performance of its clients on such trades. The Firm mitigates its exposure to loss in the event of a client default by requiring that clients provide appropriate amounts of margin at the inception and throughout the life of the transaction, and can cease the provision of clearing services

if clients do not adhere to their obligations under the clearing agreement. It is difficult to estimate the Firm's maximum exposure under such transactions, as this would require an assessment of transactions that clients may execute in the future. However, based upon historical experience, management believes it is unlikely that the Firm will have to make any material payments under these arrangements and the risk of loss is expected to be remote.

#### Guarantees of subsidiaries

In the normal course of business, JPMorgan Chase & Co. ("Parent Company") may provide counterparties with guarantees of certain of the trading and other obligations of its subsidiaries on a contract-by-contract basis, as negotiated with the Firm's counterparties. The obligations of the subsidiaries are included on the Firm's Consolidated Balance Sheets, or are reflected as off-balance sheet commitments; therefore, the Parent Company has not recognized a separate liability for these guarantees. The Firm believes that the occurrence of any event that would trigger payments by the Parent Company under these guarantees is remote.

The Parent Company has guaranteed certain debt of its subsidiaries, including both long-term debt and structured notes sold as part of the Firm's market-making activities. These guarantees are not included in the table on page 309 of this Note. For additional information, see Note 21 on pages 297–299 of this Annual Report.

#### Note 30 – Commitments, pledged assets and collateral

##### Lease commitments

At December 31, 2012, JPMorgan Chase and its subsidiaries were obligated under a number of noncancelable operating leases for premises and equipment used primarily for banking purposes, and for energy-related tolling service agreements. Certain leases contain renewal options or escalation clauses providing for increased rental payments based on maintenance, utility and tax increases, or they require the Firm to perform restoration work on leased premises. No lease agreement imposes restrictions on the Firm's ability to pay dividends, engage in debt or equity financing transactions or enter into further lease agreements.

The following table presents required future minimum rental payments under operating leases with noncancelable lease terms that expire after December 31, 2012.

Year ended December 31, (in millions)

2013	\$1,788
2014	1,711
2015	1,571
2016	1,431
2017	1,318
After 2017	6,536
Total minimum payments required <sup>(a)</sup>	14,355
Less: Sublease rentals under noncancelable subleases	(1,732)
Net minimum payment required	\$12,623

<sup>(a)</sup> Lease restoration obligations are accrued in accordance with U.S. GAAP, and are not reported as a required minimum lease payment.

Total rental expense was as follows.

Year ended December 31, (in millions)	2012	2011	2010
Gross rental expense	\$2,212	\$2,228	\$2,212
Sublease rental income	(288)	(403)	(545)
Net rental expense	\$1,924	\$1,825	\$1,667

##### Pledged assets

At December 31, 2012, assets were pledged to collateralize repurchase and other securities financing agreements, maintain potential borrowing capacity with central banks and for other purposes, including to secure borrowings and public deposits. Certain of these pledged assets may be sold or repledged by the secured parties and are identified as financial instruments owned (pledged to various parties) on the Consolidated Balance Sheets. In addition, at December 31, 2012 and 2011, the Firm had pledged \$291.7 billion and \$270.3 billion, respectively, of financial

instruments it owns that may not be sold or repledged by the secured parties. Total assets pledged do not include assets of consolidated VIEs; these assets are used to settle the liabilities of those entities. See Note 16 on pages 280–291 of this Annual Report for additional information on assets and liabilities of consolidated VIEs. For additional information on the Firm’s securities financing activities and long-term debt, see Note 13 on page 249, and Note 21 on pages 297–299, respectively, of this Annual report. The significant components of the Firm’s pledged assets were as follows.

December 31, (in billions)	2012	2011
Securities	\$110.1	\$134.8
Loans	207.2	198.6
Trading assets and other	155.5	122.8
Total assets pledged	\$472.8	\$456.2

Notes to consolidated financial statements

Collateral

At December 31, 2012 and 2011, the Firm had accepted assets as collateral that it could sell or repledge, deliver or otherwise use with a fair value of approximately \$825.7 billion and \$742.1 billion, respectively. This collateral was generally obtained under resale agreements, securities borrowing agreements, customer margin loans and derivative agreements. Of the collateral received, approximately \$546.8 billion and \$515.8 billion, respectively, were sold or repledged, generally as collateral under repurchase agreements, securities lending agreements or to cover short sales and to collateralize deposits and derivative agreements.

Note 31 – Litigation

Contingencies

As of December 31, 2012, the Firm and its subsidiaries are defendants or putative defendants in numerous legal proceedings, including private, civil litigations and regulatory/government investigations. The litigations range from individual actions involving a single plaintiff to class action lawsuits with potentially millions of class members. Investigations involve both formal and informal proceedings, by both governmental agencies and self-regulatory organizations. These legal proceedings are at varying stages of adjudication, arbitration or investigation, and involve each of the Firm's lines of business and geographies and a wide variety of claims (including common law tort and contract claims and statutory antitrust, securities and consumer protection claims), some of which present novel legal theories.

The Firm believes the estimate of the aggregate range of reasonably possible losses, in excess of reserves established, for its legal proceedings is from \$0 to approximately \$6.1 billion at December 31, 2012. This estimated aggregate range of reasonably possible losses is based upon currently available information for those proceedings in which the Firm is involved, taking into account the Firm's best estimate of such losses for those cases for which such estimate can be made. For certain cases, the Firm does not believe that an estimate can currently be made. The Firm's estimate involves significant judgment, given the varying stages of the proceedings (including the fact that many are currently in preliminary stages), the existence in many such proceedings of multiple defendants (including the Firm) whose share of liability has yet to be determined, the numerous yet-unresolved issues in many of the proceedings (including issues regarding class certification and the scope of many of the claims) and the attendant uncertainty of the various potential outcomes of such proceedings. Accordingly, the Firm's estimate will change from time to time, and actual losses may be more or less than the current estimate.

Set forth below are descriptions of the Firm's material legal proceedings.

**Auction-Rate Securities Investigations and Litigation.** Beginning in March 2008, several regulatory authorities initiated investigations of a number of industry participants, including the Firm, concerning possible state and federal securities law violations in connection with the sale of auction-rate securities ("ARS"). The market for many such securities had frozen and a significant number of auctions for those securities began to fail in February 2008. The Firm, on behalf of itself and affiliates, agreed to a settlement in principle with the New York Attorney General's Office which provided, among other things, that the Firm would offer to purchase at par certain ARS purchased from J.P. Morgan Securities LLC, Chase Investment Services Corp. and Bear, Stearns & Co. Inc. by individual investors, charities and small- to medium-sized businesses. The Firm also agreed to a substantively similar settlement in principle with the Office of Financial Regulation for the State of Florida and the North American Securities Administrators Association ("NASAA") Task Force, which agreed to recommend approval of the settlement to all remaining states, Puerto Rico and the U.S. Virgin Islands. The Firm has finalized the settlement agreements with the New York Attorney General's Office and the Office of Financial Regulation for the State of Florida. The settlement agreements provide for the payment of penalties totaling \$25 million to all states and territories. To date, final consent agreements have been reached with all but three of NASAA's members.

The Firm also was named in two putative antitrust class actions. The actions allege that the Firm, along with numerous other financial institution defendants, colluded to maintain and stabilize the ARS market and then to withdraw their support for the ARS market. In January 2010, the District Court dismissed both actions. An appeal is pending in the United States Court of Appeals for the Second Circuit.

Bank Secrecy Act/Anti-Money Laundering. In January 2013, JPMorgan Chase & Co. entered into a Consent Order with the Board of Governors of the Federal Reserve System (the “Federal Reserve”) and JPMorgan Chase Bank, N.A., JPMorgan Bank and Trust Company, N.A. and Chase Bank USA, N.A. entered into a Consent Order with the Office of the Comptroller of the Currency (the “OCC”) relating principally to JPMorgan Chase & Co.’s and such banks’ policies, procedures and controls relating to compliance with Bank Secrecy Act and Anti-Money Laundering requirements. The Firm neither admitted nor denied the regulatory agencies’ findings in the orders.

Bear Stearns Hedge Fund Matters. The Bear Stearns Companies LLC (formerly The Bear Stearns Companies Inc.) (“Bear Stearns”), certain current or former subsidiaries of Bear Stearns, including Bear Stearns Asset Management, Inc. (“BSAM”) and Bear, Stearns & Co. Inc., and certain individuals formerly employed by Bear Stearns are named defendants (collectively the “Bear Stearns defendants”) in multiple civil actions and arbitrations relating to alleged



losses resulting from the failure of the Bear Stearns High Grade Structured Credit Strategies Master Fund, Ltd. (the “High Grade Fund”) and the Bear Stearns High Grade Structured Credit Strategies Enhanced Leverage Master Fund, Ltd. (the “Enhanced Leverage Fund”) (collectively the “Funds”). BSAM served as investment manager for both of the Funds, which were organized such that there were U.S. and Cayman Islands “feeder funds” that invested substantially all their assets, directly or indirectly, in the Funds. The Funds are in liquidation.

There are currently three civil actions pending in the United States District Court for the Southern District of New York relating to the Funds. One of these actions involves a derivative lawsuit brought on behalf of purchasers of partnership interests in the U.S. feeder fund to the Enhanced Leverage Fund, alleging that the Bear Stearns defendants mismanaged the Funds. This action seeks, among other things, unspecified compensatory damages based on alleged investor losses. The parties have reached an agreement to settle this derivative action, pursuant to which BSAM would pay a maximum of approximately \$18 million. In April 2012, the District Court granted final approval of this settlement. In May 2012, objectors representing certain interests in the U.S. feeder fund filed a notice of appeal to the United States Court of Appeals for the Second Circuit from the District Court’s final approval of the settlement. That appeal is currently pending.

The second pending action, brought by the Joint Voluntary Liquidators of the Cayman Islands feeder funds, makes allegations similar to those asserted in the derivative lawsuits related to the U.S. feeder funds. This action alleges net losses of approximately \$700 million and seeks compensatory and punitive damages. The parties recently reached an agreement in principle to resolve the litigation contingent on the execution of a written settlement agreement. The third action was brought by Bank of America and Banc of America Securities LLC (together “BofA”) alleging breach of contract, fraud and breach of fiduciary duty in connection with a \$4 billion securitization in May 2007 known as a “CDO-squared,” for which BSAM served as collateral manager. This securitization was composed of certain collateralized debt obligation holdings that were purchased by BofA from the Funds. BofA currently seeks damages up to approximately \$540 million. Motions for summary judgment are pending.

**Bear Stearns Shareholder Litigation and Related Matters.** Various shareholders of Bear Stearns have commenced purported class actions against Bear Stearns and certain of its former officers and/or directors on behalf of all persons who purchased or otherwise acquired common stock of Bear Stearns between December 14, 2006, and March 14, 2008 (the “Class Period”). The actions alleged that the defendants issued materially false and misleading statements regarding Bear Stearns’ business and financial results and that, as a result of those false statements, Bear Stearns’ common stock traded at artificially inflated prices during the Class Period. In November 2012, the United

States District Court for the Southern District of New York granted final approval of a \$275 million settlement.

Bear Stearns, former members of Bear Stearns’ Board of Directors and certain of Bear Stearns’ former executive officers have also been named as defendants in a shareholder derivative and class action suit which is pending in the United States District Court for the Southern District of New York. Plaintiffs assert claims for breach of fiduciary duty, violations of federal securities laws, waste of corporate assets and gross mismanagement, unjust enrichment, abuse of control, and indemnification and contribution in connection with the losses sustained by Bear Stearns as a result of its purchases of subprime loans and certain repurchases of its own common stock. Certain individual defendants are also alleged to have sold their holdings of Bear Stearns common stock while in possession of material nonpublic information. Plaintiffs seek compensatory damages in an unspecified amount. The District Court dismissed the action in January 2011, and plaintiffs have appealed. The appeal has been withdrawn pursuant to a stipulation that gives plaintiffs until March 1, 2013 to reinstate.

**CIO Investigations and Litigation.** The Firm is responding to a consolidated shareholder class action, a consolidated class action brought under the Employee Retirement Income Security Act (“ERISA”), shareholder derivative actions, shareholder demands and government investigations relating to losses in the synthetic credit portfolio managed by the Firm’s Chief Investment Office (“CIO”). The Firm has received requests for documents and information in connection with governmental inquiries and investigations by Congress, the OCC, the Federal Reserve, the U.S. Department of Justice (the “DOJ”), the Securities and Exchange Commission (the “SEC”), the Commodity Futures Trading Commission (the “CFTC”), the UK Financial Services Authority, the State of Massachusetts and other government agencies. The Firm is cooperating with these investigations.

Four putative class actions alleging violations of Sections 10(b) and 20(a) of the Securities Exchange Act of 1934 and Rule 10b-5 thereunder were filed on behalf of purchasers of the Firm's common stock. The cases were consolidated, lead plaintiffs were appointed pursuant to the Private Securities Litigation Reform Act, and a consolidated amended complaint was filed in November 2012 that defines the putative class as purchasers of the Firm's common stock between February 24, 2010 and May 21, 2012. The consolidated amended complaint alleges that the Firm and certain current and former officers made false or misleading statements concerning CIO's role, the Firm's risk management practices and the Firm's financial results, as well as in connection with the disclosure of losses in the synthetic credit portfolio in 2012.

Separately, two putative class actions were filed on behalf of participants who held the Firm's common stock in the Firm's retirement plans. These actions assert claims under ERISA for alleged breaches of fiduciary duties by the Firm, certain affiliates and certain current and former directors

## Notes to consolidated financial statements

and officers in connection with the management of those plans. The complaints generally allege that defendants breached the duty of prudence by allowing investment in the Firm's common stock when they knew or should have known that such stock was unsuitable for the plans and that the Firm and certain current and former officers made false or misleading statements concerning the Firm's financial condition. These actions have been consolidated, and a consolidated amended complaint was filed in December 2012 which alleges a class period of December 20, 2011 to July 12, 2012. The consolidated amended complaint contains allegations similar to those in the original complaints, but now asserts claims only on behalf of participants in the Firm's 401(k) Savings Plan.

Four shareholder derivative actions have also been filed, purportedly on behalf of the Firm, against certain of the Firm's current and former directors and officers for alleged breaches of their fiduciary duties. These actions generally allege that defendants failed to exercise adequate oversight over CIO and to manage the risk of CIO's trading activities, which allegedly led to CIO's losses. Two of these four actions have been consolidated, and a consolidated amended complaint was filed in December 2012. An amended complaint in one of the other derivative actions was filed in January 2013.

The consolidated securities action, consolidated ERISA action and the consolidated shareholder derivative action are pending in the United States District Court for the Southern District of New York, while the two other derivative actions are pending in New York State court. In October 2012, defendants moved to dismiss one of the two shareholder derivative actions pending in New York State court on the ground that plaintiff failed to make a demand on the Firm's Board of Directors or adequately allege demand futility, as required by applicable Delaware law. Defendants have not yet responded to the complaints in any of the other actions.

In January 2013, JPMorgan Chase & Co. entered into a Consent Order with the Federal Reserve and JPMorgan Chase Bank, N.A. entered into a Consent Order with the OCC arising out of the Federal Reserve's and the OCC's reviews of the CIO, including the synthetic credit portfolio previously held by the CIO. The Consent Orders relate to risk management, model governance and other control functions related to CIO and certain other trading activities at the Firm. Many of the actions required by the Consent Orders have already been, or are in the process of being, implemented by the Firm.

City of Milan Litigation and Criminal Investigation. In January 2009, the City of Milan, Italy (the "City") issued civil proceedings against (among others) JPMorgan Chase Bank, N.A. and J.P. Morgan Securities plc (together, "JPMorgan Chase") in the District Court of Milan. The proceedings relate to (a) a bond issue by the City in June 2005 (the "Bond"), and (b) an associated swap transaction, which was subsequently restructured on a number of occasions between 2005 and 2007 (the "Swap"). The City seeks

damages and/or other remedies against JPMorgan Chase (among others) on the grounds of alleged "fraudulent and deceitful acts" and alleged breach of advisory obligations in connection with the Swap and the Bond, together with related swap transactions with other counterparties. The Firm has entered into a settlement agreement with the City to resolve the City's civil proceedings.

In March 2010, a criminal judge directed four current and former JPMorgan Chase personnel and JPMorgan Chase Bank, N.A. (as well as other individuals and three other banks) to go forward to a full trial that started in May 2010. The verdict, rendered in December 2012, acquitted two of the JPMorgan Chase personnel and found the other two guilty of aggravated fraud with sanctions of prison sentences (that were automatically suspended under applicable law), fines and a ban from dealing with Italian public bodies for one year. In addition, JPMorgan Chase (along with other banks involved) was found liable for breaches of Italian administrative law, fined €1 million and was ordered to forfeit its profit from the transaction, which totaled €24.7 million. JPMorgan Chase and the individuals plan to appeal the verdict, and none of the sanctions will take effect until all appeal avenues have been exhausted.

Enron Litigation. JPMorgan Chase and certain of its officers and directors are involved in two lawsuits seeking damages arising out of the Firm's banking relationships with Enron Corp. and its subsidiaries ("Enron"). Motions to dismiss are pending in both of these lawsuits: an individual action by Enron investors and an action by an Enron counterparty. A number of actions and other proceedings against the Firm previously were resolved, including a class action lawsuit captioned *Newby v. Enron Corp.* and adversary proceedings brought by Enron's bankruptcy estate.

FERC Matters. The Federal Energy Regulatory Commission (the “FERC”) is investigating the Firm’s bidding practices in certain organized power markets. Additionally, in November 2012, the FERC issued an Order suspending a JPMorgan Chase energy subsidiary’s market-based rate authority for six months commencing on April 1, 2013, based on its finding that statements concerning discovery obligations made in submissions related to the FERC investigation violated FERC rules regarding misleading information.

Interchange Litigation. A group of merchants and retail associations filed a series of putative class action complaints relating to interchange in several federal courts. The complaints allege, among other claims, that Visa and MasterCard, as well as certain other banks, conspired to set the price of credit and debit card interchange fees, enacted respective rules in violation of antitrust laws, and engaged in tying/bundling and exclusive dealing. All cases were consolidated in the United States District Court for the Eastern District of New York for pretrial proceedings.

In October 2012, Visa, Inc., its wholly-owned subsidiaries Visa U.S.A. Inc. and Visa International Service Association, MasterCard Incorporated, MasterCard International Incorporated and various United States financial institution defendants, including JPMorgan Chase & Co., JPMorgan

Chase Bank, N.A., Chase Bank USA, N.A., Chase Paymentech Solutions, LLC and certain predecessor institutions, entered into a settlement agreement (the "Settlement Agreement") to resolve the claims of the U.S. merchant and retail association plaintiffs (the "Class Plaintiffs") in the multi-district litigation. In November 2012, the Court entered an order preliminarily approving the Settlement Agreement, which provides for, among other things, a cash payment of \$6.05 billion to the Class Plaintiffs (of which the Firm's share is approximately 20%), and an amount equal to ten basis points of credit card interchange for a period of eight months to be measured from a date within 60 days of the end of the opt-out period. The Settlement Agreement also provides for modifications to each credit card network's rules, including those that prohibit surcharging credit card transactions. The rule modifications became effective in January 2013. The Settlement Agreement is subject to final approval by the Court.

**Investment Management Litigation.** The Firm is defending three pending cases that allege that investment portfolios managed by J.P. Morgan Investment Management Inc. were inappropriately invested in securities backed by residential real estate collateral. Plaintiffs claim that JPMorgan Investment Management is liable for losses of more than \$1 billion in market value of these securities. In the case filed by Assured Guaranty (U.K.) and the case filed by Ambac Assurance UK Limited in New York state court, discovery is proceeding on claims for breach of contract, breach of fiduciary duty and gross negligence. The third case, filed by CMMF LLP in New York state court, asserts claims under New York law for breach of fiduciary duty, negligence, breach of contract and negligent misrepresentation. Trial of the CMMF action was completed in February 2013, and the Court's decision is pending.

**Lehman Brothers Bankruptcy Proceedings.** In May 2010, Lehman Brothers Holdings Inc. ("LBHI") and its Official Committee of Unsecured Creditors (the "Committee") filed a complaint (and later an amended complaint) against JPMorgan Chase Bank, N.A. in the United States Bankruptcy Court for the Southern District of New York that asserts both federal bankruptcy law and state common law claims, and seeks, among other relief, to recover \$8.6 billion in collateral that was transferred to JPMorgan Chase Bank, N.A. in the weeks preceding LBHI's bankruptcy. The amended complaint also seeks unspecified damages on the grounds that JPMorgan Chase Bank, N.A.'s collateral requests hastened LBHI's bankruptcy. The Firm moved to dismiss plaintiffs' amended complaint in its entirety, and also moved to transfer the litigation from the Bankruptcy Court to the United States District Court for the Southern District of New York. In April 2012, the Bankruptcy Court issued a decision granting in part and denying in part the Firm's motion to dismiss. The Court dismissed the counts of the amended complaint seeking avoidance of the allegedly constructively fraudulent and preferential transfers made to the Firm during the months of August and September 2008. The Court denied the Firm's motion to dismiss as to the other claims, including claims that allege intentional

misconduct. In September 2012, the District Court denied the transfer motion without prejudice to its renewal in the future, but stated that any trial would likely have to be conducted before the District Court.

The Firm also filed counterclaims against LBHI alleging that LBHI fraudulently induced the Firm to make large clearing advances to Lehman against inappropriate collateral, which left the Firm with more than \$25 billion in claims (the "Clearing Claims") against the estate of Lehman Brothers Inc. ("LBI"), LBHI's broker-dealer subsidiary. These claims have been paid in full, subject to the outcome of the litigation. Discovery is ongoing.

LBHI and the Committee have filed an objection to the deficiency claims asserted by JPMorgan Chase Bank, N.A. against LBHI with respect to the Clearing Claims, principally on the grounds that the Firm had not conducted the sale of the securities collateral held for such claims in a commercially reasonable manner. The Firm responded to LBHI's objection in November 2011. Discovery is ongoing.

LBHI and several of its subsidiaries that had been Chapter 11 debtors have filed a separate complaint and objection to derivatives claims asserted by the Firm alleging that the amount of the derivatives claims had been overstated and challenging certain set-offs taken by JPMorgan Chase entities to recover on the claims. The Firm has not yet responded to the amended derivatives complaint and objection, and discovery has not begun.

**LIBOR Investigations and Litigation.** JPMorgan Chase has received subpoenas and requests for documents and, in some cases, interviews, from federal and state agencies and entities, including the DOJ, CFTC, SEC, and various state attorneys general, as well as the European Commission, UK Financial Services Authority, Canadian Competition Bureau, Swiss Competition Commission and other regulatory authorities and banking associations around the world.

The documents and information sought relate primarily to the process by which interest rates were submitted to the British Bankers Association (“BBA”) in connection with the setting of the BBA’s London Interbank Offered Rate (“LIBOR”) for various currencies, principally in 2007 and 2008. Some of the inquiries also relate to similar processes by which information on rates is submitted to European Banking Federation (“EBF”) in connection with the setting of the EBF’s Euro Interbank Offered Rates (“EURIBOR”) and to the Japanese Bankers’ Association for the setting of Tokyo Interbank Offered Rates (“TIBOR”) as well as to other processes for the setting of other reference rates in various parts of the world during similar time periods. The Firm is cooperating with these inquiries.

In addition, the Firm has been named as a defendant along with other banks in a series of individual and class actions filed in various United States District Courts in which plaintiffs make varying allegations that in various periods, starting in 2000 or later, defendants either individually or collectively manipulated the U.S. dollar LIBOR, Yen LIBOR and Euroyen TIBOR rates by submitting rates that were artificially low or high. Plaintiffs allege that they transacted

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in loans, derivatives or other financial instruments whose values are impacted by changes in U.S. dollar LIBOR, Yen LIBOR, or Euroyen TIBOR and assert a variety of claims including antitrust claims seeking treble damages. In 2011, a number of class actions were filed against LIBOR panel banks, including the Firm, asserting various federal and state law claims relating to the alleged manipulation of U.S. dollar LIBOR. These purported class actions were consolidated for pre-trial purposes in the United States District Court for the Southern District of New York before District Judge Buchwald, who appointed interim lead counsel for three proposed classes: (i) direct purchasers of U.S. dollar LIBOR-based financial instruments in the over-the-counter market; (ii) purchasers of U.S. dollar LIBOR-based financial instruments on an exchange; and (iii) purchasers of debt securities that pay an interest rate linked to U.S. dollar LIBOR. The defendants moved to dismiss all claims in these three putative class actions and three related individual actions pending before the Court. The Court has not yet ruled on the defendants' motions to dismiss. Since April 2012, a number of additional U.S. dollar LIBOR putative class actions and individual actions have been filed in various courts. Defendants have moved to transfer each of these cases to the consolidated action pending in the Southern District of New York. To date, all but three of these actions have been transferred. The actions that have been transferred are stayed until the Court rules on the defendants' pending motions to dismiss. The Firm also has been named as a defendant in a purported class action filed in the United States District Court for the Southern District of New York which seeks to bring claims on behalf of plaintiffs who purchased or sold exchange-traded Euroyen futures and options contracts. The plaintiff has been granted leave to file a Second Amended Complaint, and defendants will have 60 days after the filing of that amended pleading to respond.

Madoff Litigation. JPMorgan Chase & Co., JPMorgan Chase Bank, N.A., J.P. Morgan Securities LLC, and J.P. Morgan Securities plc have been named as defendants in a lawsuit brought by the trustee (the "Trustee") for the liquidation of Bernard L. Madoff Investment Securities LLC ("Madoff"). The Trustee has served an amended complaint in which he has asserted 28 causes of action against JPMorgan Chase, 20 of which seek to avoid certain transfers (direct or indirect) made to JPMorgan Chase that are alleged to have been preferential or fraudulent under the federal Bankruptcy Code and the New York Debtor and Creditor Law. The remaining causes of action involve claims for, among other things, aiding and abetting fraud, aiding and abetting breach of fiduciary duty, conversion, contribution and unjust enrichment in connection with Madoff's Ponzi scheme. The complaint asserts common law claims that purport to seek approximately \$19 billion in damages, together with bankruptcy law claims to recover approximately \$425 million in transfers that JPMorgan Chase allegedly received directly or indirectly from Bernard

Madoff's brokerage firm. In October 2011, the United States District Court for the Southern District of New York granted JPMorgan Chase's motion to dismiss the common law claims asserted by the Trustee, and returned the remaining claims to the Bankruptcy Court for further proceedings. The Trustee appealed this decision and oral argument on the appeal was held in November 2012. The Firm is awaiting the Court's decision.

Separately, J.P. Morgan Trust Company (Cayman) Limited, JPMorgan (Suisse) SA, J.P. Morgan Securities plc, Bear Stearns Alternative Assets International Ltd., J.P. Morgan Clearing Corp., J.P. Morgan Bank Luxembourg SA, and J.P. Morgan Markets Limited (formerly Bear Stearns International Limited) have been named as defendants in lawsuits presently pending in Bankruptcy Court in New York arising out of the liquidation proceedings of Fairfield Sentry Limited and Fairfield Sigma Limited (together, "Fairfield"), so-called Madoff feeder funds. These actions are based on theories of mistake and restitution, among other theories, and seek to recover payments made to defendants by the funds totaling approximately \$155 million. Pursuant to an agreement with the Trustee, the liquidators of Fairfield have voluntarily dismissed their action against J.P. Morgan Securities plc without prejudice to refile. The other actions remain outstanding. In addition, a purported class action was brought by investors in certain feeder funds against JPMorgan Chase in the United States District Court for the Southern District of New York, as was a motion by separate potential class plaintiffs to add claims against JPMorgan Chase & Co., JPMorgan Chase Bank, N.A., J.P. Morgan Securities LLC and J.P. Morgan Securities plc to an already-pending purported class action in the same court. The allegations in these complaints largely track those raised by the Trustee. The Court dismissed these complaints and plaintiffs have appealed.

The Firm is a defendant in five other Madoff-related actions pending in New York state court and one purported class action in federal District Court in New York. The allegations in all of these actions are essentially identical, and

involve claims against the Firm for, among other things, aiding and abetting breach of fiduciary duty, conversion and unjust enrichment. The Firm has moved to dismiss both the state and federal actions.

The Firm is also responding to various governmental inquiries concerning the Madoff matter.

MF Global. JPMorgan Chase & Co. was named as one of several defendants in a number of putative class action lawsuits brought by former customers of MF Global in federal District Courts in New York, Illinois and Montana. The lawsuits have been consolidated before the United States District Court for the Southern District of New York. The actions alleged, among other things, that the Firm aided and abetted MF Global's alleged misuse of customer money and breaches of fiduciary duty and was unjustly enriched by the transfer of certain customer segregated funds by MF Global. The Firm has entered into a tolling agreement with counsel for the customer class plaintiffs



and an individual plaintiff, pursuant to which the plaintiffs have agreed not to pursue any such claims against the Firm in these actions for so long as the tolling agreement remains in effect.

J.P. Morgan Securities LLC has been named as one of several defendants in a number of purported class actions filed by purchasers of MF Global's publicly traded securities, including the securities issued pursuant to MF Global's June 2010 secondary offering of common stock and February 2011 and August 2011 convertible note offerings. The actions have been consolidated before the United States District Court for the Southern District of New York. In August 2012, the lead plaintiffs filed an amended complaint which asserts violations of the Securities Act of 1933 against the underwriter defendants and alleges that the offering documents contained materially false and misleading statements and omissions regarding MF Global's financial position, internal controls and risk management, as such topics relate to its exposure to European sovereign debt. Defendants moved to dismiss in October 2012. Those motions remain pending.

In June 2012, the Securities Investor Protection Act ("SIPA") Trustee issued a Report of the Trustee's Investigation and Recommendations, and stated that he is considering potential claims against the Firm with respect to certain transfers identified in the Report. Discussions regarding possible resolution of potential SIPA Trustee claims and customer claims against the Firm are ongoing.

The Firm has responded to and continues to respond to inquiries from the CFTC, SEC, SIPA Trustee and Bankruptcy Trustee concerning MF Global.

Mortgage-Backed Securities and Repurchase Litigation and Mortgage-Related Regulatory Investigations. JPMorgan Chase and affiliates, Bear Stearns and affiliates and Washington Mutual affiliates have been named as defendants in a number of cases in their various roles as issuer, originator or underwriter in MBS offerings. These cases include purported class action suits, actions by individual purchasers of securities or by trustees for the benefit of purchasers of securities, an action by the New York State Attorney General and actions by monoline insurance companies that guaranteed payments of principal and interest for particular tranches of securities offerings. Although the allegations vary by lawsuit, these cases generally allege that the offering documents for securities issued by numerous securitization trusts contained material misrepresentations and omissions, including with regard to the underwriting standards pursuant to which the underlying mortgage loans were issued, or assert that various representations or warranties relating to the loans were breached at the time of origination. There are currently pending and tolled investor claims involving approximately \$170 billion of such securities. In addition, and as described below, there are pending and threatened claims by monoline insurers and by and on behalf of

trustees that involve some of these and other securitizations.

In the actions against the Firm as an MBS issuer (and, in some cases, also as an underwriter of its own MBS offerings), three purported class actions are pending against JPMorgan Chase and Bear Stearns, and/or certain of their affiliates and current and former employees, in the United States District Courts for the Eastern and Southern Districts of New York. Motions to dismiss have been largely denied in these cases, although in certain cases defendants have sought to appeal aspects of the decision, and they are in various stages of litigation. A settlement of a fourth purported class action that is pending in the United States District Court for the Western District of Washington against Washington Mutual affiliates, WaMu Asset Acceptance Corp. and WaMu Capital Corp. and certain former officers or directors of WaMu Asset Acceptance Corp., has received final court approval.

In addition to class actions, the Firm is also a defendant in individual actions brought against certain affiliates of JPMorgan Chase, Bear Stearns and Washington Mutual as issuers (and, in some cases, as underwriters) of MBS. These actions involve claims by or to benefit various institutional investors and governmental agencies. These actions are pending in federal and state courts across the United States and are in various stages of litigation.

In actions against the Firm solely as an underwriter of other issuers' MBS offerings, the Firm has contractual rights to indemnification from the issuers. However, those indemnity rights may prove effectively unenforceable where the issuers are now defunct, such as in pending cases where the Firm has been named involving affiliates of IndyMac Bancorp. A settlement of a purported class action involving Thornburg Mortgage MBS offerings that was pending against the Firm has received preliminary court approval. The Firm may also be contractually obligated to indemnify underwriters in certain deals it issued.

EMC Mortgage LLC (formerly EMC Mortgage Corporation) (“EMC”), an indirect subsidiary of JPMorgan Chase & Co., and certain other JPMorgan Chase entities currently are defendants in nine pending actions commenced by bond insurers that guaranteed payments of principal and interest on certain classes of 19 different MBS offerings. These actions are pending in federal and state courts in New York and are in various stages of litigation. Certain JPMorgan Chase entities, in their capacities as alleged successors in interest to Bear Stearns and EMC, have been named as defendants in a civil suit filed by the New York State Attorney General in New York state court in connection with Bear Stearns’ due diligence and quality control practices relating to MBS.

The Firm or its affiliates are defendants in actions brought by trustees or master servicers of various MBS trusts and others on behalf of the purchasers of securities issued by those trusts. The first action was commenced by Deutsche Bank National Trust Company, acting as trustee for various

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MBS trusts, against the Firm and the FDIC based on MBS issued by Washington Mutual Bank and its affiliates; that case is described in the Washington Mutual Litigations section below. The other actions are at various initial stages of litigation in the New York and Delaware state courts, including actions brought by MBS trustees, each specific to one or more MBS transactions, against EMC and/or JPMorgan Chase. These cases generally allege breaches of various representations and warranties regarding securitized loans and seek repurchase of those loans, as well as indemnification of attorneys' fees and costs and other remedies.

There is no assurance that the Firm will not be named as a defendant in additional MBS-related litigation, and the Firm has entered into agreements with a number of entities that purchased such securities that toll applicable limitations periods with respect to their claims. In addition, the Firm has received several demands by securitization trustees that threaten litigation, as well as demands by investors directing or threatening to direct trustees to investigate claims or bring litigation, based on purported obligations to repurchase loans out of securitization trusts and alleged servicing deficiencies. These include but are not limited to a demand from a law firm, as counsel to a group of purchasers of MBS that purport to have 25% or more of the voting rights in as many as 191 different trusts sponsored by the Firm or its affiliates with an original principal balance of more than \$174 billion (excluding 52 trusts sponsored by Washington Mutual, with an original principal balance of more than \$58 billion), made to various trustees to investigate potential repurchase and servicing claims. Further, there have been repurchase and servicing claims made in litigation against trustees not affiliated with the Firm, but involving trusts that the Firm sponsored. In April 2012, the New York state court granted the Firm's motion to dismiss a shareholder complaint against the Firm and two affiliates, members of the boards of directors thereof and certain employees, asserting claims based on alleged wrongful actions and inactions relating to residential mortgage originations and securitizations. The plaintiff has appealed the order. A second shareholder complaint has been filed in New York state court against current and former members of the Firm's Board of Directors and the Firm, as nominal defendant, alleging that the Board allowed the Firm to engage in wrongful conduct regarding the sale of residential MBS and failed to implement adequate internal controls to prevent such wrongdoing.

In addition to the above-described litigation, the Firm has also received, and responded to, a number of subpoenas and informal requests for information from federal and state authorities concerning mortgage-related matters, including inquiries concerning a number of transactions involving the Firm and its affiliates' origination and purchase of whole loans, underwriting and issuance of MBS, treatment of early payment defaults, potential breaches of securitization representations and warranties, reserves and

due diligence in connection with securitizations. In November 2012, the Firm settled with the SEC over its investigations of J.P. Morgan Securities LLC and J.P. Morgan Acceptance Corporation I relating to delinquency disclosures, and of Bear Stearns entities and J.P. Morgan Securities LLC relating to disclosures concerning settlements of claims against originators involving loans included in a number of Bear Stearns securitizations. Pursuant to the settlement, the named entities, without admitting or denying the SEC's allegations, consented to the entry of a final judgment ordering certain relief, including an injunction and the payment of approximately \$296.9 million in disgorgement, penalties and interest. The United States District Court for the District of Columbia approved the settlement and entered the judgment in January 2013. The Firm continues to respond to other MBS-related regulatory inquiries.

**Mortgage Foreclosure-Related Investigations and Litigation.** The Attorneys General of Massachusetts and New York have separately filed lawsuits against the Firm, other servicers and a mortgage recording company asserting claims for various alleged wrongdoings relating to mortgage assignments and use of the industry's electronic mortgage registry. The court granted in part and denied in part the defendants' motion to dismiss the Massachusetts action and the Firm has moved to dismiss the New York action.

Six purported class action lawsuits were filed against the Firm relating to its mortgage foreclosure procedures. Two of the class actions have been dismissed with prejudice and one settled on an individual basis. Of the remaining active actions, two are in the discovery phase and a motion to dismiss is pending in the remaining action. Additionally, a purported class action brought against Bank of America involving an EMC loan has been dismissed.

Two shareholder derivative actions have been filed in New York Supreme Court against the Firm's Board of Directors alleging that the Board failed to exercise adequate oversight as to wrongful conduct by the Firm regarding mortgage servicing. These actions seek declaratory relief and damages. In July 2012, the Court granted defendants' motion to dismiss the complaint in the first-filed action and gave plaintiff 45 days in which to file an amended complaint. In October 2012, the Court entered a stipulated order consolidating the actions and staying all proceedings pending the plaintiffs' decision whether to file a consolidated complaint after the Firm completes its response to a demand submitted by one of the plaintiffs under Section 220 of the Delaware General Corporation Law.

The Civil Division of the United States Attorney's Office for the Southern District of New York is conducting an investigation concerning the Firm's compliance with the requirements of the Federal Housing Administration's Direct Endorsement Program. The Firm is cooperating in that investigation.

On January 7, 2013, the Firm announced that it and a number of other financial institutions entered into a

settlement agreement with the OCC and the Federal Reserve providing for the termination of the Independent Foreclosure Review programs that had been required under the Consent Orders with such banking regulators relating to each bank's residential mortgage servicing, foreclosure and loss-mitigation activities. Under this settlement, the Firm will make a cash payment of \$753 million into a settlement fund for distribution to qualified borrowers. The Firm has also committed an additional \$1.2 billion to foreclosure prevention actions under the settlement, which will be fulfilled through credits given to the Firm for modifications, short sales and other types of borrower relief.

**Municipal Derivatives Investigations and Litigation.** Purported class action lawsuits and individual actions have been filed against JPMorgan Chase and Bear Stearns, as well as numerous other providers and brokers, alleging antitrust violations in the market for financial instruments related to municipal bond offerings referred to collectively as "municipal derivatives." In July 2011, the Firm settled with federal and state governmental agencies to resolve their investigations into similar alleged conduct. The municipal derivatives actions were consolidated and/or coordinated in the United States District Court for the Southern District of New York. In December 2012, the District Court granted final approval of a settlement calling for payment of approximately \$43 million. Certain class members opted out of the settlement, including 27 plaintiffs named in individual actions already pending against JPMorgan.

In addition, civil actions have been commenced against the Firm relating to certain Jefferson County, Alabama (the "County") warrant underwritings and swap transactions. In November 2009, J.P. Morgan Securities LLC settled with the SEC to resolve its investigation into those transactions. Following that settlement, the County filed an action against the Firm and several other defendants in Alabama state court. An action on behalf of a purported class of sewer rate payers has also been filed in Alabama state court. The suits allege that the Firm made payments to certain third parties in exchange for being chosen to underwrite more than \$3 billion in warrants issued by the County and to act as the counterparty for certain swaps executed by the County. The complaints also allege that the Firm concealed these third-party payments and that, but for this concealment, the County would not have entered into the transactions. The Court denied the Firm's motions to dismiss the complaints in both proceedings. In November and December 2011, the County filed notices of bankruptcy with the trial court in each of the cases and with the Alabama Supreme Court stating that it was a Chapter 9 Debtor in the U.S. Bankruptcy Court for the Northern District of Alabama. Subsequently, the portion of the sewer rate payer action involving claims against the Firm was removed by certain defendants to the United States District Court for the Northern District of Alabama. In its order finding that removal of this action was proper, the District Court referred the action to the District's Bankruptcy Court, where the action remains pending. Limited discovery has taken

place in the County's action and additional discovery may take place in 2013.

In September 2012, a group of purported creditors of the County initiated an adversary proceeding and filed a purported class action complaint alleging that certain warrants were issued unlawfully and were thus null and void and seeking \$1.6 billion in damages from the Firm and other defendants involved in the Jefferson County financing transactions. The Firm, along with a number of other defendants, moved to dismiss the complaint in November 2012. Plaintiffs subsequently agreed to dismiss their tort claims seeking damages and are solely pursuing their claims relating to the validity of the warrants. The motion to dismiss these claims remains pending.

Two insurance companies that guaranteed the payment of principal and interest on warrants issued by the County have filed separate actions against the Firm in New York state court. Their complaints assert that the Firm fraudulently misled them into issuing insurance based upon substantially the same alleged conduct described above and other alleged non-disclosures. One insurer claims that it insured an aggregate principal amount of nearly \$1.2 billion and seeks unspecified damages in excess of \$400 million as well as unspecified punitive damages. The other insurer claims that it insured an aggregate principal amount of more than \$378 million and seeks recovery of \$4 million allegedly paid under the policies to date as well as any future payments and unspecified punitive damages. In December 2010, the court denied the Firm's motions to dismiss each of the complaints. The Firm has filed a cross-claim and a third party claim against the County for indemnity and contribution. The County moved to dismiss, which the court denied in August 2011. In consequence of its November 2011 bankruptcy filing, the County has asserted that these actions are stayed. In February 2012, one of the insurers filed a motion for a declaration that its action is not stayed as against the Firm or, in the alternative, for an order lifting the stay as against the Firm. The Firm

and the County opposed the motion, which remains pending.

Option Adjustable Rate Mortgage Litigation. The Firm is defending one purported and three certified class actions, all pending in federal courts in California, which assert that several JPMorgan Chase entities violated the federal Truth in Lending Act and state unfair business practice statutes in failing to provide adequate disclosures in Option Adjustable Rate Mortgage (“ARM”) loans regarding the resetting of introductory interest rates and that negative amortization was certain to occur if a borrower made the minimum monthly payment. With respect to the former Washington Mutual and Bear Stearns defendants who purchased Option ARM loans from third-party originators, plaintiffs allege that those entities aided and abetted the original lenders’ alleged violations. Classes have been certified in three of the actions. In one of the certified class actions, the Firm has moved for decertification of the class and for summary

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judgment. The Firm was unsuccessful in seeking permission to appeal the remaining class certification decisions. **Overdraft Fee/Debit Posting Order Litigation.** JPMorgan Chase Bank, N.A. has been named as a defendant in several purported class actions relating to its practices in posting debit card transactions to customers' deposit accounts. Plaintiffs allege that the Firm improperly re-ordered debit card transactions from the highest amount to the lowest amount before processing these transactions in order to generate unwarranted overdraft fees. Plaintiffs contend that the Firm should have processed such transactions in the chronological order in which they were authorized. Plaintiffs seek the disgorgement of all overdraft fees paid to the Firm by plaintiffs since approximately 2003 as a result of the re-ordering of debit card transactions. The claims against the Firm have been consolidated with numerous complaints against other national banks in multi-District litigation pending in the United States District Court for the Southern District of Florida. The Firm reached an agreement to settle this matter in exchange for the Firm paying \$110 million and agreeing to change certain overdraft fee practices. In December 2012, the Court granted final approval of the settlement.

**Petters Bankruptcy and Related Matters.** JPMorgan Chase and certain of its affiliates, including One Equity Partners ("OEP"), have been named as defendants in several actions filed in connection with the receivership and bankruptcy proceedings pertaining to Thomas J. Petters and certain affiliated entities (collectively, "Petters") and the Polaroid Corporation. The principal actions against JPMorgan Chase and its affiliates have been brought by a court-appointed receiver for Petters and the trustees in bankruptcy proceedings for three Petters entities. These actions generally seek to avoid, on fraudulent transfer and preference grounds, certain purported transfers in connection with (i) the 2005 acquisition by Petters of Polaroid, which at the time was majority-owned by OEP; (ii) two credit facilities that JPMorgan Chase and other financial institutions entered into with Polaroid; and (iii) a credit line and investment accounts held by Petters. The actions collectively seek recovery of approximately \$450 million. Defendants have moved to dismiss the complaints in the actions filed by the Petters bankruptcy trustees and the parties have agreed to stay the action brought by the Receiver until after the Bankruptcy Court rules on the pending motions.

**Securities Lending Litigation.** JPMorgan Chase Bank, N.A. was named as a defendant in a putative class action asserting ERISA and other claims pending in the United States District Court for the Southern District of New York brought by participants in the Firm's securities lending business.

The action concerns investments of approximately \$500 million in Lehman Brothers medium-term notes. The Court granted the Firm's motion to dismiss all claims in April 2012. The plaintiff filed a third amended complaint, and the Firm's motion to dismiss this complaint is

pending. Discovery has been stayed until the Firm's motion to dismiss is decided.

**Washington Mutual Litigations.** Proceedings related to Washington Mutual's failure are pending before the United States District Court for the District of Columbia and include a lawsuit brought by Deutsche Bank National Trust Company, initially against the FDIC, asserting an estimated \$6 billion to \$10 billion in damages based upon alleged breach of various mortgage securitization agreements and alleged violation of certain representations and warranties given by certain Washington Mutual, Inc. ("WMI") subsidiaries in connection with those securitization agreements. The case includes assertions that JPMorgan Chase may have assumed liabilities for alleged breaches of representations and warranties in the mortgage securitization agreements. The District Court denied as premature motions by the Firm and the FDIC that sought a ruling on whether the FDIC retained liability for Deutsche Bank's claims. Discovery is underway.

In addition, JPMorgan Chase was sued in an action originally filed in state court in Texas (the "Texas Action") by certain holders of WMI common stock and debt of WMI and Washington Mutual Bank who seek unspecified damages alleging that JPMorgan Chase acquired substantially all of the assets of Washington Mutual Bank from the FDIC at a price that was allegedly too low. The Texas Action was transferred to the United States District Court for the District of Columbia, which ultimately granted JPMorgan Chase's and the FDIC's motions to dismiss the complaint, but the United States Court of Appeals for the District of Columbia Circuit reversed the District Court's dismissal and remanded the case for further proceedings. Plaintiffs, who sue now only as holders of Washington Mutual Bank debt following their voluntary dismissal of claims brought as holders of WMI common stock and debt, have filed an amended complaint alleging that JPMorgan Chase caused the closure of Washington Mutual Bank and damaged them

by causing their bonds issued by Washington Mutual Bank, which had a total face value of \$38 million, to lose substantially all of their value. JPMorgan Chase and the FDIC moved to dismiss this action and the District Court dismissed the case except as to the plaintiffs' claim that the Firm tortiously interfered with the plaintiffs' bond contracts with Washington Mutual Bank prior to its closure.

\* \* \*

In addition to the various legal proceedings discussed above, JPMorgan Chase and its subsidiaries are named as defendants or are otherwise involved in a substantial number of other legal proceedings. The Firm believes it has meritorious defenses to the claims asserted against it in its currently outstanding legal proceedings and it intends to defend itself vigorously in all such matters. Additional legal proceedings may be initiated from time to time in the future.

The Firm has established reserves for several hundred of its currently outstanding legal proceedings. The Firm accrues for potential liability arising from such proceedings when it



is probable that such liability has been incurred and the amount of the loss can be reasonably estimated. The Firm evaluates its outstanding legal proceedings each quarter to assess its litigation reserves, and makes adjustments in such reserves, upwards or downwards, as appropriate, based on management's best judgment after consultation with counsel. During the years ended December 31, 2012, 2011 and 2010, the Firm incurred \$5.0 billion, \$4.9 billion and \$7.4 billion, respectively, of litigation expense. There is no assurance that the Firm's litigation reserves will not need to be adjusted in the future.

In view of the inherent difficulty of predicting the outcome of legal proceedings, particularly where the claimants seek very large or indeterminate damages, or where the matters present novel legal theories, involve a large number of parties or are in early stages of discovery, the Firm cannot state with confidence what will be the eventual outcomes of

the currently pending matters, the timing of their ultimate resolution or the eventual losses, fines, penalties or impact related to those matters. JPMorgan Chase believes, based upon its current knowledge, after consultation with counsel and after taking into account its current litigation reserves, that the legal proceedings currently pending against it should not have a material adverse effect on the Firm's consolidated financial condition. The Firm notes, however, that in light of the uncertainties involved in such proceedings, there is no assurance the ultimate resolution of these matters will not significantly exceed the reserves it has currently accrued; as a result, the outcome of a particular matter may be material to JPMorgan Chase's operating results for a particular period, depending on, among other factors, the size of the loss or liability imposed and the level of JPMorgan Chase's income for that period.

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## Note 32 – International operations

The following table presents income statement-related and balance sheet-related information for JPMorgan Chase by major international geographic area. The Firm defines international activities for purposes of this footnote presentation as business transactions that involve clients residing outside of the U.S., and the information presented below is based predominantly on the domicile of the client, the location from which the client relationship is managed, or the location of the trading desk. However, many of the Firm's U.S. operations serve international businesses.

As the Firm's operations are highly integrated, estimates and subjective assumptions have been made to apportion revenue and expense between U.S. and international operations. These estimates and assumptions are consistent with the allocations used for the Firm's segment reporting as set forth in Note 33 on pages 326–329 of this Annual Report. The Firm's long-lived assets for the periods presented are not considered by management to be significant in relation to total assets. The majority of the Firm's long-lived assets are located in the United States.

As of or for the year ended December 31, (in millions)	Revenue <sup>(c)</sup>	Expense <sup>(d)</sup>	Income before income tax expense	Net income	Total assets	
2012						
Europe/Middle East and Africa	\$10,522	\$9,326	\$1,196	\$1,508	\$553,147	(e)
Asia and Pacific	5,605	3,952	1,653	1,048	167,955	
Latin America and the Caribbean	2,328	1,580	748	454	53,984	
Total international	18,455	14,858	3,597	3,010	775,086	
North America <sup>(a)</sup>	78,576	53,256	25,320	18,274	1,584,055	
Total	\$97,031	\$68,114	\$28,917	\$21,284	\$2,359,141	
2011						
Europe/Middle East and Africa	\$16,212	\$9,157	\$7,055	\$4,844	\$566,866	(e)
Asia and Pacific	5,992	3,802	2,190	1,380	156,411	
Latin America and the Caribbean	2,273	1,711	562	340	51,481	
Total international	24,477	14,670	9,807	6,564	774,758	
North America <sup>(a)</sup>	72,757	55,815	16,942	12,412	1,491,034	
Total	\$97,234	\$70,485	\$26,749	\$18,976	\$2,265,792	
2010 <sup>(b)</sup>						
Europe/Middle East and Africa	\$14,135	\$8,777	\$5,358	\$3,635	\$446,547	(e)
Asia and Pacific	6,073	3,677	2,396	1,614	151,379	
Latin America and the Caribbean	1,750	1,181	569	362	33,192	
Total international	21,958	13,635	8,323	5,611	631,118	
North America <sup>(a)</sup>	80,736	64,200	16,536	11,759	1,486,487	
Total	\$102,694	\$77,835	\$24,859	\$17,370	\$2,117,605	

(a) Substantially reflects the U.S.

(b) The regional allocation of revenue, expense and net income for 2010 has been modified to conform with current allocation methodologies.

(c) Revenue is composed of net interest income and noninterest revenue.

(d) Expense is composed of noninterest expense and the provision for credit losses.

(e) Total assets for the U.K. were approximately \$498 billion, \$510 billion, and \$419 billion at December 31, 2012, 2011 and 2010, respectively.

## Note 33 – Business segments

The Firm is managed on a line of business basis. There are four major reportable business segments – Consumer & Community Banking, Corporate & Investment Bank, Commercial Banking and Asset Management. In addition, there is a Corporate/Private Equity segment. The business segments are determined based on the products and services

provided, or the type of customer served, and they reflect the manner in which financial information is currently evaluated by management. Results of these lines of business are presented on a managed basis. For a definition of managed basis, see Explanation and

Reconciliation of the Firm's use of non-GAAP financial measures, on pages 76–77 of this Annual Report. For a further discussion concerning JPMorgan Chase's business segments, see Business Segment Results on pages 78–79 of this Annual Report.

Business segment changes

Commencing with the fourth quarter of 2012, the Firm's business segments have been reorganized as follows:

Retail Financial Services and Card Services & Auto ("Card") business segments were combined to form one business segment called Consumer & Community Banking ("CCB"), and Investment Bank and Treasury & Securities Services

business segments were combined to form one business segment called Corporate & Investment Bank (“CIB”). Commercial Banking (“CB”) and Asset Management (“AM”) were not affected by the aforementioned changes. A technology function supporting online and mobile banking was transferred from Corporate/Private Equity to the CCB business segment. This transfer did not materially affect the results of either the CCB business segment or Corporate/Private Equity.

The business segment information that follows has been revised to reflect the business reorganization retroactive to January 1, 2010.

The following is a description of each of the Firm’s business segments, and the products and services they provide to their respective client bases.

#### Consumer & Community Banking

CCB serves consumers and businesses through personal service at bank branches and through ATMs, online, mobile and telephone banking. CCB is organized into Consumer & Business Banking, Mortgage Banking (including Mortgage Production, Mortgage Servicing and Real Estate Portfolios) and Card. Consumer & Business Banking offers deposit and investment products and services to consumers, and lending, deposit, and cash management and payment solutions to small businesses. Mortgage Banking includes mortgage origination and servicing activities, as well as portfolios comprised of residential mortgages and home equity loans, including the PCI portfolio acquired in the Washington Mutual transaction. Card issues credit cards to consumers and small businesses, provides payment services to corporate and public sector clients through its commercial card products, offers payment processing services to merchants, and provides auto and student loan services.

#### Corporate & Investment Bank

CIB offers a broad suite of investment banking, market-making, prime brokerage, and treasury and securities products and services to a global client base of corporations, investors, financial institutions, government and municipal entities. Within Banking, the CIB offers a full range of investment banking products and services in all major capital markets, including advising on corporate strategy and structure, capital-raising in equity and debt markets, as well as loan origination and syndication. Also included in Banking is Treasury Services, which includes transaction services, comprised primarily of cash management and liquidity solutions, and trade finance products. The Markets & Investor Services segment of the CIB is a global market-maker in cash securities and derivative instruments, and also offers sophisticated risk management solutions, prime brokerage, and research. Markets & Investor Services also includes the Securities Services business, a leading global custodian which holds, values, clears and services securities, cash and alternative investments for investors and broker-dealers, and manages depositary receipt programs globally.

#### Commercial Banking

CB delivers extensive industry knowledge, local expertise and dedicated service to U.S. and U.S. multinational clients, including corporations, municipalities, financial institutions and non-profit entities with annual revenue generally ranging from \$20 million to \$2 billion. CB provides financing to real estate investors and owners. Partnering with the Firm’s other businesses, CB provides comprehensive financial solutions, including lending, treasury services, investment banking and asset management to meet its clients’ domestic and international financial needs.

#### Asset Management

AM, with client assets of \$2.1 trillion, is a global leader in investment and wealth management. AM clients include institutions, high-net-worth individuals and retail investors in every major market throughout the world. AM offers investment management across all major asset classes including equities, fixed income, alternatives and money market funds. AM also offers multi-asset investment management, providing solutions to a broad range of clients’ investment needs. For individual investors, AM also provides retirement products and services, brokerage and banking services including trust and estate, loans, mortgages and deposits. The majority of AM’s client assets are in actively managed portfolios.

#### Corporate/Private Equity

The Corporate/Private Equity segment comprises Private Equity, Treasury, Chief Investment Office (“CIO”), and Other Corporate, which includes corporate staff units and expense that is centrally managed. Treasury and CIO are predominantly responsible for measuring, monitoring, reporting and managing the Firm’s liquidity, funding, capital

and structural interest rate and foreign exchange risks. The corporate staff units include Central Technology and Operations, Internal Audit, Executive, Finance, Human Resources, Legal & Compliance, Global Real Estate, General Services, Operational Control, Risk Management, and Corporate Responsibility & Public Policy. Other centrally managed expense includes the Firm's occupancy and pension-related expense that are subject to allocation to the businesses.

## Notes to consolidated financial statements

## Segment results

The following tables provide a summary of the Firm's segment results for 2012, 2011 and 2010 on a managed basis. Total net revenue (noninterest revenue and net interest income) for each of the segments is presented on a fully taxable-equivalent ("FTE") basis. Accordingly, revenue from investments that receive tax credits and tax-exempt securities is presented on a basis comparable to taxable investments and securities; this non-GAAP financial measure allows management to assess the comparability of revenue arising from both taxable and tax-exempt sources. The corresponding income tax impact related to tax-exempt items is recorded within income tax expense/(benefit). Effective January 1, 2012, the Firm revised the capital allocated to each of its businesses, reflecting additional refinement of each segment's Basel III Tier 1 common capital requirements.

Segment results and reconciliation<sup>(a)</sup>

As of or the year ended	Consumer & Community Banking			Corporate & Investment Bank			Commercial Banking			Asset Management	
	2012	2011	2010	2012	2011	2010	2012	2011	2010	2012	2011
December 31, (in millions, except ratios)											
Noninterest revenue	\$20,795	\$15,306	\$15,513	\$23,104	\$22,523	\$22,889	\$2,283	\$2,195	\$2,200	\$7,847	\$7,847
Net interest income	29,150	30,381	33,414	11,222	11,461	10,588	4,542	4,223	3,840	2,099	1,600
Total net revenue	49,945	45,687	48,927	34,326	33,984	33,477	6,825	6,418	6,040	9,946	9,447
Provision for credit losses	3,774	7,620	17,489	(479)	(285)	(1,247)	41	208	297	86	67
Noninterest expense	28,790	27,544	23,706	21,850	21,979	22,869	2,389	2,278	2,199	7,104	7,000
Income/(loss) before income tax expense/(benefit)	17,381	10,523	7,732	12,955	12,290	11,855	4,395	3,932	3,544	2,756	2,447
Income tax expense/(benefit)	6,770	4,321	3,154	4,549	4,297	4,137	1,749	1,565	1,460	1,053	88
Net income/(loss)	\$10,611	\$6,202	\$4,578	\$8,406	\$7,993	\$7,718	\$2,646	\$2,367	\$2,084	\$1,703	\$1,569
Average common equity	\$43,000	\$41,000	\$43,000	\$47,500	\$47,000	\$46,500	\$9,500	\$8,000	\$8,000	\$7,000	\$6,000
Total assets	463,608	483,307	508,775	876,107	845,095	870,631	181,502	158,040	142,646	108,999	86,000
Return on average common equity	25	%15	%11	%18	%17	%17	%28	%30	%26	%24	%25
Overhead ratio	58	60	48	64	65	68	35	35	36	71	73

(a) Managed basis starts with the reported U.S. GAAP results and includes certain reclassifications as discussed below that do not have any impact on net income as reported by the lines of business or by the Firm as a whole.

Segment managed results reflect revenue on a FTE basis with the corresponding income tax impact recorded within income tax expense/(benefit). These adjustments are eliminated in reconciling items to arrive at the Firm's reported U.S. GAAP results. FTE adjustments for the years ended December 31, 2012, 2011, and 2010, were as follows.

Year ended December 31, (in millions)	2012	2011	2010
Noninterest revenue	\$2,116	\$2,003	\$1,745
Net interest income	743	530	403
Income tax expense	2,859	2,533	2,148



(table continued from previous page)

Corporate/Private Equity			Reconciling Items <sup>(b)</sup>			Total					
2012	2011	2010	2012	2011	2010	2012	2011	2010			
\$208	\$3,629	\$5,351	\$(2,116)	\$(2,003)	\$(1,745)	\$52,121	\$49,545	\$51,693			
(1,360)	)506	2,063	(743)	)530	)403	)44,910	47,689	51,001			
(1,152)	)4,135	7,414	(2,859)	)2,533	)2,148	)97,031	97,234	102,694			
(37)	)36	)14	—	—	—	3,385	7,574	16,639			
4,596	4,108	6,310	—	—	—	64,729	62,911	61,196			
(5,711)	)63	1,090	(2,859)	)2,533	)2,148	)28,917	26,749	24,859			
(3,629)	)759	)190	)2,859	)2,533	)2,148	)7,633	7,773	7,489			
\$(2,082)	)\$822	\$1,280	\$—	\$—	\$—	\$21,284	\$18,976	\$17,370			
\$77,352	\$70,766	\$57,520	\$—	\$—	\$—	\$184,352	\$173,266	\$161,520			
728,925	693,108	526,556	NA	NA	NA	2,359,141	2,265,792	2,117,605			
NM	NM	NM	NM	NM	NM	11	%11	%10		%	
NM	NM	NM	NM	NM	NM	67	65	60			

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## Notes to consolidated financial statements

## Note 34 – Parent company

## Parent company – Statements of income

Year ended December 31,

(in millions)

## Income

## Dividends from subsidiaries and affiliates:

	2012	2011	2010
Bank and bank holding company	\$4,828	\$10,852	\$16,554
Nonbank <sup>(a)</sup>	1,972	2,651	932
Interest income from subsidiaries	1,041	1,099	985
Other interest income	293	384	294
Other income from subsidiaries, primarily fees:			
Bank and bank holding company	939	809	680
Nonbank	1,207	92	312
Other income/(loss)	579	(85)	) 157
Total income	10,859	15,802	19,914
Expense			
Interest expense to subsidiaries and affiliates <sup>(a)</sup>	836	1,121	1,263
Other interest expense	4,679	4,447	3,782
Other noninterest expense	2,399	649	540
Total expense	7,914	6,217	5,585
Income before income tax benefit and undistributed net income of subsidiaries	2,945	9,585	14,329
Income tax benefit	1,665	1,089	511
Equity in undistributed net income of subsidiaries	16,674	8,302	2,530
Net income	\$21,284	\$18,976	\$17,370
Parent company – Balance sheets			
December 31, (in millions)	2012	2011	
Assets			
Cash and due from banks	\$216	\$132	
Deposits with banking subsidiaries	75,521	91,622	
Trading assets	8,128	18,485	
Available-for-sale securities	3,541	3,657	
Loans	2,101	1,880	
Advances to, and receivables from, subsidiaries:			
Bank and bank holding company	39,773	39,888	
Nonbank	86,904	83,138	
Investments (at equity) in subsidiaries and affiliates:			
Bank and bank holding company	170,276	157,160	
Nonbank <sup>(a)</sup>	45,305	42,231	
Goodwill and other intangibles	1,018	1,027	
Other assets	16,481	15,506	
Total assets	\$449,264	\$454,726	
Liabilities and stockholders' equity			
Borrowings from, and payables to, subsidiaries and affiliates <sup>(a)</sup>	\$16,744	\$30,231	
Other borrowed funds, primarily commercial paper	62,010	59,891	
Other liabilities	8,208	7,653	
Long-term debt <sup>(b)(c)</sup>	158,233	173,378	
Total liabilities <sup>(c)</sup>	245,195	271,153	

## Expense

## Parent company – Balance sheets

December 31, (in millions)

2012

2011

## Assets

## Investments (at equity) in subsidiaries and affiliates:

## Liabilities and stockholders' equity

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Total stockholders' equity	204,069	183,573
Total liabilities and stockholders' equity	\$449,264	\$454,726

Parent company – Statements of cash flows

Year ended December 31, (in millions)	2012	2011	2010
<b>Operating activities</b>			
Net income	\$21,284	\$18,976	\$17,370
Less: Net income of subsidiaries and affiliates <sup>(a)</sup>	23,474	21,805	20,016
Parent company net loss	(2,190)	(2,829)	(2,646)
Cash dividends from subsidiaries and affiliates <sup>(a)</sup>	6,798	13,414	17,432
Other, net	2,401	889	1,685
Net cash provided by operating activities	7,009	11,474	16,471
<b>Investing activities</b>			
Net change in:			
Deposits with banking subsidiaries	16,100	20,866	7,692
Available-for-sale securities:			
Purchases	(364)	(1,109)	(1,387)
Proceeds from sales and maturities	621	886	745
Loans, net	(350)	153	(90)
Advances to subsidiaries, net	5,951	(28,105)	8,051
Investments (at equity) in subsidiaries and affiliates, net <sup>(a)</sup>	3,546	(1,530)	(871)
Net cash provided by/(used in) investing activities	25,504	(8,839)	14,140
<b>Financing activities</b>			
Net change in borrowings from subsidiaries and affiliates <sup>(a)</sup>			
Net change in other borrowed funds	3,736	16,268	(11,843)
Proceeds from the issuance of long-term debt	28,172	33,566	21,610
Repayments of long-term debt	(44,240)	(41,747)	(32,893)
Excess tax benefits related to stock-based compensation	255	867	26
Redemption of preferred stock	—	—	(352)
Proceeds from issuance of preferred stock	1,234	—	—
Treasury stock and warrants repurchased	(1,653)	(8,863)	(2,999)
Dividends paid	(5,194)	(3,895)	(1,486)
All other financing activities, net	(701)	(1,622)	(641)
Net cash used in financing activities	(32,429)	(2,599)	(30,617)
Net increase/(decrease) in cash and due from banks	84	36	(6)
Cash and due from banks at the beginning of the year, primarily with bank subsidiaries	132	96	102
Cash and due from banks at the end of the year, primarily with bank subsidiaries	\$216	\$132	\$96
Cash interest paid	\$5,690	\$5,800	\$5,090
Cash income taxes paid, net	3,080	5,885	7,001

(a) Affiliates include trusts that issued guaranteed capital debt securities (“issuer trusts”). The Parent received dividends of \$12 million, \$13 million and \$13 million from the issuer trusts in 2012, 2011 and 2010, respectively. For further

discussion on these issuer trusts, see Note 21 on pages 297–299 of this Annual Report.

(b) At December 31, 2012, long-term debt that contractually matures in 2013 through 2017 totaled \$19.3 billion, \$25.1 billion, \$21.6 billion, \$17.5 billion and \$17.3 billion, respectively.

(c) For information regarding the Firm’s guarantees of its subsidiaries’ obligations, see Note 21 and Note 29 on pages 297–299 and 308–315, respectively, of this Annual Report.

## Supplementary information

## Selected quarterly financial data (unaudited)

(Table continued on next page)

As of or for the period ended (in millions, except per share, ratio and headcount data)	2012				2011				
	4th quarter	3rd quarter	2nd quarter	1st quarter	4th quarter	3rd quarter	2nd quarter	1st quarter	
Selected income statement data									
Total net revenue	\$23,653	\$25,146	\$22,180	\$26,052	\$21,471	\$23,763	\$26,779	\$25,221	
Total noninterest expense	16,047	15,371	14,966	18,345	14,540	15,534	16,842	15,995	
Pre-provision profit	7,606	9,775	7,214	7,707	6,931	8,229	9,937	9,226	
Provision for credit losses	656	1,789	214	726	2,184	2,411	1,810	1,169	
Income before income tax expense	6,950	7,986	7,000	6,981	4,747	5,818	8,127	8,057	
Income tax expense	1,258	2,278	2,040	2,057	1,019	1,556	2,696	2,502	
Net income	\$5,692	\$5,708	\$4,960	\$4,924	\$3,728	\$4,262	\$5,431	\$5,555	
Per common share data									
Net income per share: Basic	\$1.40	\$1.41	\$1.22	\$1.20	\$0.90	\$1.02	\$1.28	\$1.29	
Diluted	1.39	1.40	1.21	1.19	0.90	1.02	1.27	1.28	
Cash dividends declared per share <sup>(a)</sup>	0.30	0.30	0.30	0.30	0.25	0.25	0.25	0.25	
Book value per share	51.27	50.17	48.40	47.48	46.59	45.93	44.77	43.34	
Tangible book value per share <sup>(b)</sup>	38.75	37.53	35.71	34.79	33.69	33.05	32.01	30.77	
Common shares outstanding									
Average: Basic	3,806.7	3,803.3	3,808.9	3,818.8	3,801.9	3,859.6	3,958.4	3,981.6	
Diluted	3,820.9	3,813.9	3,820.5	3,833.4	3,811.7	3,872.2	3,983.2	4,014.1	
Common shares at period-end	3,804.0	3,799.6	3,796.8	3,822.0	3,772.7	3,798.9	3,910.2	3,986.6	
Share price <sup>(c)</sup>									
High	\$44.54	\$42.09	\$46.35	\$46.49	\$37.54	\$42.55	\$47.80	\$48.36	
Low	38.83	33.10	30.83	34.01	27.85	28.53	39.24	42.65	
Close	43.97	40.48	35.73	45.98	33.25	30.12	40.94	46.10	
Market capitalization	167,260	153,806	135,661	175,737	125,442	114,422	160,083	183,783	
Selected ratios									
Return on common equity	11	%12	%11	%11	%8	%9	%12	%13	%
Return on tangible common equity <sup>(b)</sup>	15	16	15	15	11	13	17	18	

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Return on assets	0.98	1.01	0.88	0.88	0.65	0.76	0.99	1.07
Return on risk-weighted assets <sup>(d)</sup>	1.76	1.74	1.52	1.57	1.21	1.40	1.82	1.90
Overhead ratio	68	61	67	70	68	65	63	63
Deposits-to-loans ratio	163	158	153	157	156	157	152	145
Tier 1 capital ratio	12.6	11.9	11.3	11.9	12.3	12.1	12.4	12.3
Total capital ratio	15.3	14.7	14.0	14.9	15.4	15.3	15.7	15.6
Tier 1 leverage ratio	7.1	7.1	6.7	7.1	6.8	6.8	7.0	7.2
Tier 1 common capital ratio <sup>(e)</sup>	11.0	10.4	9.9	9.8	10.1	9.9	10.1	10.0
Selected balance sheet data (period-end)								
Trading assets	\$450,028	\$447,053	\$417,324	\$455,633	\$443,963	\$461,531	\$458,722	\$501,148
Securities	371,152	365,901	354,595	381,742	364,793	339,349	324,741	334,800
Loans	733,796	721,947	727,571	720,967	723,720	696,853	689,736	685,996
Total assets	2,359,141	2,321,284	2,290,146	2,320,164	2,265,792	2,289,240	2,246,764	2,198,161
Deposits	1,193,593	1,139,611	1,115,886	1,128,512	1,127,806	1,092,708	1,048,685	995,829
Long-term debt	249,024	241,140	239,539	255,831	256,775	273,688	279,228	269,616
Common stockholders' equity	195,011	190,635	183,772	181,469	175,773	174,487	175,079	172,798
Total stockholders' equity	204,069	199,639	191,572	189,269	183,573	182,287	182,879	180,598
Headcount	258,965	259,547	262,882	261,453	260,157	256,663	250,095	242,929

## Supplementary information

(Table continued from previous page)

As of or for the period ended (in millions, except ratio data)	2012				2011				
	4th quarter	3rd quarter	2nd quarter	1st quarter	4th quarter	3rd quarter	2nd quarter	1st quarter	
Credit quality metrics									
Allowance for credit losses	\$22,604	\$23,576	\$24,555	\$26,621	\$28,282	\$29,036	\$29,146	\$30,438	
Allowance for loan losses to total retained loans	3.02	% 3.18	% 3.29	% 3.63	% 3.84	% 4.09	% 4.16	% 4.40	%
Allowance for loan losses to retained loans excluding purchased credit-impaired loans <sup>(f)</sup>	2.43	2.61	2.74	3.11	3.35	3.74	3.83	4.10	
Nonperforming assets	\$11,734	\$12,481	\$11,397	\$11,953	\$11,315	\$12,468	\$13,435	\$15,149	
Net charge-offs	1,628	2,770	2,278	2,387	2,907	2,507	3,103	3,720	
Net charge-off rate	0.90	% 1.53	% 1.27	% 1.35	% 1.64	% 1.44	% 1.83	% 2.22	%

(a) On March 13, 2012, the Firm's quarterly stock dividend was increased from \$0.25 to \$0.30 per share.

Tangible book value per share and ROTCE are non-GAAP financial measures. Tangible book value per share represents the Firm's tangible common equity divided by period-end common shares. ROTCE measures the Firm's annualized earnings as a percentage of tangible common equity. For further discussion of these measures, see Explanation and Reconciliation of the Firm's Use of Non-GAAP Financial Measures on pages 76–77 of this Annual Report.

(c) Share prices shown for JPMorgan Chase's common stock are from the New York Stock Exchange. JPMorgan Chase's common stock is also listed and traded on the London Stock Exchange and the Tokyo Stock Exchange.

(d) Return on Basel I risk-weighted assets is the annualized earnings of the Firm divided by its average risk-weighted assets.

(e) Basel I Tier 1 common capital ratio ("Tier 1 common ratio") is Tier 1 common capital ("Tier 1 common") divided by risk-weighted assets. The Firm uses Tier 1 common capital along with the other capital measures to assess and monitor its capital position. For further discussion of the Tier 1 common ratio, see Regulatory capital on pages 117–120 of this Annual Report.

(f) Excludes the impact of residential real estate PCI loans. For further discussion, see Allowance for credit losses on pages 159–162 of this Annual Report.

## Glossary of Terms

**Active mobile customers:** Retail banking users of all mobile platforms who have been active in the past 90 days.

**Allowance for loan losses to total loans:** Represents period-end allowance for loan losses divided by retained loans.

**Assets under management:** Represent assets actively managed by AM on behalf of its Private Banking, Institutional and Retail clients. Includes “Committed capital not Called,” on which AM earns fees. Excludes assets managed by American Century Companies, Inc., in which the Firm sold its ownership interest on August 31, 2011.

**Assets under supervision:** Represent assets under management as well as custody, brokerage, administration and deposit accounts.

**Beneficial interests issued by consolidated VIEs:** Represents the interest of third-party holders of debt, equity securities, or other obligations, issued by VIEs that JPMorgan Chase consolidates.

**Benefit obligation:** Refers to the projected benefit obligation for pension plans and the accumulated postretirement benefit obligation for OPEB plans.

**Client advisors:** Investment product specialists, including Private Client Advisors, Financial Advisors, Financial Advisor Associates, Senior Financial Advisors, Independent Financial Advisors and Financial Advisor Associate trainees, who advise clients on investment options, including annuities, mutual funds, stock trading services, etc., sold by the Firm or by third party vendors through retail branches, Chase Private Client branches and other channels.

**Client investment managed accounts:** Assets actively managed by Chase Wealth Management on behalf of clients. The percentage of managed accounts is calculated by dividing managed account assets by total client investment assets.

**Contractual credit card charge-off:** In accordance with the Federal Financial Institutions Examination Council policy, credit card loans are charged off at the earlier of: (i) the end of the month in which the account becomes 180 days past due or (ii) within 60 days from receiving notification about a specific event (e.g., bankruptcy of the borrower).

**Credit derivatives:** Financial instruments whose value is derived from the credit risk associated with the debt of a third party issuer (the reference entity) which allow one party (the protection purchaser) to transfer that risk to another party (the protection seller). Upon the occurrence of a credit event, which may include, among other events, the bankruptcy or failure to pay by, or certain restructurings of the debt of, the reference entity, neither party has recourse to the reference entity. The protection purchaser has recourse to the protection seller for the difference between the face value of the CDS contract and the fair value of the reference obligation at the time of settling the credit derivative contract. The determination as to whether a credit event has occurred is generally made by the relevant International Swaps and Derivatives Association (“ISDA”) Determinations Committee, comprised of 10 sell-side and five buy-side ISDA member firms.

**Credit cycle:** A period of time over which credit quality improves, deteriorates and then improves again (or vice versa). The duration of a credit cycle can vary from a couple of years to several years.

**CUSIP number:** A CUSIP (i.e., Committee on Uniform Securities Identification Procedures) number consists of nine characters (including letters and numbers) that uniquely identify a company or issuer and the type of security and is assigned by the American Bankers Association and operated by Standard & Poor’s. This system facilitates the clearing and settlement process of securities. A similar system is used to identify non-U.S. securities (CUSIP International Numbering System).

**Deposit margin:** Represents net interest income expressed as a percentage of average deposits.

**FICO score:** A measure of consumer credit risk provided by credit bureaus, typically produced from statistical models by Fair Isaac Corporation utilizing data collected by the credit bureaus.

**Forward points:** Represents the interest rate differential between two currencies, which is either added to or subtracted from the current exchange rate (i.e., “spot rate”) to determine the forward exchange rate.

**Group of Seven (“G7”) nations:** Countries in the G7 are Canada, France, Germany, Italy, Japan, the United Kingdom and the United States.

**G7 government bonds:** Bonds issued by the government of one of countries in the G7 nations.

**Headcount-related expense:** Includes salary and benefits (excluding performance-based incentives), and other noncompensation costs related to employees.

**Home equity - senior lien:** Represents loans where JP Morgan Chase holds the first security interest on the property.

Home equity - junior lien: Represents loans where JP Morgan Chase holds a security interest that is subordinate in rank to other liens.

Interchange income: A fee paid to a credit card issuer in the clearing and settlement of a sales or cash advance transaction.

Investment-grade: An indication of credit quality based on JPMorgan Chase's internal risk assessment system. "Investment grade" generally represents a risk profile similar to a rating of a "BBB-"/"Baa3" or better, as defined by independent rating agencies.

LLC: Limited Liability Company.

Loan-to-value ("LTV") ratio: For residential real estate loans, the relationship, expressed as a percentage, between the principal amount of a loan and the appraised value of the collateral (i.e., residential real estate) securing the loan.

Origination date LTV ratio

The LTV ratio at the origination date of the loan. Origination date LTV ratios are calculated based on the actual appraised values of collateral (i.e., loan-level data) at the origination date.

Current estimated LTV ratio

An estimate of the LTV as of a certain date. The current estimated LTV ratios are calculated using estimated collateral values derived from a nationally recognized home price index measured at the metropolitan statistical area ("MSA") level. These MSA-level home price indices comprise actual data to the extent available and forecasted data where actual data is not available. As a result, the estimated collateral values used to calculate these ratios do not represent actual appraised



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loan-level collateral values; as such, the resulting LTV ratios are necessarily imprecise and should therefore be viewed as estimates.

### Combined LTV ratio

The LTV ratio considering all lien positions related to the property. Combined LTV ratios are used for junior lien home equity products.

**Managed basis:** A non-GAAP presentation of financial results that includes reclassifications to present revenue on a fully taxable-equivalent basis. Management uses this non-GAAP financial measure at the segment level, because it believes this provides information to enable investors to understand the underlying operational performance and trends of the particular business segment and facilitates a comparison of the business segment with the performance of competitors.

**Master netting agreement:** An agreement between two counterparties who have multiple derivative contracts with each other that provides for the net settlement of all contracts, as well as cash collateral, through a single payment, in a single currency, in the event of default on or termination of any one contract.

### Mortgage product types:

#### Alt-A

Alt-A loans are generally higher in credit quality than subprime loans but have characteristics that would disqualify the borrower from a traditional prime loan. Alt-A lending characteristics may include one or more of the following: (i) limited documentation; (ii) a high combined loan-to-value (“CLTV”) ratio; (iii) loans secured by non-owner occupied properties; or (iv) a debt-to-income ratio above normal limits. A substantial proportion of the Firm’s Alt-A loans are those where a borrower does not provide complete documentation of his or her assets or the amount or source of his or her income.

#### Option ARMs

The option ARM real estate loan product is an adjustable-rate mortgage loan that provides the borrower with the option each month to make a fully amortizing, interest-only or minimum payment. The minimum payment on an option ARM loan is based on the interest rate charged during the introductory period. This introductory rate is usually significantly below the fully indexed rate. The fully indexed rate is calculated using an index rate plus a margin. Once the introductory period ends, the contractual interest rate charged on the loan increases to the fully indexed rate and adjusts monthly to reflect movements in the index. The minimum payment is typically insufficient to cover interest accrued in the prior month, and any unpaid interest is deferred and added to the principal balance of the loan. Option ARM loans are subject to payment recast, which converts the loan to a variable-rate fully amortizing loan upon meeting specified loan balance and anniversary date triggers.

#### Prime

Prime mortgage loans are made to borrowers with good credit records and a monthly income at least three to four times greater than their monthly housing expense (mortgage payments plus taxes and other debt payments). These borrowers provide full documentation and generally have reliable payment histories.

#### Subprime

Subprime loans are loans to customers with one or more high risk characteristics, including but not limited to: (i) unreliable or poor payment histories; (ii) a high LTV ratio of greater than 80% (without borrower-paid mortgage insurance); (iii) a high debt-to-income ratio; (iv) an occupancy type for the loan is other than the borrower’s primary residence; or (v) a history of delinquencies or late payments on the loan.

**MSR risk management revenue:** Includes changes in the fair value of the MSR asset due to market-based inputs, such as interest rates and volatility, as well as updates to assumptions used in the MSR valuation model; and derivative valuation adjustments and other, which represents changes in the fair value of derivative instruments used to offset the impact of changes in the market-based inputs to the MSR valuation model.

**Multi-asset:** Any fund or account that allocates assets under management to more than one asset class.

**NA:** Data is not applicable or available for the period presented.

**Net charge-off rate:** Represents net charge-offs (annualized) divided by average retained loans for the reporting period.

Net yield on interest-earning assets: The average rate for interest-earning assets less the average rate paid for all sources of funds.

NM: Not meaningful.

Overhead ratio: Noninterest expense as a percentage of total net revenue.

Participating securities: Represents unvested stock-based compensation awards containing nonforfeitable rights to dividends or dividend equivalents (collectively, “dividends”), which are included in the earnings per share calculation using the two-class method. JPMorgan Chase grants restricted stock and RSUs to certain employees under its stock-based compensation programs, which entitle the recipients to receive nonforfeitable dividends during the vesting period on a basis equivalent to the dividends paid to holders of common stock. These unvested awards meet the definition of participating securities. Under the two-class method, all earnings (distributed and undistributed) are allocated to each class of common stock and participating securities, based on their respective rights to receive dividends.

Personal bankers: Retail branch office personnel who acquire, retain and expand new and existing customer relationships by assessing customer needs and recommending and selling appropriate banking products and services.

Portfolio activity: Describes changes to the risk profile of existing lending-related exposures and their impact on the allowance for credit losses from changes in customer profiles and inputs used to estimate the allowances.

Pre-provision profit: Represents total net revenue less noninterest expense. The Firm believes that this financial measure is useful in assessing the ability of a lending institution to generate income in excess of its provision for credit losses.

Pretax margin: Represents income before income tax expense divided by total net revenue, which is, in management’s view, a comprehensive measure of pretax performance derived by

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measuring earnings after all costs are taken into consideration. It is one basis upon which management evaluates the performance of AM against the performance of their respective competitors.

**Principal transactions revenue:** Principal transactions revenue includes realized and unrealized gains and losses recorded on derivatives, other financial instruments, private equity investments, and physical commodities used in market making and client-driven activities. In addition, Principal transactions revenue also includes certain realized and unrealized gains and losses related to hedge accounting and specified risk management activities including: (a) certain derivatives designated in qualifying hedge accounting relationships (primarily fair value hedges of commodity and foreign exchange risk), (b) certain derivatives used for specified risk management purposes, primarily to mitigate credit risk, foreign exchange risk and commodity risk, and (c) other derivatives, including the synthetic credit portfolio.

**Purchased credit-impaired (“PCI”) loans:** Represents loans that were acquired in the Washington Mutual transaction and deemed to be credit-impaired on the acquisition date in accordance with FASB guidance. The guidance allows purchasers to aggregate credit-impaired loans acquired in the same fiscal quarter into one or more pools, provided that the loans have common risk characteristics (e.g., product type, LTV ratios, FICO scores, past due status, geographic location). A pool is then accounted for as a single asset with a single composite interest rate and an aggregate expectation of cash flows.

**Real assets:** Real assets include investments in productive assets such as agriculture, energy rights, mining and timber properties and exclude raw land to be developed for real estate purposes.

**Real estate investment trust (“REIT”):** A special purpose investment vehicle that provides investors with the ability to participate directly in the ownership or financing of real-estate related assets by pooling their capital to purchase and manage income property (i.e., equity REIT) and/or mortgage loans (i.e., mortgage REIT). REITs can be publicly-or privately-held and they also qualify for certain favorable tax considerations.

**Receivables from customers:** Primarily represents margin loans to prime and retail brokerage customers which are included in accrued interest and accounts receivable on the Consolidated Balance Sheets for the wholesale lines of business.

**Reported basis:** Financial statements prepared under U.S. GAAP, which excludes the impact of taxable-equivalent adjustments.

**Retained loans:** Loans that are held-for-investment (i.e. excludes loans held-for-sale and loans at fair value).

**Risk-weighted assets (“RWA”):** Risk-weighted assets consist of on- and off-balance sheet assets that are assigned to one of several broad risk categories and weighted by factors representing their risk and potential for default. On-balance sheet assets are risk-weighted based on the estimated credit risk associated with the obligor or counterparty, the nature of any collateral, and the guarantor, if any. Off-balance sheet assets such as lending-related commitments, guarantees, derivatives and other applicable off-balance sheet positions are

risk-weighted by multiplying the contractual amount by the appropriate credit conversion factor to determine the on-balance sheet credit equivalent amount, which is then risk-weighted based on the same factors used for on-balance sheet assets. Risk-weighted assets also incorporate a measure for market risk related to applicable trading assets-debt and equity instruments, and foreign exchange and commodity derivatives. The resulting risk-weighted values for each of the risk categories are then aggregated to determine total risk-weighted assets.

**Sales specialists:** Retail branch office and field personnel, including Business Bankers, Relationship Managers and Loan Officers, who specialize in marketing and sales of various business banking products (i.e., business loans, letters of credit, deposit accounts, Chase Paymentech, etc.) and mortgage products to existing and new clients.

**Seed capital:** Initial JPMorgan capital invested in products, such as mutual funds, with the intention of ensuring the fund is of sufficient size to represent a viable offering to clients, enabling pricing of its shares, and allowing the manager to develop a track record. After these goals are achieved, the intent is to remove the Firm’s capital from the investment.

**Short sale:** A short sale is a sale of real estate in which proceeds from selling the underlying property are less than the amount owed the Firm under the terms of the related mortgage and the related lien is released upon receipt of such proceeds.

Taxable-equivalent basis: In presenting managed results, the total net revenue for each of the business segments and the Firm is presented on a tax-equivalent basis. Accordingly, revenue from investments that receive tax credits and tax-exempt securities is presented in the managed results on a basis comparable to taxable investments and securities; the corresponding income tax impact related to tax-exempt items is recorded within income tax expense.

Troubled debt restructuring (“TDR”): A TDR is deemed to occur when the Firm modifies the original terms of a loan agreement by granting a concession to a borrower that is experiencing financial difficulty.

Unaudited: Financial statements and information that have not been subjected to auditing procedures sufficient to permit an independent certified public accountant to express an opinion.

U.S. GAAP: Accounting principles generally accepted in the United States of America.

U.S. government-sponsored enterprise obligations: Obligations of agencies originally established or chartered by the U.S. government to serve public purposes as specified by the U.S. Congress; these obligations are not explicitly guaranteed as to the timely payment of principal and interest by the full faith and credit of the U.S. government.

U.S. Treasury: U.S. Department of the Treasury.

Value-at-risk (“VaR”): A measure of the dollar amount of potential loss from adverse market moves in an ordinary market environment.

Washington Mutual transaction: On September 25, 2008, JPMorgan Chase acquired certain of the assets of the banking operations of Washington Mutual Bank (“Washington Mutual”) from the FDIC.

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Distribution of assets, liabilities and stockholders' equity; interest rates and interest differentials

Consolidated average balance sheet, interest and rates

Provided below is a summary of JPMorgan Chase & Co.'s ("JPMorgan Chase" or the "Firm") consolidated average balances, interest rates and interest differentials on a taxable-equivalent basis for the years 2010 through 2012. Income computed on a taxable-equivalent basis is the

income reported in the Consolidated Statements of Income, adjusted to make income and earnings yields on assets exempt from income taxes (primarily federal taxes) comparable with other taxable

(Table continued on next page) Year ended December 31, (Taxable-equivalent interest and rates; in millions, except rates)	2012 Average balance	Interest <sup>(e)</sup>	Average rate	
<b>Assets</b>				
Deposits with banks	\$ 118,463	\$ 555	0.47	%
Federal funds sold and securities purchased under resale agreements	239,703	2,442	1.02	
Securities borrowed	131,446	(3	) <sup>(a)</sup>	—
Trading assets – debt instruments	234,224	9,285	3.96	
Securities	363,230	8,322	2.29	<sup>(g)</sup>
Loans	722,384	35,946	4.98	<sup>(f)</sup>
Other assets <sup>(b)</sup>	32,967	259	0.79	
Total interest-earning assets	1,842,417	56,806	3.08	
Allowance for loan losses	(24,906	)		
Cash and due from banks	51,410			
Trading assets – equity instruments	115,113			
Trading assets – derivative receivables	85,744			
Goodwill	48,176			
<b>Other intangible assets:</b>				
Mortgage servicing rights	7,133			
Purchased credit card relationships	470			
Other intangibles	2,363			
Other assets	144,061			
Total assets	\$ 2,271,981			
<b>Liabilities</b>				
Interest-bearing deposits	\$ 751,098	\$ 2,655	0.35	%
Federal funds purchased and securities loaned or sold under repurchase agreements	248,561	535	0.22	
Commercial paper	50,780	91	0.18	
Trading liabilities - debt, short-term and other liabilities <sup>(c)</sup>	193,459	1,162	0.60	
Beneficial interests issued by consolidated VIEs	60,234	648	1.08	
Long-term debt	245,662	6,062	2.47	
Total interest-bearing liabilities	1,549,794	11,153	0.72	
Noninterest-bearing deposits	354,785			
Trading liabilities – equity instruments	14,172			
Trading liabilities – derivative payables	76,162			
All other liabilities, including the allowance for lending-related commitments	84,480			
Total liabilities	2,079,393			
<b>Stockholders' equity</b>				
Preferred stock	8,236			

Common stockholders' equity	184,352		
Total stockholders' equity	192,588	(d)	
Total liabilities and stockholders' equity	\$2,271,981		
Interest rate spread			2.36 %
Net interest income and net yield on interest-earning assets	\$45,653		2.48

Negative interest income for the year ended December 31, 2012, is a result of increased client-driven demand for (a) certain securities combined with the impact of low interest rates; the offset of this matched book activity is reflected as lower net interest expense reported within trading liabilities - debt, short-term and other liabilities.

(b) Includes margin loans.

(c) Includes brokerage customer payables.

The ratio of average stockholders' equity to average assets was 8.5% for 2012, 8.2% for 2011, and 8.3% for 2010.

(d) The return on average stockholders' equity, based on net income, was 11.1% for 2012, 10.5% for 2011, and 10.2% for 2010.

(e) Interest includes the effect of related hedging derivatives. Taxable-equivalent amounts are used where applicable.

(f) Fees and commissions on loans included in loan interest amounted to \$1.3 billion in 2012, \$1.2 billion in 2011, and \$1.5 billion in 2010.

The annualized rate for available-for-sale securities based on amortized cost was 2.35% in 2012, 2.84% in 2011,

(g) and 3.00% in 2010, and does not give effect to changes in fair value that are reflected in accumulated other comprehensive income/(loss).

(h) Reflects a benefit from the favorable market environments for dollar-roll financings.

income. The incremental tax rate used for calculating the taxable-equivalent adjustment was approximately 38% in both 2012 and 2011, and 39% in 2010. A substantial portion of JPMorgan Chase's securities are taxable.

Within the Consolidated average balance sheets, interest and rates summary, the principal amounts of nonaccrual

loans have been included in the average loan balances used to determine the average interest rate earned on loans. For additional information on nonaccrual loans, including interest accrued, see Note 14 on pages 250–275.

(Table continued from previous

page)

2011			2010				
Average balance	Interest <sup>(e)</sup>	Average rate		Average balance	Interest <sup>(e)</sup>	Average rate	
\$79,783	\$599	0.75	%	\$47,611	\$345	0.72	%
211,800	2,523	1.19		188,394	1,786	0.95	
128,777	110	0.09		117,416	175	0.15	
264,941	11,309	4.27		254,898	11,128	4.37	
337,894	9,462	2.80	(g)	330,166	9,729	2.95	(g)
693,523	37,214	(f) 5.37		703,540	40,481	(f) 5.75	
44,637	606	1.36		35,496	541	1.52	
1,761,355	61,823	3.51		1,677,521	64,185	3.83	
(29,483 )				(36,588 )			
40,725				30,318			
128,949				99,543			
90,003				84,676			
48,632				48,618			
11,249				12,896			
744				1,061			
2,889				3,117			
143,135				132,089			
\$2,198,198				\$2,053,251			
\$733,683	\$3,855	0.53	%	\$668,640	\$3,424	0.51	%
256,283	534	0.21		278,603	(192 ) <sup>(h)</sup>	(0.07)	(h)
42,653	73	0.17		36,000	72	0.20	
206,531	2,266	1.10		186,059	2,484	1.34	
68,523	767	1.12		87,493	1,145	1.31	
272,985	6,109	2.24		273,074	5,848	2.14	
1,580,658	13,604	0.86		1,529,869	12,781	0.84	
278,307				212,414			
5,316				6,172			
71,539				65,714			
81,312				69,539			
2,017,132				1,883,708			
7,800				8,023			
173,266				161,520			
181,066	(d)			169,543	(d)		
\$2,198,198				\$2,053,251			

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	2.65	%		2.99	%
\$48,219	2.74		\$51,404	3.06	
			337		

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Interest rates and interest differential analysis of net interest income – U.S. and non-U.S.

Presented below is a summary of interest rates and interest differentials segregated between U.S. and non-U.S. operations for the years 2010 through 2012. The segregation of U.S. and non-U.S. components is based on

the location of the office recording the transaction. Intracompany funding generally comprises dollar-denominated deposits originated in various locations that are centrally managed by JPMorgan Chase's Treasury unit.

(Table continued on next page)

Year ended December 31, (Taxable-equivalent interest and rates; in millions, except rates)	2012		
	Average balance	Interest	Average rate
<b>Interest-earning assets</b>			
<b>Deposits with banks:</b>			
U.S.	\$79,992	\$168	0.21 %
Non-U.S.	38,471	387	1.01
<b>Federal funds sold and securities purchased under resale agreements:</b>			
U.S.	137,874	872	0.63
Non-U.S.	101,829	1,570	1.54
<b>Securities borrowed:</b>			
U.S.	70,084	(407)	) <sup>(c)</sup> (0.58 )
Non-U.S.	61,362	404	0.66
<b>Trading assets – debt instruments:</b>			
U.S.	119,854	4,592	3.83
Non-U.S.	114,370	4,693	4.10
<b>Securities:</b>			
U.S.	161,727	3,991	2.47
Non-U.S.	201,503	4,331	2.15
<b>Loans<sup>(a)</sup>:</b>			
U.S.	620,615	33,167	5.34
Non-U.S.	101,769	2,779	2.73
Other assets, predominantly U.S.	32,967	259	0.79
<b>Total interest-earning assets</b>	<b>1,842,417</b>	<b>56,806</b>	<b>3.08</b>
<b>Interest-bearing liabilities</b>			
<b>Interest-bearing deposits:</b>			
U.S.	512,589	1,345	0.26
Non-U.S.	238,509	1,310	0.55
<b>Federal funds purchased and securities loaned or sold under repurchase agreements:</b>			
U.S.	181,460	4	(d) — (d)
Non-U.S.	67,101	531	0.79
<b>Trading liabilities - debt, short-term and other liabilities<sup>(a)</sup>:</b>			
U.S.	176,755	(82)	) <sup>(c)</sup> (0.05 )
Non-U.S.	67,484	1,335	1.98
<b>Beneficial interests issued by consolidated VIEs, predominantly U.S.</b>			
U.S.	60,234	648	1.08
<b>Long-term debt:</b>			
U.S.	230,101	5,998	2.61
Non-U.S.	15,561	64	0.41

Intracompany funding:					
U.S.	(253,906	)	(551	)	—
Non-U.S.	253,906		551		—
Total interest-bearing liabilities	1,549,794		11,153		0.72
Noninterest-bearing liabilities <sup>(b)</sup>	292,623				
Total investable funds	\$1,842,417		\$11,153		0.60 %
Net interest income and net yield:			\$45,653		2.48 %
U.S.			35,315		2.91
Non-U.S.			10,338		1.65
Percentage of total assets and liabilities attributable to non-U.S. operations:					
Assets					36.2
Liabilities					23.4

(a) 2011 has been reclassified to conform with the current presentation.

(b) Represents the amount of noninterest-bearing liabilities funding interest-earning assets.

Negative interest income is a result of increased client-driven demand for certain securities combined with the (c) impact of low interest rates; the offset of this matched book activity is reflected as lower net interest expense reported within trading liabilities - debt, short-term and other liabilities.

(d) Reflects a benefit from the favorable market environments for dollar-roll financings.

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U.S. net interest income was \$35.3 billion in 2012, a decrease of \$3.1 billion from the prior year. Net interest income from non-U.S. operations was \$10.3 billion for 2012, an increase of \$518 million from \$9.8 billion in

2011. For further information, see the “Net interest income” discussion in Consolidated Results of Operations on pages 72–75.

(Table continued from previous page)

2011			2010				
Average balance	Interest	Average rate	Average balance	Interest	Average rate		
\$51,123	\$127	0.25	%	\$26,148	\$88	0.34	%
28,660	472	1.65		21,463	257	1.20	
106,927	690	0.65		89,619	830	0.93	
104,873	1,833	1.75		98,775	956	0.97	
65,702	(358)	) <sup>(c)</sup> (0.54	)	67,031	(237)	) <sup>(c)</sup> (0.35	)
63,075	468	0.74		50,385	412	0.82	
123,078	5,071	4.12		119,660	5,513	4.61	
141,863	6,238	4.40		135,238	5,615	4.15	
183,692	5,761	3.14		226,345	7,210	3.19	
154,202	3,701	2.40		103,821	2,519	2.43	
611,057	34,846	5.70		644,504	38,800	6.02	
82,466	2,368	2.87		59,036	1,681	2.85	
44,637	606	1.36		35,496	541	1.52	
1,761,355	61,823	3.51		1,677,521	64,185	3.83	
472,645	1,680	0.36		433,227	2,156	0.50	
261,038	2,175	0.83		235,413	1,268	0.54	
203,899	(92)	) <sup>(d)</sup> (0.05	) <sup>(d)</sup>	231,710	(635)	) <sup>(d)</sup> (0.27	) <sup>(d)</sup>
52,384	626	1.20		46,893	443	0.95	
171,731	573	0.34		145,422	682	0.47	
77,453	1,766	2.27		76,637	1,874	2.45	
68,523	767	1.12		87,493	1,145	1.31	
252,506	6,041	2.39		247,813	5,752	2.32	
20,479	68	0.33		25,261	96	0.38	
(190,282)	) (600)	)	—	(88,286)	) (359)	)	—

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190,282	600	—		88,286	359	—	
1,580,658	13,604	0.86		1,529,869	12,781	0.84	
180,697				147,652			
\$1,761,355	\$13,604	0.77	%	\$1,677,521	\$12,781	0.76	%
	\$48,219	2.74	%		\$51,404	3.06	%
	38,399	3.25			44,059	3.65	
	9,820	1.69			7,345	1.56	
		36.3				31.9	
		24.9				25.2	

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Changes in net interest income, volume and rate analysis

The table below presents an analysis of the effect on net interest income of volume and rate changes for the periods 2012 versus 2011 and 2011 versus 2010. In this analysis, when the change cannot be isolated to either volume or rate, it has been allocated to volume.

Year ended December 31, (On a taxable-equivalent basis: in millions)	2012 versus 2011 Increase/(decrease) due to change in:			2011 versus 2010 Increase/(decrease) due to change in:		
	Volume	Rate	Net change	Volume	Rate	Net change
<b>Interest-earning assets</b>						
<b>Deposits with banks:</b>						
U.S.	\$61	\$(20)	) \$41	\$63	\$(24)	) \$39
Non-U.S.	98	(183)	) (85)	) 118	97	215
<b>Federal funds sold and securities purchased under resale agreements:</b>						
U.S.	203	(21)	) 182	111	(251)	) (140)
Non-U.S.	(43)	) (220)	) (263)	) 107	770	877
<b>Securities borrowed:</b>						
U.S.	(23)	) (26)	) (49)	) 6	(127)	) (121)
Non-U.S.	(14)	) (50)	) (64)	) 96	(40)	) 56
<b>Trading assets – debt instruments:</b>						
U.S.	(122)	) (357)	) (479)	) 144	(586)	) (442)
Non-U.S.	(1,119)	) (426)	) (1,545)	) 285	338	623
<b>Securities:</b>						
U.S.	(539)	) (1,231)	) (1,770)	) (1,336)	) (113)	) (1,449)
Non-U.S.	1,016	(386)	) 630	1,213	(31)	) 1,182
<b>Loans:</b>						
U.S.	521	(2,200)	) (1,679)	) (1,892)	) (2,062)	) (3,954)
Non-U.S.	526	(115)	) 411	675	12	687
Other assets, predominantly U.S.	(93)	) (254)	) (347)	) 122	(57)	) 65
Change in interest income	472	(5,489)	) (5,017)	) (288)	) (2,074)	) (2,362)
<b>Interest-bearing liabilities</b>						
<b>Interest-bearing deposits:</b>						
U.S.	138	(473)	) (335)	) 131	(607)	) (476)
Non-U.S.	(134)	) (731)	) (865)	) 224	683	907
<b>Federal funds purchased and securities loaned or sold under repurchase agreements:</b>						
U.S.	(6)	) 102	96	33	510	543
Non-U.S.	120	(215)	) (95)	) 66	117	183
<b>Trading liabilities - debt, short-term and other liabilities</b>						
U.S.	15	(670)	) (655)	) 80	(189)	) (109)
Non-U.S.	(206)	) (225)	) (431)	) 30	(138)	) (108)
Beneficial interests issued by consolidated VIEs, predominantly U.S.	(92)	) (27)	) (119)	) (212)	) (166)	) (378)

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Long-term debt:						
U.S.	(599	) 556	(43	) 116	173	289
Non-U.S.	(20	) 16	(4	) (15	) (13	) (28
Intracompany funding:						
U.S.	(141	) 190	49	(320	) 79	(241
Non-U.S.	141	(190	) (49	) 320	(79	) 241
Change in interest expense	(784	) (1,667	) (2,451	) 453	370	823
Change in net interest income	\$1,256	\$(3,822	) \$(2,566	) \$(741	) \$(2,444	) \$(3,185

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Securities portfolio

For information regarding the securities portfolio as of December 31, 2012 and 2011, and for the years ended December 31, 2012 and 2011, see Note 12 on pages 244–248. For the available–for–sale securities portfolio, at December 31, 2010, the fair value and amortized cost of U.S. Treasury and government agency obligations was \$131.6 billion and \$128.6 billion, respectively; the fair value and amortized cost of all other available–for–sale securities was \$184.7 billion and \$183.6 billion, respectively; and the total fair value and amortized cost of the total available–for–sale securities portfolio was \$316.3 billion and \$312.2 billion respectively.

At December 31, 2010, the fair value and amortized cost of U.S. Treasury and government agency obligations in held-to-maturity securities portfolio was \$20 million and \$18 million, respectively. There were no other held-to-maturity securities at December 31, 2010.

## Loan portfolio

The table below presents loans on the line-of-business basis that is presented in Credit Risk Management on pages 137, 150 and 138–149, and in Note 14 on pages 250–275, at the periods indicated.

December 31, (in millions)	2012	2011	2010	2009	2008
U.S. Consumer, excluding credit card loans					
Home equity	\$88,356	\$100,497	\$112,844	\$127,945	\$142,890
Mortgage	123,277	128,709	134,284	143,129	157,078
Auto	49,913	47,426	48,367	46,031	42,603
Other	31,074	31,795	32,123	33,392	35,537
Total U.S. Consumer, excluding credit card loans	292,620	308,427	327,618	350,497	378,108
Credit Card Loans					
U.S. Credit Card loans	125,277	129,587	134,781	76,490	102,607
Non-U.S. Credit Card loans	2,716	2,690	2,895	2,296	2,139
Total Credit Card loans	127,993	132,277	137,676	78,786	104,746
Total Consumer loans	420,613	440,704	465,294	429,283	482,854
U.S. wholesale loans					
Commercial and industrial	77,900	65,958	50,912	51,113	74,153
Real estate	59,369	53,230	51,734	54,970	61,890
Financial institutions	10,708	8,489	12,120	13,557	20,953
Government agencies	7,962	7,236	6,408	5,634	5,919
Other	50,948	52,126	38,298	23,811	23,861
Total U.S. wholesale loans	206,887	187,039	159,472	149,085	186,776
Non-U.S. wholesale loans					
Commercial and industrial	36,674	31,108	19,053	20,188	35,291
Real estate	1,757	1,748	1,973	2,270	2,811
Financial institutions	26,564	30,262	20,043	11,848	17,552
Government agencies	1,586	583	870	1,707	602
Other	39,715	32,276	26,222	19,077	19,012
Total non-U.S. wholesale loans	106,296	95,977	68,161	55,090	75,268
Total wholesale loans					
Commercial and industrial	114,574	97,066	69,965	71,301	109,444
Real estate	61,126	54,978	53,707	57,240	64,701
Financial institutions	37,272	38,751	32,163	25,405	38,505
Government agencies	9,548	7,819	7,278	7,341	6,521
Other	90,663	84,402	64,520	42,888	42,873
Total wholesale loans	313,183	283,016	227,633	204,175	262,044
Total loans <sup>(a)</sup>	\$733,796	\$723,720	\$692,927	\$633,458	\$744,898
Memo:					
Loans held-for-sale	\$4,406	\$2,626	\$5,453	\$4,876	\$8,287
Loans at fair value	2,555	2,097	1,976	1,364	7,696
Total loans held-for-sale and loans at fair value	\$6,961	\$4,723	\$7,429	\$6,240	\$15,983

Loans (other than purchased credit-impaired loans and those for which the fair value option have been elected) are presented net of unearned income, unamortized discounts and premiums, and net deferred loan costs of \$2.5 billion, \$2.7 billion, \$1.9 billion, \$1.4 billion and \$2.0 billion at December 31, 2012, 2011, 2010, 2009 and 2008, respectively.





## Maturities and sensitivity to changes in interest rates

The table below sets forth, at December 31, 2012, wholesale loan maturity and distribution between fixed and floating interest rates based on the stated terms of the loan agreements. The table below also reflects the line-of-business basis that is presented in Credit Risk Management on pages 137, 150 and 138–149, and in Note 14 on pages 250–275. The table does not include the impact of derivative instruments.

December 31, 2012 (in millions)	Within 1 year <sup>(a)</sup>	1-5 years	After 5 years	Total
U.S.				
Commercial and industrial	\$ 14,543	\$47,236	\$ 16,121	\$77,900
Real estate	4,656	13,559	41,154	59,369
Financial institutions	4,887	4,277	1,544	10,708
Government agencies	1,765	1,604	4,593	7,962
Other	22,283	25,663	3,002	50,948
Total U.S.	48,134	92,339	66,414	206,887
Non-U.S.				
Commercial and industrial	13,523	15,083	8,068	36,674
Real estate	479	1,126	152	1,757
Financial institutions	22,237	3,641	686	26,564
Government agencies	1,025	8	553	1,586
Other	30,832	7,970	913	39,715
Total non-U.S.	68,096	27,828	10,372	106,296
Total wholesale loans	\$ 116,230	\$ 120,167	\$ 76,786	\$ 313,183
Loans at fixed interest rates		\$ 11,446	\$ 49,185	
Loans at variable interest rates		108,721	27,601	
Total wholesale loans		\$ 120,167	\$ 76,786	

(a) Includes demand loans and overdrafts.

## Risk elements

The following tables set forth nonperforming assets, contractually past-due assets, and accruing restructured loans with the line-of-business basis that is presented in Credit Risk Management on pages 137, 139 and 150, at the periods indicated.

December 31, (in millions)	2012	2011	2010	2009	2008
Nonperforming assets					
U.S. nonaccrual loans:					
Consumer, excluding credit card loans	\$9,174	\$7,411	\$8,833	\$10,657	\$6,567
Credit Card loans	1	1	2	3	4
Total U.S. nonaccrual consumer loans	9,175	7,412	8,835	10,660	6,571
Wholesale:					
Commercial and industrial	702	936	1,745	2,182	1,052
Real estate	520	886	2,390	2,647	806
Financial institutions	60	76	111	663	60
Government agencies	—	—	—	4	—
Other	153	234	267	348	205
Total U.S. wholesale nonaccrual loans	1,435	2,132	4,513	5,844	2,123
Total U.S. nonaccrual loans	10,610	9,544	13,348	16,504	8,694
Non-U.S. nonaccrual loans:					
Consumer, excluding credit card loans	—	—	—	—	—
Credit Card loans	—	—	—	—	—

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Total Non-U.S. nonaccrual consumer loans	—	—	—	—	—
Wholesale:					
Commercial and industrial	48	79	234	281	45
Real estate	—	—	585	241	—
Financial institutions	—	—	30	118	115
Government agencies	5	16	22	—	—
Other	57	354	622	420	99
Total non-U.S. Wholesale nonaccrual loans	110	449	1,493	1,060	259
Total Non-U.S. nonaccrual loans	110	449	1,493	1,060	259
Total nonaccrual loans	10,720	9,993	14,841	17,564	8,953
Derivative receivables	239	297	159	736	1,145
Assets acquired in loan satisfactions	775	1,025	1,682	1,648	2,682
Nonperforming assets	\$11,734	\$11,315	\$16,682	\$19,948	\$12,780
Memo:					
Loans held-for-sale	\$18	\$110	\$341	\$234	\$12
Loans at fair value	93	73	155	111	20
Total loans held-for-sale and loans at fair value	\$111	\$183	\$496	\$345	\$32

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December 31, (in millions)	2012	2011	2010	2009	2008
Contractually past-due loans <sup>(a)</sup>					
U.S. loans:					
Consumer, excluding credit card loans	\$525	\$551	\$625	\$542	\$463
Credit Card loans	1,268	1,867	3,015	3,443	2,621
Total U.S. Consumer loans	1,793	2,418	3,640	3,985	3,084
Wholesale:					
Commercial and industrial	19	—	7	23	30
Real estate	69	84	109	114	76
Financial institutions	6	2	2	6	—
Government agencies	—	—	—	—	—
Other	30	6	171	75	54
Total U.S. Wholesale loans	124	92	289	218	160
Total U.S. loans	1,917	2,510	3,929	4,203	3,244
Non-U.S. loans:					
Consumer, excluding credit card loans	—	—	—	—	—
Credit Card loans	34	36	38	38	28
Total Non-U.S. Consumer loans	34	36	38	38	28
Wholesale:					
Commercial and industrial	—	—	—	5	—
Real estate	—	—	—	—	—
Financial institutions	—	—	—	—	—
Government agencies	—	—	—	—	—
Other	14	8	70	109	3
Total non-U.S. Wholesale loans	14	8	70	114	3
Total non-U.S. loans	48	44	108	152	31
Total contractually past due loans	\$1,965	\$2,554	\$4,037	\$4,355	\$3,275

(a) Represents accruing loans past-due 90 days or more as to principal and interest, which are not characterized as nonaccrual loans.

December 31, (in millions)	2012	2011	2010	2009	2008
Accruing restructured loans <sup>(a)</sup>					
U.S.:					
Consumer, excluding credit card loans	\$9,033	\$7,310	\$4,256	\$2,160	\$981
Credit Card loans <sup>(b)</sup>	4,762	7,214	10,005	6,245	3,048
Total U.S. Consumer loans	13,795	14,524	14,261	8,405	4,029
Wholesale:					
Commercial and industrial	29	68	—	—	—
Real estate	7	48	76	5	—
Financial institutions	—	2	—	—	—
Other	—	6	—	—	—
Total U.S. Wholesale loans	36	124	76	5	—
Total U.S.	13,831	14,648	14,337	8,410	4,029
Non-U.S.:					
Consumer, excluding credit card loans	—	—	—	—	—
Credit Card loans <sup>(b)</sup>	—	—	—	—	—
Total Non-U.S. Consumer loans	—	—	—	—	—
Wholesale:					

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Commercial and industrial	24	48	49	31	5
Real estate	—	—	—	582	—
Other	—	—	—	—	—
Total non-U.S. Wholesale loans	24	48	49	613	5
Total non-U.S.	24	48	49	613	5
Total accruing restructured notes	\$13,855	\$14,696	\$14,386	\$9,023	\$4,034

Represents performing loans modified in troubled debt restructurings in which an economic concession was granted by the Firm and the borrower has demonstrated its ability to repay the loans according to the terms of the restructuring. As defined in accounting principles generally accepted in the United States of America (“U.S. GAAP”), concessions include the reduction of interest rates or the deferral of interest or principal payments, resulting from deterioration in the borrowers’ financial condition. Excludes nonaccrual assets and contractually past-due assets, which are included in the sections above.

(a) Includes credit card loans that have been modified in a troubled debt restructuring.

For a discussion of nonaccrual loans, past-due loan accounting policies, and accruing restructured loans see Credit Risk Management on pages 134–135, and Note 14 on pages 250–275.

## Impact of nonaccrual loans and accruing restructured loans on interest income

The negative impact on interest income from nonaccrual loans represents the difference between the amount of interest income that would have been recorded on such nonaccrual loans according to their original contractual terms had they been performing and the amount of interest that actually was recognized on a cash basis. The negative impact on interest income from accruing restructured loans represents the difference between the amount of interest income that would have been recorded on such loans according to their original contractual terms and the amount of interest that actually was recognized under the modified terms. The following table sets forth this data for the years specified. The change in foregone interest income from 2010 through 2012 was primarily driven by the change in the levels of nonaccrual loans.

Year ended December 31, (in millions)	2012	2011	2010
Nonaccrual loans			
U.S.:			
Consumer, excluding credit card:			
Gross amount of interest that would have been recorded at the original terms	\$804	\$669	\$860
Interest that was recognized in income	(302)	(128)	(139)
Total U.S. Consumer, excluding credit card	502	541	721
Credit Card:			
Gross amount of interest that would have been recorded at the original terms	—	—	—
Interest that was recognized in income	—	—	—
Total U.S. credit card	—	—	—
Total U.S. Consumer	502	541	721
Wholesale:			
Gross amount of interest that would have been recorded at the original terms	54	80	110
Interest that was recognized in income	(4)	(4)	(21)
Total U.S. Wholesale	50	76	89
Negative impact - U.S.	552	617	810
Non-U.S.:			
Consumer, excluding credit card:			
Gross amount of interest that would have been recorded at the original terms	—	—	—
Interest that was recognized in income	—	—	—
Total Non-U.S. Consumer, excluding credit card	—	—	—
Credit Card:			
Gross amount of interest that would have been recorded at the original terms	—	—	—
Interest that was recognized in income	—	—	—
Total Non U.S. credit card	—	—	—
Total Non U.S. Consumer	—	—	—
Wholesale:			
Gross amount of interest that would have been recorded at the original terms	3	10	26
Interest that was recognized in income	—	(2)	(17)
Total non-U.S. wholesale	3	8	9
Negative impact — non-U.S.	3	8	9
Total negative impact on interest income	\$555	\$625	\$819



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Year ended December 31, (in millions)	2012	2011	2010
Accruing restructured loans			
U.S.:			
Consumer, excluding credit card:			
Gross amount of interest that would have been recorded at the original terms	\$729	\$537	\$295
Interest that was recognized in income	(417)	)(304	)(192 )
Total U.S. Consumer, excluding credit card	312	233	103
Credit Card:			
Gross amount of interest that would have been recorded at the original terms	805	1,150	1,727
Interest that was recognized in income	(308)	)(463	)(605 )
Total U.S. Credit Card	497	687	1,122
Total U.S. Consumer	809	920	1,225
Wholesale: <sup>(a)</sup>			
Gross amount of interest that would have been recorded at the original terms	1	2	5
Interest that was recognized in income	(2)	)(2	)(2 )
Total U.S. wholesale	(1)	)—	3
Negative impact — U.S.	808	920	1,228
Non-U.S.:			
Consumer, excluding credit card:			
Gross amount of interest that would have been recorded at the original terms	—	—	—
Interest that was recognized in income	—	—	—
Total Non-U.S. Consumer, excluding credit card	—	—	—
Credit Card:			
Gross amount of interest that would have been recorded at the original terms	—	—	—
Interest that was recognized in income	—	—	—
Total Non U.S. Credit Card	—	—	—
Total Non U.S. Consumer	—	—	—
Wholesale: <sup>(a)</sup>			
Gross amount of interest that would have been recorded at the original terms	1	4	3
Interest that was recognized in income	(1)	)(3	)(2 )
Total non-U.S. wholesale	—	1	1
Negative impact — non-U.S.	—	1	1
Total negative impact on interest income	\$808	\$921	\$1,229

(a) Predominantly real estate-related.



Cross-border outstandings

Cross-border disclosure is based on the Federal Financial Institutions Examination Council's ("FFIEC") guidelines governing the determination of cross-border risk.

The reporting of country exposure under the FFIEC bank regulatory requirements significantly differs from the Firm's internal risk management approach as described in Country Risk Management on pages 170–173. One significant difference is the FFIEC amounts are based on the domicile (legal residence) of the obligor, counterparty, issuer, or guarantor, while the Firm's Credit Risk Management approach is based on where the assets of the obligor, counterparty, issuer or guarantor are located or where the majority of the revenue is derived. Other significant differences between the FFIEC and the Firm's Credit Risk Management include the fact that the FFIEC amounts do not consider the following:

- the benefit of collateral received for securities financing exposures;
- the netting of cash and marketable securities received for lending exposures. The FFIEC guidelines require risk

shifting of lending exposure collateralized by marketable securities to the country of domicile of the issuer of the securities, and risk shifting to the U.S. for cash collateral;

- the netting of long and short positions across issuers in the same country; and
- the netting of credit derivative protection purchased and sold. The FFIEC guidelines require the reporting of the gross notional of credit derivative protection sold and does not permit netting for credit derivatives protection on the same underlying reference entity.

In addition to the above differences, the FFIEC requires that net local country assets be reduced by local country liabilities (regardless of currency denomination).

JPMorgan Chase's total cross-border exposure tends to fluctuate greatly, and the amount of exposure at year-end tends to be a function of timing rather than representing a consistent trend. For a further discussion of JPMorgan Chase's country risk exposure, see Country Risk Management on pages 170–173.

The following table lists all countries in which JPMorgan Chase's cross-border outstandings exceed 0.75% of consolidated assets as of the dates specified.

Cross-border outstandings exceeding 0.75% of total assets

(in millions)	December 31,	Government	Banks	Other <sup>(b)</sup>	Net local country assets	Total cross-border outstandings <sup>(c)</sup>	Commitments <sup>(d)</sup>	Total exposure
Cayman Islands	2012	\$ 315	\$ 35	\$ 67,700	\$ —	\$ 68,050	\$ 2,517	\$ 70,567
	2011	266	64	52,760	—	53,090	6,836	59,926
	2010	73	136	38,278	—	38,487	7,926	46,413
Japan	2012	\$ 2,016	\$ 30,616	\$ 7,706	\$ 23,679	\$ 64,017	\$ 57,041	\$ 121,058
	2011	3,135	32,334	3,572	35,936	74,977	57,158	132,135
	2010	233	24,386	4,231	25,050	53,900	63,980	117,880
France	2012	\$ 10,706	\$ 19,044	\$ 26,902	\$ 1,581	\$ 58,233	\$ 91,603	\$ 149,836
	2011	2,960	20,167	29,043	1,333	53,503	100,898	154,401
	2010	4,699	16,541	26,374	1,473	49,087	101,141	150,228
Germany	2012	\$ 9,363	\$ 23,957	\$ 11,557	\$ 310	\$ 45,187	\$ 92,388	\$ 137,575
	2011	8,900	21,565	8,386	—	38,851	104,125	142,976
	2010	15,339	9,900	17,759	—	42,998	108,141	151,139
Netherlands	2012	\$ 54	\$ 5,947	\$ 36,754	\$ —	\$ 42,755	\$ 41,836	\$ 84,591
	2011	130	9,433	38,879	—	48,442	44,832	93,274
	2010	506	8,093	36,060	—	44,659	47,015	91,674
Brazil	2012	\$ 4,951	\$ 4,373	\$ 6,367	\$ 9,452	\$ 25,143	\$ 8,939	\$ 34,082
	2011	2,928	3,746	5,635	11,685	23,994	10,025	34,019
	2010	2,611	5,302	4,252	4,750	16,915	11,139	28,054

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Switzerland	2012	\$ 103	\$4,193	\$3,657	\$14,121	\$ 22,074	\$ 32,531	\$54,605
	2011	119	5,596	1,757	30,324	37,796	35,559	73,355
	2010	146	4,781	2,167	—	7,094	37,208	44,302
Ireland	2012	\$97	\$2,818	\$12,845	\$—	\$ 15,760	\$ 8,951	\$24,711
	2011	85	2,530	11,604	—	14,219	9,825	24,044
	2010	189	6,300	12,307	—	18,796	11,453	30,249
United Kingdom <sup>(a)</sup>	2012	\$712	\$5,782	\$8,757	\$—	\$ 15,251	\$ 125,234	\$140,485
	2011	984	12,023	14,003	—	27,010	156,747	183,757
	2010	787	12,133	10,903	—	23,823	165,282	189,105
Canada	2012	\$ 1,536	\$5,746	\$3,718	\$—	\$ 11,000	\$ 19,763	\$30,763
	2011	2,635	5,037	3,766	—	11,438	21,442	32,880
	2010	4,995	4,482	6,599	—	16,076	23,434	39,510

Excluded from the table are \$905.6 billion, \$657.2 billion and \$503.5 billion, at December 31, 2012, 2011 and 2010, respectively, substantially all of which represent notional amounts related to credit protection sold on indices

(a) representing baskets of exposures from multiple European countries, which had previously been reported within the United Kingdom. Based on regulatory guidance, credit protection sold on indices representing baskets of exposures from multiple countries are to be disclosed in the aggregate as “other” rather than as a single country. Prior periods have been revised to conform with the current presentation.

(b) Consists primarily of commercial and industrial.

Outstandings includes loans and accrued interest receivable, interest-bearing deposits with banks, acceptances, resale agreements, other monetary assets, cross-border trading debt and equity instruments, fair value of foreign

(c) exchange and derivative contracts, and local country assets, net of local country liabilities. The amounts associated with foreign exchange and derivative contracts are presented after taking into account the impact of legally enforceable master netting agreements.

(d) Commitments include outstanding letters of credit, undrawn commitments to extend credit, and the notional value of credit derivatives where JPMorgan Chase is a protection seller.

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Summary of loan and lending-related commitments loss experience

The tables below summarize the changes in the allowance for loan losses and the allowance for lending-related commitments during the periods indicated. For a further discussion, see Allowance for credit losses on pages 159–162, and Note 15 on pages 276–279.

Allowance for loan losses

Year ended December 31, (in millions)	2012	2011	2010	2009	2008
Balance at beginning of year	\$27,609	\$32,266	\$31,602	\$23,164	\$9,234
Addition resulting from mergers and acquisitions <sup>(a)</sup>	—	—	—	—	2,535
Provision for loan losses	3,387	7,612	16,822	31,735	21,237
U.S. charge-offs					
U.S. Consumer, excluding credit card:	4,805	5,419	8,383	10,421	5,086
U.S. Credit Card:	5,624	8,017	15,247	10,217	5,054
Total U.S. Consumer charge-offs	10,429	13,436	23,630	20,638	10,140
U.S. Wholesale:					
Commercial and industrial	131	197	467	1,233	183
Real estate	114	221	698	700	217
Financial institutions	8	102	146	671	17
Government agencies	—	—	3	—	—
Other	56	149	102	151	35
Total U.S. Wholesale charge-offs	309	669	1,416	2,755	452
Total U.S. charge-offs	10,738	14,105	25,046	23,393	10,592
Non-U.S. charge-offs					
Non-U.S. Consumer, excluding credit card:—	—	—	—	—	—
Non-U.S. Credit Card:	131	151	163	154	103
Total Non-U.S. Consumer charge-offs	131	151	163	154	103
Non-U.S. Wholesale:					
Commercial and industrial	8	1	23	64	40
Real estate	6	142	239	—	—
Financial institutions	—	6	—	66	29
Government agencies	4	—	—	—	—
Other	19	98	311	341	—
Total Non-U.S. Wholesale charge-offs	37	247	573	471	69
Total Non-U.S. charge-offs	168	398	736	625	172
Total charge-offs	10,906	14,503	25,782	24,018	10,764
U.S. recoveries					
U.S. Consumer, excluding credit card:	(508	)(547	)(474	)(222	)(209
U.S. Credit Card loans:	(782	)(1,211	)(1,345	)(719	)(584
Total U.S. Consumer recoveries:	(1,290	)(1,758	)(1,819	)(941	)(793
U.S. Wholesale:					
Commercial and industrial	(335	)(60	)(86	)(53	)(60
Real estate	(64	)(93	)(75	)(12	)(5
Financial institutions	(37	)(207	)(74	)(3	)(2
Government agencies	(2	)(—	(1	)(—	)(—
Other	(21	)(36	)(25	)(25	)(29
Total U.S. Wholesale recoveries	(459	)(396	)(261	)(93	)(96
Total U.S. recoveries	(1,749	)(2,154	)(2,080	)(1,034	)(889
Non-U.S. recoveries					
Non-U.S. Consumer, excluding credit card:—	—	—	—	—	—
Non-U.S. Credit Card:	(29	)(32	)(28	)(18	)(17

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Total Non-U.S. Consumer recoveries	(29	)	(32	)	(28	)	(18	)	(17	)
Non-U.S. Wholesale:										
Commercial and industrial	(16	)	(14	)	(1	)	(1	)	(16	)
Real estate	(2	)	(14	)	—		—		—	
Financial institutions	(7	)	(38	)	—		—		—	
Government agencies	—		—		—		—		—	
Other	(40	)	(14	)	—		—		(7	)
Total Non-U.S. Wholesale recoveries	(65	)	(80	)	(1	)	(1	)	(23	)
Total non-U.S. recoveries	(94	)	(112	)	(29	)	(19	)	(40	)
Total recoveries	(1,843	)	(2,266	)	(2,109	)	(1,053	)	(929	)
Net charge-offs	9,063		12,237		23,673		22,965		9,835	
Allowance related to purchased portfolios	—		—		—		—		6	
Change in accounting principles <sup>(b)</sup>	—		—		7,494		—		—	
Other	3		(32	)	21		(332	)	(13	)
Balance at year-end	\$21,936		\$27,609		\$32,266		\$31,602		\$23,164	

(a) The 2008 amount relates to the Washington Mutual transaction.

Effective January 1, 2010, the Firm adopted accounting guidance related to variable interest entities (“VIEs”). Upon adoption of the guidance, the Firm consolidated its Firm-sponsored credit card securitization trusts, its

(b) Firm-administered multi-seller conduits and certain other consumer loan securitization entities, primarily mortgage-related. As a result, \$7.4 billion, \$14 million and \$127 million, respectively, of allowance for loan losses were recorded on-balance sheet with the consolidation of these entities. For further discussion, see Note 16 on pages 280–291.

(c) Predominantly includes a reclassification in 2009 related to the issuance and retention of securities from the Chase Issuance Trust.

Allowance for lending-related commitments Year ended December 31, (in millions)	2012	2011	2010	2009	2008
Balance at beginning of year	\$673	\$717	\$939	\$659	\$850
Addition resulting from mergers and acquisitions <sup>(a)</sup>	—	—	—	—	66
Provision for lending-related commitments	(2)	(38)	(183)	280	(258)
Net charge-offs	—	—	—	—	—
Change in accounting principles <sup>(b)</sup>	—	—	(18)	—	—
Other	(3)	(6)	(21)	—	1
Balance at year-end	\$668	\$673	\$717	\$939	\$659

(a) The 2008 amount relates to the Washington Mutual transaction.

(b) Relates to the adoption of the new accounting guidance related to VIEs.

#### Loan loss analysis

As of or for the year ended December 31, (in millions, except ratios)	2012	2011	2010	2009	2008 <sup>(c)</sup>
<b>Balances</b>					
Loans – average	\$722,384	\$693,523	\$703,540	\$682,885	\$588,801
Loans – year-end	733,796	723,720	692,927	633,458	744,898
Net charge-offs <sup>(a)</sup>	9,063	12,237	23,673	22,965	9,835
Allowance for loan losses:					
U.S.	\$20,946	\$26,621	\$31,111	\$29,802	\$21,830
Non-U.S.	990	988	1,155	1,800	1,334
Total allowance for loan losses	\$21,936	\$27,609	\$32,266	\$31,602	\$23,164
Nonaccrual loans	10,720	9,993	14,841	17,564	8,953
<b>Ratios</b>					
Net charge-offs to:					
Loans retained – average	1.26	% 1.78	% 3.39	% 3.42	% 1.73
Allowance for loan losses	41.32	44.32	73.37	72.67	42.46
Allowance for loan losses to:					
Loans retained – year-end <sup>(d)</sup>	3.02	3.84	4.71	5.04	3.18
Nonaccrual loans retained	207	281	225	184	260

(a) There were no net charge-offs/(recoveries) on lending-related commitments in 2012, 2011, 2010, 2009 or 2008.

The allowance for loan losses as a percentage of retained loans declined from 2009 to 2012, due to an improvement in credit quality of the consumer and wholesale credit portfolios. Deteriorating credit conditions during 2008 to

(b) 2009, primarily within consumer lending, resulted in increasing losses and correspondingly higher loan loss provisions for those periods. For a more detailed discussion of the 2010 through 2012 provision for credit losses, see Provision for credit losses on page 162.

On September 25, 2008, JPMorgan Chase acquired the banking operations of Washington Mutual Bank. On

(c) May 30, 2008, the Bear Stearns merger was consummated. Each of these transactions was accounted for as a purchase, and their respective results of operations are included in the Firm's results from each respective transaction.

## Deposits

The following table provides a summary of the average balances and average interest rates of JPMorgan Chase's various deposits for the years indicated.

Year ended December 31, (in millions, except interest rates)	Average balances			Average interest rates		
	2012	2011	2010	2012	2011	2010
U.S. offices						
Noninterest-bearing	\$338,652	\$265,522	\$202,459	—	% —	% —
Interest-bearing						
Demand	43,124	39,177	18,881	0.08	0.08	0.04
Savings	383,777	349,425	312,118	0.18	0.23	0.27
Time	85,688	84,043	102,228	0.74	1.00	1.27
Total interest-bearing deposits	512,589	472,645	433,227	0.26	0.36	0.50
Total deposits in U.S. offices	851,241	738,167	635,686	0.16	0.23	0.34
Non-U.S. offices						
Noninterest-bearing	16,133	12,785	9,955	—	—	—
Interest-bearing						
Demand	184,366	190,092	163,550	0.35	0.66	0.35
Savings	846	637	605	0.23	0.14	0.28
Time	53,297	70,309	71,258	1.23	1.32	0.97
Total interest-bearing deposits	238,509	261,038	235,413	0.55	0.83	0.54
Total deposits in non-U.S. offices	254,642	273,823	245,368	0.51	0.79	0.52
Total deposits	\$1,105,883	\$1,011,990	\$881,054	0.24	% 0.38	% 0.39

At December 31, 2012, other U.S. time deposits in denominations of \$100,000 or more totaled \$48.4 billion, substantially all of which mature in three months or less. In addition, the table below presents the maturities for U.S. time certificates of deposit in denominations of \$100,000 or more.

By remaining maturity at December 31, 2012 (in millions)	Three months or less	Over three months but within six months	Over six months but within 12 months	Over 12 months	Total
U.S. time certificates of deposit (\$100,000 or more)	\$11,638	\$2,148	\$4,197	\$3,652	\$21,635

## Short-term and other borrowed funds

The following table provides a summary of JPMorgan Chase's short-term and other borrowed funds for the years indicated.

As of or for the year ended December 31, (in millions, except rates)	2012		2011		2010	
Federal funds purchased and securities loaned or sold under repurchase agreements:						
Balance at year-end	\$240,103		\$213,532		\$276,644	
Average daily balance during the year	248,561		256,283		278,603	
Maximum month-end balance	268,931		289,835		314,161	
Weighted-average rate at December 31	0.23	%	0.16	%	0.18	%
Weighted-average rate during the year	0.22		0.21		(0.07)	) <sup>(c)</sup>
Commercial paper:						
Balance at year-end	\$55,367		\$51,631		\$35,363	
Average daily balance during the year	50,780		42,653		36,000	
Maximum month-end balance	62,875		51,631		50,554	
Weighted-average rate at December 31	0.21	%	0.12	%	0.21	%
Weighted-average rate during the year	0.18		0.17		0.20	
Other borrowed funds: <sup>(a)</sup>						
Balance at year-end	\$79,258		\$75,181		\$100,375	
Average daily balance during the year	79,003		107,543		104,951	
Maximum month-end balance	87,815		124,138		116,473	
Weighted-average rate at December 31	1.83	%	1.60	%	5.71	%
Weighted-average rate during the year	2.49		2.50		2.89	
Short-term beneficial interests: <sup>(b)</sup>						
Commercial paper and other borrowed funds:						
Balance at year-end	\$28,219		\$26,243		\$25,095	
Average daily balance during the year	25,653		25,125		21,853	
Maximum month-end balance	30,043		26,780		25,095	
Weighted-average rate at December 31	0.18	%	0.18	%	0.25	%
Weighted-average rate during the year	0.16		0.23		0.27	

(a) Includes interest-bearing securities sold but not yet purchased.

(b) Included on the Consolidated Balance Sheets in beneficial interests issued by consolidated variable interest entities.

(c) Reflects a benefit from the favorable market environments for U.S. dollar-roll financings.

Federal funds purchased represent overnight funds. Securities loaned or sold under repurchase agreements generally mature between one day and three months. Commercial paper generally is issued in amounts not less than \$100,000, and with maturities of 270 days or less. Other borrowed funds consist of demand notes, term federal funds purchased, and various other borrowings that generally have maturities of one year or less.

Signatures

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on behalf of the undersigned, thereunto duly authorized.

JPMorgan Chase & Co.  
(Registrant)

By: /s/ JAMES DIMON

(James Dimon  
Chairman and Chief Executive Officer)  
February 28, 2013

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the registrant and in the capacity and on the date indicated. JPMorgan Chase & Co. does not exercise the power of attorney to sign on behalf of any Director.

	Capacity	Date
/s/ JAMES DIMON (James Dimon)	Director, Chairman and Chief Executive Officer (Principal Executive Officer)	
/s/ JAMES A. BELL (James A. Bell)	Director	
/s/ CRANDALL C. BOWLES (Crandall C. Bowles)	Director	
/s/ STEPHEN B. BURKE (Stephen B. Burke)	Director	
/s/ DAVID M. COTE (David M. Cote)	Director	
/s/ JAMES S. CROWN (James S. Crown)	Director	February 28, 2013
/s/ TIMOTHY P. FLYNN (Timothy P. Flynn)	Director	
/s/ ELLEN V. FUTTER (Ellen V. Futter)	Director	
/s/ LABAN P. JACKSON, JR. (Laban P. Jackson, Jr.)	Director	
/s/ LEE R. RAYMOND (Lee R. Raymond)	Director	
/s/ WILLIAM C. WELDON (William C. Weldon)	Director	
/s/ MARIANNE LAKE (Marianne Lake)	Executive Vice President and Chief Financial Officer (Principal Financial Officer)	



/s/ MARK W. O'DONOVAN  
(Mark W. O'Donovan)

Managing Director and Corporate Controller  
(Principal Accounting Officer)

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