CELGENE CORP /DE/
Form 10-K
February 07, 2018

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549
FORM 10-K
(Mark one)
x ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
For the fiscal year ended December 31, 2017
or
o TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
For the transition period from to
Commission file number 001-34912
CELGENE CORPORATION
(Exact name of registrant as specified in its charter)

Delaware (State or other jurisdiction of incorporation or organization)	22-2711928 (I.R.S. Employer Identification No.)
86 Morris Avenue Summit, New Jersey (Address of principal executive offices)	07901 (Zip Code)

(908) 673-9000
(Registrant's telephone number, including area code)
Securities registered pursuant to Section 12(b) of the Act:

Title of each class	Name of each exchange on which registered
Common Stock, par value $.01 per share	NASDAQ Global Select Market
Contingent Value Rights	NASDAQ Global Market

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 x No o
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 o No x
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 x No o
Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, 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 x No o
Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K 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. x
Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company" and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer x	Accelerated filer o	Non-accelerated filer o	Smaller reporting company o	Emerging growth company o

(Do not check if a smaller reporting company)

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. o

Indicate by check mark whether the registrant is a shell company (as defined in Rule12b-2 of the Act). Yes o No x

The aggregate market value of voting stock held by non-affiliates of the registrant on June 30, 2017, the last business day of the registrant's most recently completed second quarter, was $101,580,696,211 based on the last reported sale price of the registrant's Common Stock on the NASDAQ Global Select Market on that date.

There were 752,175,608 shares of Common Stock outstanding as of February 2, 2018.

Documents Incorporated by Reference

The registrant intends to file a definitive proxy statement pursuant to Regulation 14A within 120 days of the end of the fiscal year ended December 31, 2017. The proxy statement is incorporated herein by reference into the following parts of the Form 10-K:

Part II, Item 5.(d)	Equity Compensation Plan Information.
Part III, Item 10.	Directors, Executive Officers and Corporate Governance.
Part III, Item 11.	Executive Compensation.
Part III, Item 12.	Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters.
Part III, Item 13.	Certain Relationships and Related Transactions, and Director Independence.
Part III, Item 14.	Principal Accountant Fees and Services.

CELGENE CORPORATION
ANNUAL REPORT ON FORM 10-K
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PART I

ITEM 1. BUSINESS

Celgene Corporation, together with its subsidiaries (collectively “we,” “our,” “us,” “Celgene” or the “Company”), is an integrated global biopharmaceutical company engaged primarily in the discovery, development and commercialization of innovative therapies for the treatment of cancer and inflammatory diseases through next-generation solutions in protein homeostasis, immuno-oncology, epigenetics, immunology and neuro-inflammation. Celgene Corporation was incorporated in the State of Delaware in 1986.

Our primary commercial stage products include REVLIMID®, POMALYST®/IMNOVID®, OTEZLA®, ABRAXANE®, VIDAZA®, azacitidine for injection (generic version of VIDAZA®), THALOMID® (sold as THALOMID® or Thalidomide Celgene® outside of the U.S.) and IDHIFA®. IDHIFA® was approved by the U.S. Food and Drug Administration (FDA) in August 2017 for the treatment of adult patients with relapsed or refractory acute myeloid leukemia (AML) or (R/R AML) with an isocitrate dehydrogenase-2 (IDH2) mutation as detected by an FDA approved diagnostic test. We began recognizing revenue related to IDHIFA® during the third quarter of 2017. In addition, we earn revenue from other product sales and licensing arrangements.

We continue to invest substantially in research and development in support of multiple ongoing proprietary clinical development programs which support our existing products and pipeline of new drug candidates. Our clinical trial activity includes trials across the disease areas of hematology, solid tumors, and inflammation and immunology. REVLIMID® is in several phase III trials covering a range of hematological malignancies that include multiple myeloma and lymphomas. Also, within hematological malignancies, POMALYST® is in several phase III and post-approval trials for relapsed/refractory multiple myeloma (RRMM). In solid tumors, ABRAXANE® is currently in various stages of investigation for pancreatic and non-small cell lung cancers. In inflammation and immunology, OTEZLA® is being evaluated in phase III trials for Behçet's disease and scalp psoriasis, and is continuing to be studied in ulcerative colitis (UC), psoriatic arthritis and plaque psoriasis. We also have a growing number of potential products in phase III trials across multiple diseases. In the inflammation and immunology therapeutic area, we have phase III trials underway for ozanimod in relapsing multiple sclerosis (RMS), UC and a phase III trial in Crohn's Disease (CD) that is initiating. In hematology, phase III trials are underway for CC-486 and luspatercept in myelodysplastic syndromes (MDS), for CC-486 in AML and for luspatercept in beta-thalassemia. In July 2017, Celgene Corporation entered into global strategic immuno-oncology collaboration with BeiGene, Ltd. (BeiGene) to advance a PD-1 Inhibitor (BGB-A317) program for solid tumor cancers. In collaboration with bluebird bio, bb2121, a BCMA CAR T cell therapy, has shown impressive efficacy in RRMM with a manageable safety profile. Breakthrough Therapy designation has been granted by the FDA and bb2121 has been given access to the Priority Medicines scheme by the European Medicines Agency (EMA) Committee for Medicinal Products for Human Use (CHMP). A pivotal study in RRMM was initiated in December 2017.

Beyond our phase III programs, we have access to a growing early-to-mid-stage pipeline of novel potential therapies to address significant unmet medical needs that consists of new drug candidates and cell therapies developed in-house, licensed from other companies or able to be optioned from collaboration partners. We believe that continued use of our primary commercial stage products, participation in research and development collaboration arrangements, depth of our product pipeline, potential regulatory approvals of new products and new indications for existing products will provide the catalysts for future growth.

Our primary commercial stage products are approved to treat the diseases described below for the major markets of the United States, the European Union and Japan. Approvals in other international markets are indicated in the aggregate for the disease indication that most closely represents the majority of the other international approvals.

REVLIMID® (lenalidomide): REVLIMID® is an oral immunomodulatory drug approved in the United States and many international markets for the following uses:

Disease	Geographic Approvals
Multiple myeloma (MM)	
MM in combination with dexamethasone, in patients who have received at least one prior therapy	- United States - European Union - Japan - Other international markets
MM in combination with dexamethasone for newly diagnosed patients	- United States - Japan - Other international markets
Adult patients with previously untreated multiple myeloma who are not eligible for transplant	- European Union - Other international markets
Monotherapy for the maintenance treatment of patients with Newly Diagnosed Multiple Myeloma (NDMM) after autologous stem cell transplant (ASCT)	- United States (February 2017) - European Union (February 2017)
Myelodysplastic syndromes (MDS)	
Transfusion-dependent anemia due to low- or intermediate-1-risk MDS associated with a deletion 5q abnormality with or without additional cytogenetic abnormalities	- United States - Other international markets
Transfusion-dependent anemia due to low- or intermediate-1-risk MDS in patients with isolated deletion 5q cytogenetic abnormality when other options are insufficient or inadequate	- European Union
MDS with a deletion 5q cytogenetic abnormality. The efficacy or safety of REVLIMID® for International Prognostic Scoring System (IPSS) intermediate-2 or high risk MDS has not been established.	- Japan
Mantle cell lymphoma (MCL) in patients whose disease has relapsed or progressed after two prior therapies, one of which included bortezomib	- United States - European Union - Other international markets
R/R Adult T-cell leukemia/lymphoma (ATLL)	- Japan (March 2017)

POMALYST®/IMNOVID® (pomalidomide)[1]: POMALYST®/IMNOVID® is a proprietary, distinct, small molecule that is administered orally and modulates the immune system and other biologically important targets. POMALYST®/IMNOVID® is approved for the following uses:

Disease	Geographic Approvals
MM, in combination with dexamethasone, for patients who have received at least two prior therapies, including lenalidomide and a proteasome inhibitor and have demonstrated disease progression on or within 60 days of completion of the last therapy	- United States
Relapsed and refractory multiple myeloma (RRMM), in combination with dexamethasone, for adult patients who have received at least two prior therapies including both lenalidomide and bortezomib and have demonstrated disease progression on the last therapy	- European Union - Other international markets
RRMM for patients who have received REVLIMID® or bortezomib	- Japan

[1] We received regulatory approval for pomalidomide under the trade name POMALYST® in the United States and Japan and under the trade name IMNOVID® in the European Union.

OTEZLA® (apremilast): OTEZLA® is an oral small-molecule inhibitor of phosphodiesterase 4 (PDE4) specific for cyclic adenosine monophosphate (cAMP). PDE4 inhibition results in increased intracellular cAMP levels. OTEZLA® is approved for the following uses:

Disease	Geographic Approvals
Psoriatic arthritis	
Adult patients with active psoriatic arthritis	- United States - Japan - Other international markets
Adult patients with active psoriatic arthritis who have had an inadequate response or who have been intolerant to a prior DMARD therapy	- European Union
Psoriasis	
Patients with moderate to severe plaque psoriasis who are candidates for phototherapy or systemic therapy	- United States - Other international markets
Adult patients with moderate to severe chronic plaque psoriasis who failed to respond to or who have a contraindication to, or are intolerant to other systemic therapy including cyclosporine, methotrexate or psoralen and ultraviolet-A light	- European Union
Adult patients with plaque psoriasis with inadequate response to topical therapies	- Japan

ABRAXANE® (paclitaxel albumin-bound particles for injectable suspension): ABRAXANE® is a solvent-free chemotherapy product which was developed using our proprietary nab® technology platform. This protein-bound chemotherapy agent combines paclitaxel with albumin. ABRAXANE® is approved for the following uses:

Disease	Geographic Approvals
Breast Cancer	
Metastatic breast cancer, after failure of combination chemotherapy for metastatic disease or relapse within six months of adjuvant chemotherapy. Prior therapy should have included an anthracycline unless clinically contraindicated.	- United States - Other international markets
Metastatic breast cancer in adult patients who have failed first-line treatment for metastatic disease for whom standard, anthracycline containing therapy is not indicated	- European Union
Breast cancer	- Japan
Non-Small Cell Lung Cancer (NSCLC)	
Locally advanced or metastatic NSCLC, as first-line treatment in combination with carboplatin, in patients who are not candidates for curative surgery or radiation therapy	- United States - European Union - Other international markets
NSCLC	- Japan
Pancreatic Cancer	
Metastatic adenocarcinoma of the pancreas, a form of pancreatic cancer, as first line treatment in combination with gemcitabine	- United States - European Union - Other international markets
Unresectable pancreatic cancer	- Japan
Gastric Cancer	- Japan

IDHIFA® (enasidenib): IDHIFA® is a small molecule inhibitor of the isocitrate dehydrogenase 2 (IDH2) enzyme allowing young red blood cells to mature normally. IDHIFA® is approved for the following uses:

Disease	Geographic Approvals
Acute Myeloid Leukemia (AML)	
Relapsed or refractory AML with an isocitrate dehydrogenase-2 mutation	- United States (August 2017)

VIDAZA® (azacitidine for injection): VIDAZA® is a pyrimidine nucleoside analog that has been shown to reverse the effects of DNA hypermethylation and promote subsequent gene re-expression. VIDAZA® is a Category 1 recommended treatment for patients with intermediate-2 and high-risk MDS, according to the National Comprehensive Cancer Network. The U.S. regulatory exclusivity for VIDAZA® expired in May 2011. After the launch of a generic version of VIDAZA® in the United States by a competitor in September 2013, we experienced a significant reduction in our U.S. sales of VIDAZA®. In 2013, we contracted with Sandoz AG (Sandoz) to sell a generic version of VIDAZA® in the United States, which we supply, and we recognize net product sales from our sales to Sandoz. Regulatory exclusivity for VIDAZA® is expected to continue in Europe through 2019. VIDAZA® is approved in the United States and many international markets for the following uses:

Disease	Geographic Approvals
MDS	
All French-American-British (FAB) subtypes	- United States
Intermediate-2 and high-risk MDS	- European Union - Other international markets
MDS	- Japan
Chronic myelomonocytic leukemia with 10% to 29% marrow blasts without myeloproliferative disorder	- European Union - Other international markets
Acute myeloid leukemia (AML) with 20% to 30% blasts and multi-lineage dysplasia	- European Union - Other international markets
Acute myeloid leukemia with >30% bone marrow blasts according to the WHO classification in patients aged 65 years or older who are not eligible for haematopoietic stem cell transplantation	- European Union

THALOMID® (thalidomide): THALOMID®, sold as THALOMID® or Thalidomide Celgene® outside of the United States, is administered orally for the following uses:

Disease	Geographic Approvals
MM	
Newly diagnosed MM, in combination with dexamethasone	- United States
Thalomid in combination with dexamethasone is indicated for induction therapy prior to high dose chemotherapy with autologous stem cell rescue, for the treatment of patients with untreated multiple myeloma	- Other international markets
MM after failure of standard therapies (relapsed or refractory)	- Other international markets
Thalidomide Celgene® in combination with melphalan and prednisone as a first line treatment for patients with untreated multiple myeloma who are aged sixty-five years of age or older or ineligible for high dose chemotherapy	- European Union - Other international markets
Erythema nodosum leprosum	
Cutaneous manifestations of moderate to severe erythema nodosum leprosum (ENL), an inflammatory complication of leprosy	- United States - Other international

	markets
Maintenance therapy for prevention and suppression of the cutaneous manifestation of ENL recurrence	- United States - Other international markets

REVLIMID®, POMALYST® and THALOMID® are distributed in the United States primarily through contracted pharmacies under the REVLIMID® Risk Evaluation and Mitigation Strategy (REMS), POMALYST REMS® and THALOMID REMS® programs, respectively. These are proprietary risk-management distribution programs tailored specifically to provide for the safe and appropriate distribution and use of REVLIMID®, POMALYST® and THALOMID®. Internationally, REVLIMID®, THALOMID®/Thalidomide Celgene® and IMNOVID® are distributed under mandatory risk-management distribution programs tailored to meet local authorities' specifications to provide for the product's safe and appropriate distribution and use. These programs may vary by country and, depending upon the country and the design of the risk-management program, the product may be sold through hospitals or retail pharmacies. VIDAZA®, ABRAXANE®, IDHIFA® and OTEZLA® are distributed through

the more traditional pharmaceutical industry supply chain and are not subject to the same risk-management distribution programs as REVLIMID®, POMALYST®/IMNOVID® and THALOMID®/Thalidomide Celgene®.

PRECLINICAL AND CLINICAL-STAGE PIPELINE

Our preclinical and clinical-stage pipeline of new drug candidates includes small molecule and biologics therapeutics, and cell therapies. These product candidates are at various stages of preclinical and clinical development.

Immune-Inflammatory Diseases: OTEZLA® (apremilast) a novel PDE4 inhibitor, is being studied in phase III clinical trials in Behçet's disease and scalp psoriasis, and is continuing to be studied in UC, psoriatic arthritis and plaque psoriasis. In 2018, Celgene plans to initiate a phase III trial with OTEZLA® in UC based on the efficacy and safety results demonstrated in a phase II randomized, double-blind, placebo-controlled proof of concept study evaluating OTEZLA® in UC. Differentiated oral therapies are advancing through mid- to late-stage trials in inflammatory diseases, including ozanimod, a potential best-in-class S1P receptor modulator. In December, a New Drug Application (NDA) was submitted with the FDA for ozanimod in RMS based on data from the phase III trials evaluating ozanimod in patients with RMS. In addition, ozanimod has a phase III trial in UC underway and a phase III trial in CD that is initiating. Other potential oral therapies include, GED-0301 with a phase II trial in UC, CC-220 for systemic lupus erythematosus (SLE), CC-90001 for idiopathic pulmonary fibrosis and ABX-1431 for multiple sclerosis spasticity.

A phase I trial in healthy volunteers has been completed and a phase Ib in psoriasis patients is being initiated for CC-90006, an injectable PD-1 agonist antibody for autoimmune disorders. In collaboration with FORMA Therapeutics Holdings LLC (FORMA), a phase Ib in healthy volunteers is in progress for FT-4101, targeted for development in nonalcoholic steatohepatitis (NASH).

Myeloid Diseases: We have collaborated with Acceleron Pharma, Inc. (Acceleron) to develop luspatercept (ACE-536). We are evaluating luspatercept for the treatment of patients with beta-thalassemia and MDS in phase III trials. Enrollment for these trials completed in 2017.

Epigenetics: The current insights into molecular regulation of genetic information (Epigenetics) have the potential to transform human diseases. We currently market two epigenetic modifiers, VIDAZA® and ISTODAX®. We have two phase III trials of CC-486 (oral 5-azacitidine) currently enrolling to evaluate its efficacy in the treatment of MDS and AML. We are currently evaluating ivosidenib or IDHIFA® combined with standard induction chemotherapy (7+3 regimen) in patients with newly diagnosed AML with an isocitrate dehydrogenase-1 (IDH1) or IDH2 mutation from a phase I trial.

A phase I trial of a lysine-specific histone demethylase inhibitor (LSD1i, CC-90011) is under way in solid tumors. Additionally, two bromodomain and extra-terminal motif (BET) inhibitors CC-90010, and FT-1101 in collaboration with FORMA, are in phase I dose escalation trials under investigation in non-Hodgkins lymphoma (NHL), solid tumors and acute leukemia indications. Navicixizumab, OncoMed Pharmaceuticals, Inc.'s (OncoMed) anti-DLL4/VEGF bispecific targeting DLL4 in the Notch cancer stem cell pathway and vascular endothelial growth factor (VEGF) receptors, is being investigated in phase Ib clinical trials in ovarian and colorectal cancers.

Protein Homeostasis: CC-122 (Cereblon Modulator, or CELMoD®) and CC-220 are novel compounds that are in phase I and phase II clinical trials, both as single agents and in combination, for hematological and solid tumor cancers. CC-220 is also in development in SLE. They are differentiated from previous compounds (such as thalidomide, lenalidomide and pomalidomide) and have been developed based on our scientific understanding of Cereblon-mediated protein homeostasis. CC-90009 is a unique cereblon modulator, currently in phase I in patients with relapsed AML, whose activity is related to the depletion of the novel substrate GSPT1. CC-92480 is another

novel CELMoD® targeted for multiple myeloma with a differentiated preclinical profile, initiating phase I in 2018.

Immuno-Oncology: bb2121, a BCMA CAR T cell therapy being developed in collaboration with bluebird bio, has shown impressive efficacy in RRMM with a manageable safety profile. Breakthrough Therapy designation has been granted by the FDA and bb2121 has been given access to the Priority Medicines scheme by the EMA CHMP. A pivotal study in RRMM was initiated in December 2017. Bluebird bio is also running a phase I study with bb21217, a second CAR T cell therapy directed against BCMA. JCAR017, a CD19 CAR T cell therapy in development in collaboration with Juno Therapeutics, Inc. (Juno), has also been granted Breakthrough Therapy designation by the FDA and has been given access to the Priority Medicines scheme by the EMA CHMP. Interim data for JCAR017 shows high complete response rates in NHL, with a potentially differentiated safety profile. A pivotal study in diffuse large B-cell lymphoma (DLBCL) initiated in 2017.

In September, Celgene and partner AstraZeneca announced that the FDA placed a partial clinical hold on five trials and a full clinical hold on one trial in the FUSION™ clinical program evaluating IMFINZI™ (durvalumab) in combination with immunomodulatory and chemotherapy agents in hematological malignancies. The decision by the FDA was based on risks

identified in other trials evaluating pembrolizumab in combination with immunomodulatory agents in patients with multiple myeloma. The two trials evaluating IMFINZI™ in patients with MDS and AML are continuing as planned.

Since BCMA is emerging as a compelling target in multiple myeloma (MM), we are also developing a BCMA-targeted T cell engager program in MM, CC-93269; an investigational new drug (IND) application and a clinical trial application (CTA) were filed in 2017 with a phase I trial initiating in 2018. Our anti-CD47 antibody targeting macrophage activity, CC-90002, is currently in phase I trials being evaluated for the treatment of NHL, AML, and solid tumors. A number of additional programs from our collaboration partners are in phase I clinical testing in multiple solid tumor indications, including LYC-55716, a RORgt agonist (Lycera Corp.), and JTX-2011, an anti-ICOS-agonist, (Jounce Therapeutics, Inc). OncoMed is also investigating OMP-313M32, an anti-TIGIT antibody, in a phase I study in solid tumors.

In July 2017, Celgene Corporation entered into global strategic immuno-oncology collaboration with BeiGene to advance a PD-1 Inhibitor (BGB-A317) program for solid tumor cancers.

PRODUCT DEVELOPMENT

We devote significant resources to research and development programs in an effort to discover and develop potential future product candidates. Research and development expenses amounted to $5.9 billion in 2017, $4.5 billion in 2016, and $3.7 billion in 2015. The product candidates in our pipeline are at various stages of preclinical and clinical development. The path to regulatory approval ordinarily includes three phases of clinical trials in which we collect data to support an application to regulatory authorities to allow us to market a product for treatment of a specified disease. There are many difficulties and uncertainties inherent in research and development of new products, resulting in a high rate of failure. To bring a drug from the discovery phase to regulatory approval, and ultimately to market, takes many years and significant cost. Failure can occur at any point in the process, including after the product is approved, based on post-marketing events or developments. New product candidates that appear promising in development may fail to reach the market or may have only limited commercial success because of efficacy or safety concerns, inability to obtain necessary regulatory approvals, limited scope of approved uses, reimbursement challenges, difficulty or excessive costs of manufacture, alternative therapies or infringement of the patents or intellectual property rights of others. Uncertainties in the U.S. FDA approval process and the approval processes in other countries can result in delays in product launches and lost market opportunities. Consequently, it is very difficult to predict which products will ultimately be submitted for approval, which will obtain approval and which will be commercially viable and generate profits. Successful results in preclinical or clinical studies may not be an accurate predictor of the ultimate safety or effectiveness of a drug or product candidate.

Phase I Clinical Trials
Phase I clinical trials begin when regulatory agencies allow initiation of clinical investigation of a new drug or product candidate and usually involve up to 80 healthy volunteers or subjects. These trials study a drug's safety profile, and may include a preliminary determination of a drug or product candidate's safe dosage range. The phase I clinical trial also determines how a drug is absorbed, distributed, metabolized and excreted by the body, and therefore the potential duration of its action. Phase I clinical trials generally take from one to three years to complete.

Phase II Clinical Trials
Phase II clinical trials are conducted on a limited number of subjects with the targeted disease. An initial evaluation of the drug's effectiveness on subjects is performed and additional information on the drug's safety and dosage range is obtained. Phase II clinical trials normally include up to several hundred subjects and may take as many as two to three years to complete.

Phase III Clinical Trials

Phase III clinical trials are typically controlled multi-center trials that involve a larger target patient population that normally consists of several hundred to several thousand subjects to ensure that study results are statistically significant. During phase III clinical trials, physicians monitor subjects to determine efficacy and to gather further information on safety. These trials are generally global in nature and are designed to generate the clinical data necessary to submit an application for marketing approval to regulatory agencies. Phase III clinical trial testing varies by disease state, but can often last from two to seven years.

Regulatory Review

If a product candidate successfully completes clinical trials and trial data is submitted to governmental regulators, such as the FDA in the United States or the European Commission (EC) in the European Union, the time to final marketing approval can vary from six months (for a U.S. filing that is designated for priority review by the FDA) to several years, depending on a number of variables, such as the disease state, the strength and complexity of the data presented, the novelty of the target or compound, risk-management approval and whether multiple rounds of review are required for the regulatory agency to

evaluate the submission. There is no guarantee that a potential treatment will receive marketing approval, or that decisions on marketing approvals or treatment indications will be consistent across geographic areas.

The current stage of development of our commercial stage products and new drug candidates in various areas of research are outlined in the following table:

Area of Research		Status	Entered Current Status
Multiple Myeloma (MM)			
REVLIMID®	Relapsed/refractory	Post-approval research	2006
	Newly diagnosed transplant ineligible	Post-approval research	2015
	NDMM post-ASCT maintenance	Post-approval research	Q1 2017
POMALYST®/IMNOVID®	Relapsed/refractory	Post-approval research	2013
THALOMID®/Thalidomide Celgene®	Newly diagnosed	Post-approval research	2006
PD-L1 Inhibitor: durvalumab[2,1]	MM	Phase I	2015
BCMA CAR-T (bb2121)[3]	MM	Phase II/Pivotal	Q4 2017
BCMA CAR-T (bb21217)[3]	MM	Phase I	Q3 2017
Cereblon Modulator: CC-220	MM	Phase I	2016
Cereblon Modulator: CC-92480	MM	Phase I	Q4 2017
Myelodysplastic Syndromes (MDS)			
VIDAZA®	MDS	Post-approval research	2004
REVLIMID®	Deletion 5q	Post-approval research	2005
CC-486	Lower-risk	Phase III	2013
	Post hypomethylating agent (HMA) failure	Phase II	2015
luspatercept (ACE-536)[4]	MDS	Phase III	2016
PD-L1 Inhibitor: durvalumab[2]	MDS	Phase II	2015
Acute Myeloid Leukemia (AML)			
VIDAZA®	AML (20%-30% blasts) (EU)	Post-approval research	2008
	AML (>30% blasts) (EU)	Post-approval research	2015
IDHIFA®	AML	Post-approval research	Q3 2017
CC-486	Post-induction AML maintenance	Phase III	2013
PD-L1 Inhibitor: durvalumab[2]	AML	Phase II	2015
Anti-CD47 Antibody: CC-90002	AML	Phase I	2016
Cereblon Modulator: CC-90009	AML	Phase I	2016
Lymphoma			
REVLIMID®			2013

Mantle cell lymphoma: Relapsed/refractory (US)	Post-approval research	
Mantle cell lymphoma: Relapsed/refractory (EU)	Post-approval research	2016
Diffuse large B-cell (ABC-subtype): First line	Phase III	2015
Indolent lymphoma: Relapsed/refractory	Phase III	2013

Area of Research		Status	Entered Current Status
	Adult T-cell leukemia-lymphoma (Japan)	Post-approval research	Q1 2017
ISTODAX®	Cutaneous T-cell lymphoma (US)[6]	Post-approval research	2009
	Peripheral T-cell lymphoma: Relapsed/refractory (US)[6]	Post-approval research	2011
	Peripheral T-cell lymphoma: Relapsed/refractory (Japan)	Post-approval research	Q3 2017
	Peripheral T-cell lymphoma: First-line	Phase III	2013
Cereblon Modulator: avadomide (CC-122)	Diffuse large B-cell lymphoma	Phase I	2014
	Indolent lymphoma: Relapsed/refractory	Phase I	2014
CC-486	Lymphoma	Phase I	2015
PD-L1 Inhibitor: durvalumab[2,t]	Non-Hodgkin lymphoma (NHL)	Phase I	2016
CD19 CAR-T (JCAR017)[7]	Aggressive large B-cell lymphoma: Relapsed/refractory	Phase I-II	2015
Anti-CD47 Antibody: CC-90002	Non-Hodgkin lymphoma (NHL)	Phase I	2015
Chronic Lymphocytic Leukemia (CLL)			
Cereblon Modulator: avadomide (CC-122)	CLL	Phase I-II	2015
PD-L1 Inhibitor: durvalumab[2,t]	CLL	Phase I	2015
Beta Thalassemia			
luspatercept (ACE-536)[4]	Beta-thalassemia	Phase III	2016
Myelofibrosis			
luspatercept (ACE-536)[4]	Myelofibrosis	Phase II	Q3 2017
Solid Tumors			
ABRAXANE®	Breast: Metastatic	Post-approval research	2005
	Non-small cell lung: Advanced (first-line)	Post-approval research	2012
	Pancreatic: Metastatic (first-line)	Post-approval research	2013
	Pancreatic: Adjuvant	Phase III	2014
	Gastric: Metastatic (Japan)[8]	Post-approval research	2013
CC-486	Breast: Metastatic	Phase II	2015
	Non-small cell lung: Advanced	Phase II	2015
Marizomib	Glioblastoma	Phase II	2016
Cereblon Modulator: avadomide (CC-122)	Hepatocellular carcinoma	Phase I	2015
Anti-CD47 Antibody: CC-90002	Solid tumors	Phase I	2015
PAN-IDH Inhibitor: AG-881[5]	Glioma	Phase I	2015
LSD1 Inhibitor: CC-90011	Solid tumors	Phase I	2016

BET Inhibitor: CC-90010	Glioblastoma	Phase I	Q3 2017

Area of Research		Status	Entered Current Status
Inflammation and Immunology			
OTEZLA® (apremilast)	Psoriatic arthritis	Post-approval research	2014
	Plaque psoriasis	Post-approval research	2014
	Behçet's disease	Phase III	2014
	Ulcerative colitis	Phase II	2014
GED-0301	Ulcerative colitis	Phase II	2015
ozanimod[1]	Relapsing multiple sclerosis	Regulatory submission	Q4 2017
	Ulcerative colitis	Phase III	2015
	Crohn's disease	Phase II	2015
RPC-4046	Eosinophilic esophagitis	Phase II	2014
Cereblon Modulator: CC-220	Systemic lupus erythematosus (SLE)	Phase IIb	Q3 2017
CC-90001	Fibrosis	Phase II	Q2 2017
ABX-1431[9]	Tourettes	Phase I	2016
CC-90006	Psoriasis	Phase I	2016
FT-4101[10]	Targeted toward nonalcoholic steatohepatitis (NASH)	Phase I	2016

[1] "Regulatory submission" indicates US and/or EU submission unless another country or region is indicated under Area of Research.
[2] In collaboration with MedImmune Limited, a wholly owned subsidiary of AstraZeneca PLC.
[3] In collaboration with bluebird bio, Inc.
[4] In collaboration with Acceleron Pharma, Inc.
[5] In collaboration with Agios Pharmaceuticals, Inc.
[6] Regulatory approval based on pivotal phase II data.
[7] In collaboration with Juno Therapeutics, Inc.
[8] Trial conducted by licensee partner, Taiho Pharmaceuticals Co. Ltd.
[9] In collaboration with Abide Therapeutics, Inc.
[10] In collaboration with Forma Therapeutics Holdings, LLC
[l] Three of four durvalumab studies are in partial clinical hold, one study is in full clinical hold
[t] Study in partial clinical hold

PATENTS AND PROPRIETARY TECHNOLOGY

We consider intellectual property protection to be critical to our operations. For many of our products, in addition to compound (e.g., drug substance) and composition (e.g., drug product) patents, we hold polymorph, formulation, methods of treatment or use, delivery mechanism and methods of manufacture patents, as well as manufacturing trade secrets, that may extend exclusivity beyond the expiration of the compound patent or composition patent.

Key patent expirations and exclusivities:

The following table shows the expected expiration dates in the United States and Europe of the last-to-expire period of exclusivity (primary patent or regulatory approval) related to our primary marketed drug products. In some instances, there are later-expiring patents relating to particular forms or compositions, methods of manufacturing, or use of the drug in the treatment of particular diseases or conditions. However, such additional patents may not protect our drug products from generic competition after the expiration of the primary patent.

	U.S.[1]	Europe
REVLIMID® brand drug (U.S. and European use patents)	2027[2]	2024[3]
POMALYST®/IMNOVID® brand drug (U.S. drug substance/use patent)	2025[4]	2023[5]
OTEZLA® brand drug (U.S./European drug substance patent)	2024[6]	2028[3]
ABRAXANE® brand drug (U.S. use patent and European use/formulation patents)	2026[7]	2022[8]
VIDAZA® brand drug (U.S. use patent and EMA regulatory exclusivities only)	2011[9]	2019

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1 The patents covering these drugs include patents listed in the U.S. Orange Book. The date provided reflects the last-to-expire key patent as listed in the U.S. Orange Book, which may not be the last date on which all relevant patents (e.g., polymorph and manufacturing patents) expire.

2 In December 2015, we announced the settlement of litigations with Natco Pharma Ltd. and its partners and affiliates, relating to certain patents for REVLIMID®. As part of the settlement, we agreed to provide Natco with a volume-limited license to sell generic lenalidomide in the U.S. commencing in March 2022. Natco's ability to market generic lenalidomide in the U.S. will be contingent on its obtaining approval of an Abbreviated New Drug Application. See Note 18 of Notes to Consolidated Financial Statements contained in this Annual Report on Form 10-K for more information.

3 Subject of ongoing EPO opposition proceedings. See Note 18 of Notes to Consolidated Financial Statements contained in this Annual Report on Form 10-K for more information.

4 Patent Term Extension granted in October 2017. Exclusivity extended through 2025.

5 Based on ten years regulatory exclusivity.

6 Application for Patent Term Extension pending, receipt of which would extend exclusivity through 2028.

7 In January 2018, we entered into a settlement with Actavis LLC to terminate patent litigation and Inter Partes Review (IPR) challenges between the parties relating to certain patents for ABRAXANE®. As part of the settlement, we have agreed to provide Actavis with a license to certain patents required to manufacture and sell a generic paclitaxel protein-bound particles for injectable suspension product in the United States beginning on March 31, 2022. See Note 18 of Notes to Consolidated Financial Statements contained in this Annual Report on Form 10-K for more information.

8 Subject of ongoing supplementary protection certificate (SPC) appeal proceedings in the UK and the Court of Justice for the European Union that may result in patent extension until 2022. See Note 18 of Notes to Consolidated Financial Statements contained in this Annual Report on Form 10-K for more information.

9 We contracted with Sandoz to sell azacitidine for injection, which they launched after the introduction of a generic version of VIDAZA® in the United States by a competitor in September 2013.

The term of individual patents and patent applications will depend upon the legal term of the patents in the countries in which they are obtained. In the United States, the patent term is 20 years from the date of filing of the patent application although term extensions are available. We may obtain patents for certain products many years before marketing approval is obtained for those products. Because of the limited life of patents, which ordinarily commences prior to the commercial sale of the related product, the commercial value of the patent may be limited. However, we may be able to obtain patent term extensions upon marketing

approval. For example, SPCs on some of our products have been granted in a number of European countries, compensating in part for delays in obtaining marketing approval. Also, under the Hatch-Waxman Act, the term of a patent that covers an FDA-approved drug may also be eligible for patent term extension (for up to five years, but not beyond a total of 14 years from the date of product approval) as compensation for patent term lost during the FDA regulatory review process. When possible, depending upon the length of clinical trials and other factors involved in the filing of a NDA with the FDA, we expect to apply for patent term extensions for patents covering our drug products and their use in treating various diseases.

In most cases, our drugs are also covered in foreign countries by patents and patent applications that correspond to certain of those listed in the U.S. Orange Book. For example, patents related to the active pharmaceutical ingredient, uses and pharmaceutical compositions for most of our drugs have been granted in Europe. Although certain of the patents granted by the regulatory authorities of the European Union may expire at specific dates, patents granted in certain European countries, such as Spain, France, Italy, Germany and the United Kingdom, will extend beyond such European Union patent expiration date due to the SPCs granted in these countries for many of our drugs. The table above may also reflect patents in Europe that relate to certain polymorphic forms of the active pharmaceutical ingredient of our drugs.

Patent term extensions have been granted in other markets for certain of our patents related to REVLIMID®. Patent term extensions for certain of our patents related to lenalidomide have been granted in Europe, Australia, Japan and Russia. Further, patent term extensions for certain of our patents related to ABRAXANE® have been secured and/or are actively being sought in Europe, Australia, Japan, Russia and Korea. We are also considering alternative exclusivity strategies, mostly through international treaties, in a variety of countries throughout Latin America.

The existence of issued patents does not guarantee our right to practice the patented technology or commercialize the patented product. Third parties may have or obtain rights to patents which could be used to prevent or attempt to prevent us from commercializing the patented product candidates. Patents relating to pharmaceutical, biopharmaceutical and biotechnology products, compounds and processes, such as those that cover our existing compounds, products and processes and those that we will likely file in the future, do not always provide complete or adequate protection. Future litigation or re-examination proceedings (including oppositions and invalidity proceedings such as interparty reviews) regarding the enforcement or validity of our existing patents or any future patents could invalidate such patents or substantially reduce their protection.

Our patents are subject to challenge by generic drug companies and others for a variety of reasons. For more information regarding challenges to certain of our patents, see Item 1A. "Risk Factors" and Note 18 of Notes to Consolidated Financial Statements contained in this Annual Report on Form 10-K.

As of December 31, 2017, we owned or had exclusively licensed 803 issued U.S. patents and 565 additional pending U.S. patent applications. We have a policy to seek broad global patent protection for our inventions and have foreign patent rights corresponding to most of our U.S. patents.

Trade secret strategies and intellectual property rights in our brand names, logos and trademarks are also important to our business. We maintain both registered and common law trademarks. Common law trademark protection typically continues where and for as long as the mark is used. Registered trademarks continue in each country for as long as the trademark is registered.

GOVERNMENTAL REGULATION

General: Regulation by governmental authorities in the United States and other countries is a significant factor in the manufacture and marketing of pharmaceuticals and in our ongoing research and development activities. Our

therapeutic products require regulatory approval by governmental agencies. Human therapeutic products are subject to rigorous preclinical testing and clinical trials and other pre-marketing and post-marketing approval requirements of the FDA and regulatory authorities in other countries. In the United States, various federal and, in some cases, state statutes and regulations also govern, or impact the manufacturing, testing for safety and effectiveness, labeling, storage, record-keeping and marketing of, such products. The lengthy process of seeking required approvals and the continuing need for compliance with applicable statutes and regulations, require the expenditure of substantial resources. Regulatory approval, if and when obtained, may be limited in scope, which may significantly limit the uses for which a product may be promoted. Further, approved drugs, as well as their manufacturers, are subject to ongoing post-marketing review, inspection and discovery of previously unknown problems with such products or the manufacturing or quality control procedures used in their production, which may result in restrictions on their manufacture, sale or use or in their withdrawal from the market. Any failure or delay by us, our suppliers of manufactured drug product, collaborators or licensees, in obtaining regulatory approvals could adversely affect the marketing of our products and our ability to receive product revenue, license revenue or profit sharing payments. For more information, see Item 1A. “Risk Factors.”

Clinical Development: Before a product may be administered to human subjects, it must undergo preclinical testing. Preclinical tests include laboratory evaluation of a product candidate's chemistry and biological activities and animal studies to assess potential safety and efficacy. The results of these studies must be submitted to the FDA as part of an IND application which must be reviewed by the FDA primarily for safety considerations before clinical trials in humans can begin.

Typically, clinical trials in humans involve a three-phase process as previously described under “- Product Development.”

In some cases, further studies beyond the three-phase clinical trial process described above are required as a condition for an NDA or biologics license application (BLA) approval. The FDA requires monitoring of all aspects of clinical trials and reports of all adverse events must be made to the FDA. The FDA may also require the conduct of pediatric studies for the drug and indication either before or after submission of an NDA.

FDA Review and Approval: The results of the preclinical testing and clinical trials are submitted to the FDA as part of an NDA or BLA for evaluation to determine if there is substantial evidence that the product is sufficiently safe and effective to warrant approval. In responding to an NDA or BLA, the FDA may grant marketing approval, deny approval, or request additional information, including data from new clinical trials. Modifications to an approved drug or biologic, including new indication or changes to labeling or manufacturing processes or facilities, may require the submission and approval of a supplemental NDA or BLA before modifications can be implemented, which may require that we develop additional data or conduct additional preclinical and clinical trials.

Expedited Programs for Serious Conditions: The FDA has developed four distinct approaches to make new drugs available as rapidly as possible in cases where there is no available treatment or there are advantages over existing treatments.

The FDA may grant “accelerated approval” to products that have been studied for their safety and effectiveness in treating serious or life-threatening illnesses and that provide meaningful therapeutic benefit to patients over existing treatments. For accelerated approval, the product must have an effect on a surrogate endpoint or an intermediate clinical endpoint that is considered reasonably likely to predict the clinical benefit of a drug, such as an effect on irreversible morbidity and mortality. When approval is based on surrogate endpoints or clinical endpoints other than survival or morbidity, the sponsor will be required to conduct additional post-approval clinical studies to verify and describe clinical benefit. These studies are known as "confirmatory trials." Approval of a drug may be withdrawn or the labeled indication of the drug changed if these trials fail to verify clinical benefit or do not demonstrate sufficient clinical benefit to justify the risks associated with the drug.

The FDA may grant “fast track” status to products that treat serious diseases or conditions and demonstrate the potential to address an unmet medical need. Fast track is a process designed to facilitate the development and expedite the review of such products by providing, among other things, more frequent meetings with the FDA to discuss the product's development plan, more frequent written correspondence from the FDA about trial design, eligibility for accelerated approval if relevant criteria are met, and rolling review, which allows submission of individually completed sections of an NDA or BLA for FDA review before the entire submission is completed. Fast track status does not ensure that a product will be developed more quickly or receive FDA approval.

“Breakthrough Therapy” designation is a process designed to expedite the development and review of drugs that are intended to treat a serious condition and preliminary clinical evidence indicates that the drug may demonstrate substantial improvement over available therapy on a clinically significant endpoint. For drugs and biologics that have been designated as Breakthrough Therapies, robust FDA-sponsor interaction and communication can help to identify the most efficient and expeditious path for clinical development while minimizing the number of patients placed in

ineffective control regimens.

The FDA may grant “priority review” status to products that, if approved, would provide significant improvement in the safety or effectiveness of the treatment, diagnosis, or prevention of serious conditions. Priority review is intended to reduce the time it takes for the FDA to review an NDA or BLA, with the goal to take action on the application within six months, compared to ten months for a standard review.

Orphan Drug Act: Under the United States Orphan Drug Act, a sponsor may request that the FDA designate a drug intended to treat a “rare disease or condition” as an “orphan drug.” A “rare disease or condition” is one which affects less than 200,000 people in the United States, or which affects more than 200,000 people, but for which the cost of developing and making available the product is not expected to be recovered from sales of the product in the United States. Upon the approval of the first NDA or BLA for a drug designated as an orphan drug for a specified indication, the sponsor of that NDA or BLA is entitled to seven years of exclusive marketing rights in the United States unless the sponsor cannot assure the availability of sufficient quantities to meet the needs of persons with the disease. However, orphan drug status is particular to the approved indication and does not prevent another company from seeking approval of an off-patent drug that has other labeled indications that are not under orphan or other exclusivities. Orphan drugs may also be eligible for federal income tax credits for costs associated with the drugs' development.

In order to increase the development and marketing of drugs for rare disorders, regulatory bodies outside the United States have enacted regulations similar to the Orphan Drug Act.

Review and Approval Outside of the United States: Approval procedures must be undertaken in virtually every other country comprising the market for our products. The approval procedure and the time required for approval vary from country to country and may involve additional testing. In certain countries such as the EU countries, Switzerland, Canada and Australia, regulatory requirements and approval processes are similar to those in the United States, where approval decisions by regulators are based on the regulators' review of the results of clinical trials performed for specific indications. Other countries may have a less comprehensive review process in terms of data requirements and may rely on prior marketing approval from a foreign regulatory authority in other countries such as the United States or the EU.

Manufacturing Quality Control: Among the conditions for NDA or BLA approval is the requirement that the prospective manufacturer's quality control and manufacturing procedures continually conform with the FDA's current Good Manufacturing Practice (cGMP) regulations (which are regulations established by the FDA governing the manufacture, processing, packing, storage and testing of drugs and biologics intended for human use). In complying with cGMP, manufacturers must devote substantial time, money and effort in the areas of production, quality control and quality assurance to maintain compliance. Material changes in manufacturing equipment, location or process, may result in additional regulatory review and approval. The FDA, the EC and other regulatory agencies conduct periodic visits to inspect equipment, facilities, and processes following the initial approval of a product. If a manufacturing facility is not in substantial compliance with the applicable regulations and requirements imposed when the product was approved, regulatory enforcement action may be taken, which may include a warning letter or an injunction against shipment of products from the facility and/or recall of products previously shipped.

Post-approval Review and Enforcement: Regulatory authorities closely review and regulate the marketing and promotion of drug and biologic products. In most countries, regulatory approval is granted for a specified indication and is required before marketing or promoting a product for that indication. Regulatory authorities may take enforcement action against a company for promoting and/or reimbursement of unapproved uses of a product or for other violations of advertising and labeling laws and regulations.

When an NDA or BLA is approved, the NDA or BLA holder must, among other things, (a) employ a system for obtaining reports of adverse events and side effects associated with the drug and make appropriate submissions to the FDA and (b) timely advise the FDA if any approved product fails to adhere to specifications established by the NDA or BLA. If the FDA concludes that a drug previously shown to be effective can be safely used only if distribution or use is restricted, the FDA will require post-marketing restrictions as necessary to assure safe use. The sponsor may be required to establish systems to assure use of the product under safe conditions. The FDA may require the drug sponsor to implement programs similar to our REMS programs to ensure that benefits of a drug outweigh risks and that safety protocols are adhered to.

In addition, a sponsor of a drug product has an ongoing obligation to update product labels with new information and to report to regulatory authorities concerning assessment of serious risks associated with the drug. Following assessment of these reports, regulatory authorities can require product label updates to reflect new safety data or warnings. If the FDA or other regulatory authorities become aware of new safety information, they can also require us to conduct studies or clinical trials to assess the potential for a serious risk or to update the product label. The FDA and other regulatory authorities can also impose marketing restrictions, including the suspension of marketing or complete withdrawal of a product from the market.

The FDA may issue publicly available warning letters and non-compliance letters, which may require corrective actions, including modification of advertising or other corrective communications to consumers or healthcare

professionals.

Failure to comply with applicable FDA or other regulatory agency requirements can result in enforcement actions, such as license revocation or suspension; orders for retention, recall, seizure or destruction of product; cessation of manufacturing; injunctions; inspection warrants; search warrants; civil penalties, including fines based on disgorgement; restitution; and criminal prosecution.

Other Regulations: We are also subject to various federal and state laws, as well as foreign laws, pertaining to healthcare “fraud and abuse,” including anti-kickback laws and false claims laws. Anti-kickback laws make it illegal to solicit, offer, receive or pay any remuneration in exchange for or to induce the referral of business, including the purchase or prescription of a particular drug that is reimbursed by a state or federal program. False claims laws generally prohibit knowingly and willingly presenting, or causing to be presented for payment to third-party payers (including Medicare and Medicaid) any claims for reimbursed drugs or services that are false or fraudulent, claims for items or services not provided as claimed or claims for medically unnecessary items or services. Our activities related to the sale and marketing of our products may be subject to scrutiny under these laws. Violations of fraud and abuse laws may be punishable by criminal and/or civil sanctions, including fines and civil monetary penalties, as well as the possibility of exclusion from federal healthcare programs (including Medicare and Medicaid).

We are also subject to regulation under the Occupational Safety and Health Act, the Toxic Substances Control Act, the Resource Conservation and Recovery Act and other federal, state and local laws, rules and regulations. Our research and development activities may involve the controlled use of hazardous materials, chemicals, biological materials and various radioactive compounds. We believe our procedures comply with the standards prescribed by federal, state or local laws, rules and regulations; however, the risk of injury or accidental contamination cannot be completely eliminated.

Additionally, the U.S. Foreign Corrupt Practices Act (FCPA) prohibits U.S. corporations and their representatives from offering, promising, authorizing or making payments or providing anything of value to any foreign government official, government staff member, political party or political candidate, with corrupt intent for the purpose of obtaining or retaining an improper business advantage. The scope of the FCPA includes interactions with certain healthcare professionals in many countries. Other countries have enacted similar anti-corruption laws and regulations to which our activities are subject.

COMPETITION

Our current products and products under development face competition from other innovative drugs and, in some cases, generic drugs. The relative speed with which we develop new products, complete clinical trials, obtain regulatory approvals, receive pricing and reimbursement approvals, and finalize manufacturing and distribution arrangements, and market our products are critical factors in gaining a competitive advantage. Competition among approved products depends, among other things, on product efficacy, safety, convenience, reliability, availability, price, third-party reimbursement, sales and promotional activities, product liability issues and patent and non-patent exclusivity. For additional information, see Item 1A. "Risk Factors.”

SIGNIFICANT ALLIANCES

We have entered into a variety of alliances in the ordinary course of our business. Although we do not consider any individual alliance to be material, a brief description of certain of the more notable alliances are identified in Note 17 of Notes to Consolidated Financial Statements contained in this Annual Report on Form 10-K.

MANUFACTURING

We own and operate a manufacturing facility in Zofingen, Switzerland which produces the active pharmaceutical ingredient (API) for OTEZLA®, REVLIMID® and THALOMID® as well as work with several third-party contract manufacturers to provide backup API manufacturing services for certain products.

In addition, for certain products, we have contracted with several third-party API and drug product manufacturing and packaging service providers, to provide primary and/or back-up sources including the API manufacturing for ABRAXANE®, POMALYST®/IMNOVID®, IDHIFA®, VIDAZA® (azacitidine for injection) and ISTODAX®, and the drug product manufacturing and packaging for IDHIFA®, VIDAZA® (azacitidine for injection) and ISTODAX®.

Manufacturing services for REVLIMID®, POMALYST®/IMNOVID®, THALOMID® and OTEZLA® which consists of bulk production, packaging, warehousing and distribution, are performed at our drug product manufacturing facility in Boudry, Switzerland. Manufacturing services for ABRAXANE® which consists of bulk production, packaging, warehousing and distribution, are performed at our drug product manufacturing facility in Arizona, U.S. We have contracted with several third-party drug product manufacturing service providers and packaging service providers to provide backup manufacturing and packaging services for these products.

We have established, or are in the process of establishing, primary and back up suppliers and/or manufacturing sites for late phase development programs. We are leveraging a combination of owned and third-party manufacturing service providers for OTEZLA® QD (once daily), ozanimod and luspatercept. We are also investing in our own as well as third-party manufacturing services for our CAR T product candidates, including bb2121 and JCAR017.

All Celgene owned and third-party facilities are approved by the regulatory authorities for the geographies that they serve.

INTERNATIONAL OPERATIONS

We have significant operations outside the United States conducted both through our subsidiaries and through distributors. For a geographic breakdown of total revenues see Note 19 of Notes to Consolidated Financial Statements contained in this Annual Report on Form 10-K and for further discussion of our total revenues by geographic area see Item 7. "Management’s Discussion and Analysis of Financial Condition and Results of Operations—Results of Operations."

Our international headquarters and a drug product manufacturing facility which performs formulation, encapsulation, packaging, warehousing and distribution are located in Boudry, Switzerland.

Our international operations are subject to risks associated with operating on an international basis, including currency fluctuations, price and exchange controls and other restrictive governmental actions. Our international operations are also subject to government-imposed constraints, including laws on pricing, reimbursement and patient access to our products. Depending on the direction of change relative to the U.S. dollar, foreign currency values can increase or decrease the reported dollar value of our net assets and results of operations. While we cannot predict with certainty future changes in foreign exchange rates or the effect they will have, we attempt to mitigate their impact through operational means and by using foreign currency derivative instruments. For more information, see Item 7A. "Quantitative and Qualitative Disclosures About Market Risk."

SALES AND COMMERCIALIZATION

We promote our brands globally through our hematology, oncology, and inflammation and immunology commercial organizations which support our currently marketed brands and prepare for the launches of new products, as well as new indications for existing products. For OTEZLA®, we also provide information about the appropriate use of our products to consumers in the U.S. through direct-to-consumer print and television advertising. We have a team of dedicated market access professionals to help physicians and payers understand the value our products deliver. Given our goal to ensure that patients who might benefit from our therapies have the opportunity to do so and given the complex reimbursement environment in the United States, we offer the services of Celgene Patient Support® and Otezla SupportPlus® to serve as dedicated, central points of contact for patients and healthcare professionals who use or prescribe our products. Celgene Patient Support® and Otezla SupportPlus® are free services that help patients and healthcare professionals navigate the challenges of reimbursement by providing information regarding insurance coverage, prior authorization requirements, appeals processes and financial assistance programs.

In most countries, we promote our products through our own sales organizations. In some countries, particularly in Latin America, we partner with third-party distributors. Generally, we distribute our products through commonly used channels in local markets. However, REVLIMID®, POMALYST®/IMNOVID® and THALOMID®/Thalidomide Celgene® are distributed under mandatory risk-management distribution programs (such as REMS) tailored to meet local authorities' specifications to provide for their safe and appropriate distribution and use.

EMPLOYEES

As of December 31, 2017, we had 7,467 full-time employees, of whom 2,829 were engaged primarily in research and development activities, 2,440 were engaged primarily in sales and commercialization activities, 678 were engaged primarily in manufacturing, and the remaining 1,520 were engaged primarily in management and general and administrative activities. The number of full-time employees in our international operations has grown from 3,039 at the end of 2016 to 3,091 at the end of 2017. We also employ a number of part-time employees and maintain consulting arrangements with a number of researchers at various universities and other research institutions around the world.

SEASONALITY

Our worldwide product sales do not reflect any significant degree of seasonality in end-user demand. Several other factors, including government rebates, distributor buying patterns and government tender timing impact the dollar value of product sales recorded in any particular quarter. In the United States, manufacturers of pharmaceutical products are responsible for 50 percent of the patient’s cost of branded prescription drugs related to the Medicare Part D Coverage Gap. We fulfill this obligation by providing rebates to the government, resulting in a reduction in the dollar value of U.S. net product sales in the quarter in which the rebates are provided. Historically, these rebates are higher during the first quarter primarily due to the larger volume of patient deductibles at the beginning of a calendar year. In addition, in the U.S., the timing of net product sales may be affected by fluctuations in wholesaler inventory levels. Outside of the U.S., the timing of governmental tenders for product may also impact net product sales in a particular quarter.

AVAILABLE INFORMATION

Our Current Reports on Form 8-K, Quarterly Reports on Form 10-Q and Annual Reports on Form 10-K are electronically filed with or furnished to the Securities and Exchange Commission (SEC), and all such reports and amendments to such reports have been and will be made available, free of charge, through our website (http://www.celgene.com) as soon as reasonably practicable after submission to the SEC. Such reports will remain available on our website for at least 12 months. The contents of our website or any other website are not incorporated by reference into this Annual Report on Form 10-K. The public may read and copy any materials filed by us with the SEC at the SEC's Public Reference Room at 100 F Street, NW, Washington, D.C. 20549.

The public may obtain information on the operation of the SEC's Public Reference Room by calling the SEC at 1-800-SEC-0330. The SEC maintains an Internet site (http://www.sec.gov) that contains reports, proxy and information statements, and other information regarding issuers that file electronically with the SEC.

DISCLOSURE PURSUANT TO SECTION 219 OF THE IRAN THREAT REDUCTION AND SYRIA HUMAN RIGHTS ACT OF 2012

Section 219 of the Iran Threat Reduction and Syria Human Rights Act of 2012 (ITRSHRA) added Section 13(r) to the Securities Exchange Act of 1934, as amended, which requires, among other things, disclosure by an issuer, in its annual or quarterly reports, as applicable, whether it or any of its affiliates knowingly conducted, without specific authority from a U.S. federal department or agency, any transaction or dealing with the Government of Iran, which includes, without limitation, any person or entity owned or controlled, directly or indirectly, by the Government of Iran or any of its political subdivisions, agencies or instrumentalities. Neither Celgene nor, to its knowledge, any of its affiliates engaged in activities during 2017 that are required to be disclosed pursuant to ITRSHRA.

FORWARD-LOOKING STATEMENTS

Certain statements contained or incorporated by reference in this Annual Report on Form 10-K are considered forward-looking statements (within the meaning of the Private Securities Litigation Reform Act of 1995, Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended) concerning our business, results of operations, economic performance and/or financial condition, based on management's current expectations, plans, estimates, assumptions and projections. Forward-looking statements are included, for example, in the discussions about:

- strategy;
- new product discovery and development;
- current or pending clinical trials;
- our products' ability to demonstrate efficacy or an acceptable safety profile;
- actions by the FDA and other regulatory authorities;
- product manufacturing, including our arrangements with third-party suppliers;
- product introduction and sales;
- royalties and contract revenues;
- expenses and net income;
- credit and foreign exchange risk management;
- liquidity;
- asset and liability risk management;
- the outcome of litigation and other proceedings;
- intellectual property rights and protections;
- economic factors;

- competition; and
- operational and legal risks.

Any statements contained in this report that are not statements of historical fact may be deemed forward-looking statements. Forward-looking statements generally are identified by the words "expects," "anticipates," "believes," "intends," "estimates," "aims," "plans," "may," "could," "will," "will continue," "seeks," "should," "predict," "potential," "outlook," "guidance," "target," "forecast," "probable," "possible" or the negative of such terms and similar expressions. Forward-looking statements are subject to change and may be affected by risks and uncertainties, most of which are difficult to predict and are generally beyond our control. Forward-looking statements speak only as of the date they are made, and we undertake no obligation to update any forward-looking statement in light of new information or future events, although we intend to continue to meet our ongoing disclosure obligations under the U.S. securities laws and other applicable laws.

We caution you that a number of important factors could cause actual results or outcomes to differ materially from those expressed in, or implied by, the forward-looking statements, and therefore you should not place too much reliance on them. These factors include, among others, those described herein, under "Risk Factors" and elsewhere in this Annual Report on Form 10-K and in our other public reports filed with the SEC. It is not possible to predict or identify all such factors, and therefore the factors that are noted are not intended to be a complete discussion of all potential risks or uncertainties that may affect forward-looking statements. If these or other risks and uncertainties materialize, or if the assumptions underlying any of the forward-looking statements prove incorrect, our actual performance and future actions may be materially different from those expressed in, or implied by, such forward-looking statements. We can offer no assurance that our estimates or expectations will prove accurate or that we will be able to achieve our strategic and operational goals.

ITEM 1A. RISK FACTORS

The following describes major risks to our business and should be considered carefully. Any of these factors could significantly and negatively affect our business, prospects, financial condition, operating results or credit ratings, which could cause the trading prices of our equity securities to decline. The risks described below are not the only risks we may face. Additional risks and uncertainties not presently known to us, or risks that we currently consider immaterial, could also negatively affect us.

Our operating results may be subject to significant fluctuations.

Our operating results may fluctuate from quarter to quarter and year to year for a number of reasons, including the risks discussed elsewhere in this “Risk Factors” section. Events such as a delay in product development or a revenue shortfall may cause financial results for a particular period to be below our expectations. In addition, we have experienced and may continue to experience fluctuations in our quarterly operating results due to the timing of charges that we may take. We have recorded, or may be required to record, charges that include development milestone and license payments under collaboration and license agreements, amortization of acquired intangibles and other acquisition related charges, and impairment charges. Several other factors, including government rebates, distributor buying patterns and government tender timing, impact the dollar value of product sales recorded in any particular quarter.

Our revenues are also subject to foreign exchange rate fluctuations due to the global nature of our operations. We recognize foreign currency gains or losses arising from our operation in the period in which we incur those gains or losses. Although we utilize foreign currency forward contracts, a combination of foreign currency put and call options, and occasionally purchased put options to manage foreign currency risk, our efforts to reduce currency exchange losses may not be successful. As a result, currency fluctuation among our reporting currency, the U.S. Dollar, and the currencies in which we do business will affect our operating results. Our net income may also fluctuate due to the impact of charges we may be required to take with respect to foreign currency and other hedge transactions. In particular, we may incur higher than expected charges from hedge ineffectiveness or from the termination of a hedge arrangement. For more information, see Item 7A. Quantitative and Qualitative Disclosures About Market Risk.

We are dependent on the continued commercial success of our primary products, REVLIMID®, POMALYST®/IMNOVID®, OTEZLA®, ABRAXANE®, and VIDAZA®.

Our business is largely dependent on the commercial success of REVLIMID®, POMALYST®/IMNOVID®, OTEZLA®, ABRAXANE®, and VIDAZA®. REVLIMID® currently accounts for over half of our total revenue. As new products, such as POMALYST®/IMNOVID® and OTEZLA®, have obtained regulatory approval and gained market acceptance, our dependence on REVLIMID® has decreased, a trend that we expect to continue. A significant decline in REVLIMID® net revenue, in the absence of offsetting increases in revenue from our other marketed

products, would have a material adverse effect on our results of operations, cash flows and financial condition. The success of these products depends on acceptance by regulators, key opinion leaders, physicians, and patients as effective drugs with certain advantages over other therapies. A number of factors, as discussed in greater detail below, may adversely impact the degree of acceptance of these products, including their efficacy, safety, price and benefits over competing products, as well as the reimbursement policies of third-party payers, such as government and private insurance plans.

If unexpected adverse events are reported in connection with the use of any of these products, physician and patient acceptance of the product could deteriorate and the commercial success of such product could be adversely affected. We are required to report to the FDA or similar bodies in other countries events associated with our products relating to death or serious injury. Adverse events could result in additional regulatory controls, such as the imposition of costly post-approval clinical studies or revisions to our approved labeling which could limit the indications or patient population for a product or could even lead to the withdrawal of a product from the market. THALOMID® is known to be toxic to the human fetus and exposure to the drug during pregnancy could result in significant deformities. REVLIMID® and POMALYST®/IMNOVID® are also considered toxic to the human fetus

and their respective labels contain warnings against use which could result in embryo-fetal exposure. While we have restricted distribution systems for THALOMID®, REVLIMID®, and POMALYST®/IMNOVID®, and endeavor to educate patients regarding the potential known adverse events, including pregnancy risks, we cannot ensure that all such warnings and recommendations will be complied with or that adverse events resulting from non-compliance will not occur.

Our future commercial success depends on gaining regulatory approval for products in development, and obtaining approvals for our current products for additional indications.

The testing, manufacturing and marketing of our products require regulatory approvals, including approval from the FDA and similar bodies in other countries. Our future growth would be negatively impacted if we fail to obtain timely, or at all, requisite regulatory approvals in the United States and internationally for products in development and approvals for our existing products for additional indications.

The principal risks to obtaining and maintaining regulatory approvals are as follows:

- In general, preclinical tests and clinical trials can take many years and require the expenditure of substantial resources, and the data obtained from these tests and trials may not lead to regulatory approval;
- Delays or rejections may be encountered during any stage of the regulatory process if the clinical or other data fails to demonstrate compliance with a regulatory agency's requirements for safety, efficacy and quality;
- Requirements for approval may become more stringent due to changes in regulatory agency policy or the adoption of new regulations or legislation;
- Even if a product is approved, the scope of the approval may significantly limit the indicated uses or the patient population for which the product may be marketed and may impose significant limitations in the nature of warnings, precautions and contra-indications that could materially affect the sales and profitability of the product;
- After a product is approved, the FDA or similar bodies in other countries may withdraw or modify an approval in a significant manner or request that we perform additional clinical trials or change the labeling of the product due to a number of reasons, including safety concerns, adverse events and side effects;
- Products, such as REVLIMID® and POMALYST®/IMNOVID®, that receive accelerated approval can be subject to an expedited withdrawal if post-marketing restrictions are not adhered to or are shown to be inadequate to assure safe use, or if the drug is shown to be unsafe or ineffective under its conditions of use;
- Guidelines and recommendations published by various governmental and non-governmental organizations can reduce the use of our approved products;
- Approved products, as well as their manufacturers, are subject to continuing and ongoing review by regulatory agencies, and the discovery of previously unknown problems with these products or the failure to comply with manufacturing or quality control requirements may result in restrictions on the manufacture, sale or use of a product or its withdrawal from the market; and
- Changes in regulatory agency policy or the adoption of new regulations or legislation could impose restrictions on the sale or marketing of our approved products.

If we fail to comply with laws or government regulations or policies our business could be adversely affected.

The discovery, preclinical development, clinical trials, manufacturing, risk evaluation and mitigation strategies (such as our REMS program), marketing and labeling of pharmaceuticals and biologics are all subject to extensive laws and government regulations and policies. In addition, individual states, acting through their attorneys general, are increasingly seeking to regulate the marketing of prescription drugs under state consumer protection and false advertising laws. If we fail to comply with the laws and regulations regarding the promotion and sale of our products, appropriate distribution of our products under our restricted distribution systems, off-label promotion and the promotion of unapproved products, government agencies may bring enforcement actions against us or private litigants may assert claims on behalf of the government against us that could inhibit our commercial capabilities and/or result

in significant damage awards and penalties.

Other matters that may be the subject of governmental or regulatory action which could adversely affect our business include laws, regulations and policies governing:

- protection of the environment, privacy, healthcare reimbursement programs, and competition;
- parallel importation of prescription drugs from outside the United States at prices that are regulated by the governments of various foreign countries; and
- mandated disclosures of clinical trial or other data, such as the EMA's policy on publication of clinical data.

Sales of our products will be significantly reduced if access to and reimbursement for our products by governmental and other third-party payers are reduced or terminated.

Sales of our current and future products depend, in large part, on the conditions under which our products are paid for by health maintenance, managed care, pharmacy benefit and similar health care management organizations (HCMOs), or reimbursed by government health administration authorities, private health coverage insurers and other third-party payers.

The influence of HCMOs has increased in recent years due to the growing number of patients receiving coverage through a few large HCMOs as a result of industry consolidation. One objective of HCMOs is to contain and, where possible, reduce healthcare expenditures. HCMOs typically use formularies (lists of approved medicines available to members of a particular HCMO), clinical protocols, volume purchasing, long-term contracts and other methods to negotiate prices with pharmaceutical providers. Due to their lower cost generally, generic medicines are typically placed in preferred tiers of HCMO formularies. Additionally, many formularies include alternative and competitive products for treatment of particular medical problems. Exclusion of our products from a formulary or HCMO-implemented restrictions on the use of our products can significantly impact drug usage in the HCMO patient population, and consequently our revenues.

Generally, in Europe and other countries outside the United States, the government-sponsored healthcare system is the primary payer of patients' healthcare costs. These health care management organizations and third-party payers are increasingly challenging the prices charged for medical products and services, seeking to implement cost-containment programs, including price controls, restrictions on reimbursement and requirements for substitution of generic products. Our products continue to be subject to increasing price and reimbursement pressure due to price controls imposed by governments in many countries; increased difficulty in obtaining and maintaining satisfactory drug reimbursement rates; and the tendency of governments and private health care providers to favor generic pharmaceuticals. In addition, governmental and private third-party payers and purchasers of our products may restrict access to formularies or otherwise discourage use of our products. Limitations on patient access to our drugs, adoption of price controls and cost-containment measures could adversely affect our business. In addition, our operating results may also be affected by distributors seeking to take advantage of price differences among various markets by buying our products in low cost markets for resale in higher cost markets.

The Affordable Care Act and other federal and state legislation may affect our pricing policies and government reimbursement of our products which may adversely impact our revenues and profitability.

In the U.S. there have been and are likely to continue to be a number of legislative and regulatory proposals and enactments related to drug pricing and reimbursement at both the federal and state level that could impact our profitability. The Patient Protection and Affordable Care Act and the Health Care and Education Reconciliation Act of 2010 were signed into law in March 2010, and are referred to collectively as the Healthcare Reform Acts. These reforms have significantly impacted the pharmaceutical industry and, in the coming years, it is likely that additional changes, including the possible repeal of all or certain aspects of these reforms, will be made. Moreover, changes could be made to governmental healthcare and insurance reimbursement programs that could significantly impact the profitability of our products. Additionally, the pricing and reimbursement of pharmaceutical products, in general and specialty drugs in particular, have received the attention of U.S. policymakers, state legislators and others. At this time, we cannot predict the impact of this increased scrutiny on the pricing or reimbursement of our products or pharmaceutical products generally.

The Healthcare Reform Acts, among other things, made significant changes to the Medicaid rebate program by increasing the minimum rebates that manufacturers like us are required to pay. These changes also expanded the government's 340B drug discount program by expanding the category of entities qualified to participate in the program and benefit from its deeply discounted drug pricing. The Healthcare Reform Acts also obligate the Health Resources and Services Administration (HRSA), which administers the 340B program, to update the agreement that each manufacturer must sign to participate in the 340B program to require each manufacturer to offer the 340B price to covered entities if the manufacturer makes the drug product available to any other purchaser at any price, and to report the ceiling prices for its drugs to the government. HRSA issued this update in late 2016, and we signed an amendment to our agreement on December 29, 2016.

HRSA also issued proposed regulations to implement an administrative dispute resolution (ADR) process for certain disputes arising under the 340B program, including (1) claims by covered entities that they have been overcharged for covered outpatient drugs by manufacturers; and (2) claims by manufacturers, after a manufacturer has conducted an audit, that a covered entity has violated the prohibition on diversion of covered outpatient drugs to ineligible patients or duplicate discounts. The exact timing and content of final action on these matters is uncertain at this time. Depending on their final form, these actions could affect our obligations under the 340B program in ways that may have an adverse impact on our business. Additionally, in early 2016, HRSA finalized a regulation regarding the 340B pricing methodology and providing guidelines for when civil monetary penalties may be issued for "knowing and intentional" manufacturer overcharges of 340B covered entities. HRSA has delayed the effective date of this regulation to July 1, 2018.

We have received an inquiry from HRSA regarding our limited distribution networks for REVLIMID®, POMALYST®, and THALOMID® and our compliance with the 340B program. We have cooperated fully in responding to this inquiry and believe that we have complied with applicable legal requirements. If, however, we are ultimately required to change our sales or pricing practices with regard to the distribution of these drugs, there would be an adverse effect on our revenues and profitability.

Our ability to sell our products to hospitals in the United States depends in part on our relationships with group purchasing organizations.

Many existing and potential customers for our products become members of group purchasing organizations (GPOs). GPOs negotiate pricing arrangements and contracts, sometimes on an exclusive basis, with medical supply manufacturers and distributors, and these negotiated prices are made available to a GPO's affiliated hospitals and other members. If we are not one of the providers selected by a GPO, affiliated hospitals and other members may be less likely to purchase our products, and if the GPO has negotiated a strict sole source, market share compliance or bundling contract for another manufacturer's products, we may be precluded from making sales to members of the GPO for the duration of that contractual arrangement. Our failure to enter into or renew contracts with GPOs may cause us to lose market share and could adversely affect our sales.

Our long-term success depends, in part, on intellectual property protection.

Our success depends, in part, on our ability to obtain and enforce patents, protect trade secrets, obtain licenses to technology owned by third parties and to conduct our business without infringing upon the proprietary rights of others. The patent positions of pharmaceutical and biopharmaceutical companies, including ours, can be uncertain and involve complex legal and factual questions. There can be no assurance that if claims of any of our owned or licensed patents are challenged by one or more third parties (through, for example, litigation or post grant review in the United States Patent and Trademark Office (USPTO) or European Patent Office (EPO)), a court or patent authority ruling on such challenge will ultimately determine, after all opportunities for appeal have been exhausted, that our patent claims are valid and enforceable. If a third party is found to have rights covering products or processes used by us, we could be forced to cease using such products or processes, be subject to significant liabilities to such third party and/or be required to obtain license rights from such third party. Lawsuits involving patent claims are costly and could affect our results of operations, result in significant expense and divert the attention of managerial and scientific personnel. For more information on challenges to certain of our patents and settlement of certain of these challenges, see Note 18 of Notes to Consolidated Financial Statements contained in this Annual Report on Form 10-K.

In addition, we do not know whether any of our owned or licensed pending patent applications will result in the issuance of patents or, if patents are issued, whether they will be dominated by third-party patent rights, provide significant proprietary protection or commercial advantage or be circumvented, opposed, invalidated, rendered unenforceable or infringed by others.

Our intellectual property rights may be affected by certain provisions of the America Invents Act (“AIA”) enacted in 2011. For example, under the AIA, members of the public may seek to challenge an issued patent by petitioning the USPTO to institute a post grant proceeding, such as a Post Grant Review (PGR) or Inter Partes Review (IPR). Once a post grant proceeding is instituted, the USPTO may find grounds to revoke the challenged patent or specific claims therein. For more information with respect to IPRs, see Note 18 of Notes to Consolidated Financial Statements contained in this Annual Report on Form 10-K. A similar procedure (known as a patent opposition) has existed in Europe for many years and we have defended our European patents in certain of those proceedings. We cannot predict whether any other Celgene patents will ever become the subject of a post grant proceeding or patent opposition. If a significant product patent is successfully challenged in a post grant proceeding or patent opposition, it may be revoked, which would have a serious negative impact on our ability to maintain exclusivity in the market-place for our commercial products affected by such revocation and could adversely affect our future revenues and profitability.

On October 2, 2014, the EMA adopted its clinical transparency policy, "Policy on Publication of Clinical Data for Medicinal Products for Human Use" (Clinical Data Policy), which became effective on January 1, 2015. In general, under the Clinical Data Policy, clinical data is not deemed to be commercially confidential data. Therefore, there is a risk that unpublished proprietary

information, including trade secrets that are incorporated into a marketing application before the EMA may be made publicly available. It is difficult to predict how any public disclosure of our trade secrets or other confidential and proprietary information made available under the Clinical Data Policy may adversely impact our patent rights and our competitive advantage in the marketplace.

Also, procedures for obtaining patents and the degree of protection against the use of a patented invention by others vary from country to country. There can be no assurance that the issuance to us in one country of a patent covering an invention will be followed by the issuance in other countries of patents covering the same invention or that any judicial interpretation of the validity, enforceability or scope of the claims in a patent issued in one country will be similar to or recognized by the judicial interpretation given to a corresponding patent issued in another country.

The USPTO and various foreign governmental patent agencies require compliance with a number of procedural, documentary, fee payment and other similar provisions during the patent application process. While an inadvertent lapse can in many cases be cured by payment of a late fee or by other means in accordance with the applicable rules, there are situations in which noncompliance can result in abandonment or lapse of the patent or patent application, resulting in partial or complete loss of patent rights in the relevant jurisdiction.

We also rely upon unpatented, proprietary and trade secret technology that we seek to protect, in part, by confidentiality agreements with our collaborative partners, employees, consultants, outside scientific collaborators, sponsored researchers and other advisors. Despite precautions taken by us, there can be no assurance that these agreements provide meaningful protection, that they will not be breached, that we would have adequate remedies for any such breach or that our proprietary and trade secret technologies will not otherwise become known to others or found to be non-proprietary.

We receive confidential and proprietary information from collaborators, prospective licensees and other third parties. In addition, we employ individuals who were previously employed at other biotechnology or pharmaceutical companies. We may be subject to claims that we or our employees, consultants or independent contractors have inadvertently or otherwise used or disclosed confidential information of these third parties or our employees' former employers. Litigation may be necessary to defend against these claims, which can result in significant costs if we are found to have improperly used the confidential or proprietary information of others. Even if we are successful in defending against these claims, litigation could result in substantial costs and diversion of personnel and resources.

Our products may face competition from lower cost generic or follow-on products.

Manufacturers of generic drugs are seeking to compete with our drugs and present a significant challenge to us. Those manufacturers may challenge the scope, validity or enforceability of our patents in court, requiring us to engage in complex, lengthy and costly litigation. If any of our owned or licensed patents are infringed or challenged, we may not be successful in enforcing or defending those intellectual property rights and, as a result, may not be able to develop or market the relevant product exclusively, which would have a material adverse effect on our sales of that product. In addition, manufacturers of innovative drugs as well as generic drug manufacturers may be able to design their products around our owned or licensed patents and compete with us using the resulting alternative technology. For more information concerning certain pending proceedings relating to our intellectual property rights and settlements of certain challenges, see Note 18 of Notes to Consolidated Financial Statements contained in this Annual Report on Form 10-K.

Upon the expiration or loss of patent protection for a product, or upon the "at-risk" launch (despite pending patent infringement litigation against the generic product) by a manufacturer of a generic version of one of our products, we can quickly lose a significant portion of our sales of that product. In addition, if generic versions of our competitors' branded products lose their market exclusivity, our patented products may face increased competition or pricing

pressure.

Our business operates in an extremely competitive environment.

The pharmaceutical and biotechnology industries in which we operate are highly competitive and subject to rapid and significant technological change. Our present and potential competitors include major pharmaceutical and biotechnology companies, as well as specialty pharmaceutical firms, including, but not limited to:

- Hematology and Oncology: AbbVie, Amgen, AstraZeneca, Bristol-Myers-Squibb, Eisai, Gilead, Johnson & Johnson, Merck, Novartis, Roche/Genentech, Sanofi and Takeda; and
- Inflammation and Immunology: AbbVie, Amgen, Biogen, Eisai, Eli Lilly, Johnson & Johnson, Merck, Novartis, Pfizer and UCB S.A.

Some of these companies have considerably greater financial, technical and marketing resources than we have, enabling them, among other things, to make greater research and development investments. We also experience competition in drug development from universities and other research institutions, and we compete with others in acquiring technology from these sources. The pharmaceutical industry has undergone, and is expected to continue to undergo, rapid and significant technological change, and we expect competition to intensify as technical advances are made and become more widely known. The development of products or processes by our competitors with significant advantages over those that we are developing could adversely affect our future revenues and profitability.

A decline in general economic conditions would adversely affect our results of operations.

Sales of our products are dependent, in large part, on third-party payers. As a result of global credit and financial market conditions, these organizations may be unable to satisfy their reimbursement obligations or may delay payment. For information about receivable balances relating to government-owned or -controlled hospitals in European countries, see Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations.

In addition, due to tightened global credit, there may be a disruption or delay in the performance of our third-party contractors, suppliers or collaborators. We rely on third parties for several important aspects of our business, including portions of our product manufacturing, clinical development of future collaboration products, conduct of clinical trials and supply of raw materials. If such third parties are unable to satisfy their commitments to us, our business could be adversely affected.

We may be required to modify our business practices, pay fines and significant expenses or experience other losses due to governmental investigations or other enforcement activities.

We may become subject to litigation or governmental investigations in the United States and foreign jurisdictions that may arise from the conduct of our business. Like many companies in our industry, we have from time to time received inquiries and subpoenas and other types of information requests from government authorities and we have been subject to claims and other actions related to our business activities.

While the ultimate outcomes of investigations and legal proceedings are difficult to predict, adverse resolutions or settlements of those matters could result in, among other things:

- significant damage awards, fines, penalties or other payments, and administrative remedies, such as exclusion and/or debarment from government programs, or other rulings that preclude us from operating our business in a certain manner;
- changes and additional costs to our business operations to avoid risks associated with such litigation or investigations;
- product recalls;
- reputational damage and decreased demand for our products; and
- expenditure of significant time and resources that would otherwise be available for operating our business.

For more information relating to governmental investigations and other legal proceedings and recent settlements of legal proceedings, see Note 18 of Notes to Consolidated Financial Statements contained in this Annual Report on Form 10-K.

The development of new biopharmaceutical products involves a lengthy and complex process and we may be unable to commercialize any of the products we are currently developing.

Many of our drug candidates are in the early or mid-stages of research and development and will require the commitment of substantial financial resources, extensive research, development, preclinical testing, clinical trials,

manufacturing scale-up and regulatory approval prior to being ready for sale. This process takes many years of effort without any assurance of ultimate success. Our product development efforts with respect to a product candidate may fail for many reasons, including:

- the failure of the product candidate in preclinical or clinical studies;
- adverse patient reactions to the product candidate or indications of other safety concerns;
- insufficient clinical trial data to support the effectiveness or superiority of the product candidate;

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- our inability to manufacture sufficient quantities of the product candidate for development or commercialization activities in a timely and cost-efficient manner;
- our failure to obtain, or delays in obtaining, the required regulatory approvals for the product candidate, the facilities or the process used to manufacture the product candidate;
- changes in the regulatory environment, including pricing and reimbursement, that make development of a new product or of an existing product for a new indication no longer attractive;
- the failure to obtain or maintain satisfactory drug reimbursement rates by governmental or third-party payers; and
- the development of a competitive product or therapy.

If a product were to fail to be approved or if sales fail to materialize for a newly approved product, we may incur losses related to the write-down of inventory, impairment of property, plant and equipment dedicated to the product or expenses related to restructuring.

Disruptions of our manufacturing and distribution operations could significantly interrupt our production and distribution capabilities.

We have our own manufacturing facilities for many of our products and we have contracted with third parties to provide other manufacturing, finishing, and packaging services. Any of those manufacturing processes could be partially or completely disrupted by fire, contamination, natural disaster, terrorist attack or governmental action. A disruption could lead to substantial production delays and the need to establish alternative manufacturing sources for the affected products requiring additional regulatory approvals. In the interim, our finished goods inventories may be insufficient to satisfy customer orders on a timely basis. Further, our business interruption insurance may not adequately compensate us for any losses that may occur.

In all the countries where we sell our products, governmental regulations define standards for manufacturing, packaging, labeling, distributing and storing pharmaceutical products. Our failure to comply, or the failure of our contract manufacturers and distributors to comply with applicable regulations could result in sanctions being imposed on them or us, including fines, injunctions, civil penalties, disgorgement, suspension or withdrawal of approvals, license revocation, seizures or recalls of products, operating restrictions and criminal prosecutions.

We have contracted with various distributors to distribute most of our branded products. If our distributors fail to perform and we cannot secure a replacement distributor within a reasonable period of time, our revenue could be adversely affected.

The consolidation of drug wholesalers and other wholesaler actions could increase competitive and pricing pressures.

We sell our pharmaceutical products in the United States primarily through wholesale distributors and contracted pharmacies. These wholesale customers comprise a significant part of our distribution network for pharmaceutical products in the United States. This distribution network is continuing to undergo significant consolidation. As a result, a smaller number of large wholesale distributors and pharmacy chains control a significant share of the market. We expect that consolidation of drug wholesalers and pharmacy chains will increase competitive and pricing pressures on pharmaceutical manufacturers, including us. In addition, wholesalers may apply pricing pressure through fee-for-service arrangements and their purchases may exceed customer demand, resulting in increased returns or reduced wholesaler purchases in later periods.

Risks from the improper conduct of employees, agents, contractors or collaborators could adversely affect our business or reputation.

We cannot ensure that our compliance controls, policies and procedures will in every instance protect us from acts committed by our employees, agents, contractors or collaborators that violate the laws or regulations of the jurisdictions in which we operate, including employment, anti-corruption, environmental, competition and privacy laws. Such improper actions, particularly with respect to foreign healthcare professionals and government officials, could subject us to civil or criminal investigations, monetary and injunctive penalties, adversely impact our ability to conduct business in certain markets, negatively affect our results of operations and damage our reputation.

We are subject to a variety of risks related to the conduct and expansion of our business internationally, particularly in emerging markets.

As our operations expand globally, we are subject to risks associated with conducting business in foreign markets, particularly in emerging markets. Those risks include:

- increased management, travel, infrastructure and legal compliance costs;
- longer payment and reimbursement cycles;
- difficulties in enforcing contracts and collecting accounts receivable;
- local marketing and promotional challenges;
- lack of consistency, and unexpected changes, in foreign regulatory requirements and practices;
- increased risk of governmental and regulatory scrutiny and investigations;
- increased exposure to fluctuations in currency exchange rates;
- the burdens of complying with a wide variety of foreign laws and legal standards;
- operating in locations with a higher incidence of corruption and fraudulent business practices;
- difficulties in staffing and managing foreign sales and development operations;
- import and export requirements, tariffs, taxes and other trade barriers;
- weak or no protection of intellectual property rights;
- possible enactment of laws regarding the management of and access to data and public networks and websites;
- possible future limitations on foreign-owned businesses;
- increased financial accounting and reporting burdens and complexities; and
- other factors beyond our control, including political, social and economic instability, popular uprisings, war, terrorist attacks and security concerns in general.

As we continue to expand our business into multiple international markets, our success will depend, in large part, on our ability to anticipate and effectively manage these and other risks associated with our international operations. Any of these risks could harm our international operations and reduce our sales, adversely affecting our business, results of operations, financial condition and growth prospects.

We may not realize the anticipated benefits of acquisitions and strategic initiatives.

We may face significant challenges in effectively integrating entities and businesses that we acquire, including the pending acquisitions of Impact BioMedicines, Inc. and Juno Therapeutics, Inc., and we may not realize the benefits anticipated from such acquisitions. Achieving the anticipated benefits of our acquired businesses will depend in part upon whether we can integrate our
businesses in an efficient and effective manner. Our integration of acquired businesses involves a number of risks, including:

- demands on management related to the increase in our size after an acquisition;
- the diversion of management’s attention from daily operations to the integration of acquired businesses and personnel;
- higher than anticipated integration costs;
- failure to achieve expected synergies and costs savings;
- difficulties in the assimilation and retention of employees;
- difficulties in the assimilation of different cultures and practices, as well as in the assimilation of broad and geographically

dispersed personnel and operations; and

- difficulties in the integration of departments, systems, including accounting systems, technologies, books and records and procedures, as well as in maintaining uniform standards and controls, including internal control over financial reporting, and related procedures and policies.

In addition, we may not be able to realize the projected benefits of corporate strategic initiatives we may pursue in the future.

We may not be able to continue to attract and retain highly qualified managerial, scientific, manufacturing and commercial talent.

The success of our business depends, in large part, on our continued ability to attract and retain highly qualified managerial, scientific, medical, manufacturing, commercial and other professional personnel, and competition for these types of personnel is intense. We cannot be sure that we will be able to attract or retain skilled personnel or that the costs of doing so will not materially increase.

Risks associated with using hazardous materials in our business could subject us to significant liability.

We use certain hazardous materials in our research, development, manufacturing and other business activities. If an accident or environmental discharge occurs, or if we discover contamination caused by prior owners and operators of properties we acquire, we could be liable for remediation obligations, damages and fines that could exceed our insurance coverage and financial resources. Additionally, the cost of compliance with environmental and safety laws and regulations may increase in the future, requiring us to expend more financial resources either in compliance or in purchasing supplemental insurance coverage.

We are subject to various legal proceedings, claims and investigative demands in the ordinary course of our business, the ultimate outcome of which may result in significant expense, payments and penalties.

We and certain of our subsidiaries are involved in various legal proceedings that include patent, product liability, consumer, commercial, antitrust and other claims that arise from time to time in the ordinary course of our business. Litigation is inherently unpredictable. Although we believe we have substantial defenses in these matters, we could in the future be subject to adverse judgments, enter into settlements of claims or revise our expectations regarding the outcomes of certain matters, and such developments could have a material adverse effect on our results of operations in the period in which such judgments are received or settlements occur. For more information regarding settlement of certain legal proceedings, see Note 18 of Notes to Consolidated Financial Statements contained in this Annual Report on Form 10-K.

Our activities relating to the sale and marketing and the pricing of our products are subject to extensive regulation under the U.S. Federal Food, Drug, and Cosmetic Act, the Medicaid Drug Rebate Program, the False Claims Act, the Foreign Corrupt Practices Act and other federal and state statutes, including those discussed elsewhere in this report, as well as anti-kickback and false claims laws, and similar laws in international jurisdictions. Like many companies in our industry, we have from time to time received inquiries and subpoenas and other types of information demands from government authorities, and been subject to claims and other actions related to our business activities brought by governmental authorities, as well as by consumers, third-party payers, stockholders and others. There can be no assurance that existing or future proceedings will not result in significant expense, civil payments, fines or other adverse consequences. For more information relating to governmental investigations and other legal proceedings and recent settlements of legal proceedings, see Note 18 of Notes to Consolidated Financial Statements contained in this Annual Report on Form 10-K.

Product liability claims could adversely affect our business, results of operations and financial condition.

Product liability claims could result in significant damage awards or settlements. Such claims can also be accompanied by consumer fraud claims or claims by third-party payers seeking reimbursement of the cost of our products. In addition, adverse determinations or settlements of product liability claims may result in suspension or withdrawal of a product marketing authorization or changes to our product labeling, including restrictions on therapeutic indications, inclusion of new contraindications, warnings or precautions, which would have a material adverse effect on sales of such product. We have historically purchased product liability coverage from third-party carriers for a portion of our potential liability. Such insurance has become increasingly difficult and costly to obtain. In this context and in light of the strength of our balance sheet we now self-insure these risks beginning in 2016. Product liability claims, regardless of their merits or ultimate outcome, are costly, divert management's attention, may harm our reputation and can impact the demand for our products. There can be no assurance that we will be able to recover under any existing third-party insurance policy or that such coverage will be adequate to fully cover all risks or damage awards or settlements.

Additionally, if we are unable to meet our self-insurance obligations for claims that are more than we estimated or reserved for that require substantial expenditures, there could be a material adverse effect on our financial statements and results of operations.

Changes in our effective income tax rate could adversely affect our results of operations.

We are subject to income taxes in both the United States and various foreign jurisdictions and our domestic and international tax liabilities are largely dependent upon the distribution of income among these different jurisdictions. Various factors may have favorable or unfavorable effects on our effective income tax rate. These factors include interpretations of existing tax laws, the accounting for stock options and other share-based compensation, changes in tax laws and rates including the recently enacted U.S. tax reform on December 22, 2017 formerly known as the Tax Cuts and Jobs Act (2017 Tax Act), future levels of research and development spending, changes in accounting standards, changes in the mix of earnings in the various tax jurisdictions in which we operate, the outcome of examinations by the U.S. Internal Revenue Service and other tax authorities, the accuracy of our estimates for unrecognized tax benefits and realization of deferred tax assets and changes in overall levels of pre-tax earnings. See 'Executive Summary' and 'Liquidity and Capital Resources' within Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations as well as Note 16 of Notes to the Consolidated Financial Statements contained in this Annual Report on Form 10-K for additional details related to the 2017 Tax Act.

Currency fluctuations and changes in exchange rates could adversely affect our revenue growth, increase our costs and cause our profitability to decline.

We collect and pay a substantial portion of our sales and expenditures in currencies other than the U.S. dollar. Therefore, fluctuations in foreign currency exchange rates affect our operating results. We utilize foreign currency forward contracts, a combination of foreign currency put and call options, and occasionally purchased put options, all of which are derivative instruments, to manage foreign currency risk. We use these derivative instruments to hedge certain forecasted transactions, manage exchange rate volatility in the translation of foreign earnings and reduce exposures to foreign currency fluctuations of certain balance sheet items denominated in foreign currencies. The use of these derivative instruments is intended to mitigate a portion of the exposure of these risks with the intent to reduce our risk or cost, but generally would not fully offset any change in operating results as a consequence of fluctuations in foreign currencies. Any significant foreign exchange rate fluctuations could adversely affect our financial condition and results of operations. See Note 5 of Notes to Consolidated Financial Statements and Item 7A. Quantitative and Qualitative Disclosures About Market Risk contained elsewhere in this report.

We may experience an adverse market reaction if we are unable to meet our financial reporting obligations.

As we continue to expand at a rapid pace, the development of new and/or improved automated systems will remain an ongoing priority. During this expansion period, our internal control over financial reporting may not prevent or detect misstatements in our financial reporting. Such misstatements may result in litigation and/or negative publicity and possibly cause an adverse market reaction that may negatively impact our growth plans and the value of our common stock.

Impairment charges or write downs in our books and changes in accounting standards could have a significant adverse effect on our results of operations and financial condition.

The value allocated to certain of our assets could be substantially impaired due to a number of factors beyond our control. Also, if any of our strategic equity investments decline in value, we may be required to write down such investments. In addition, new or revised accounting standards, rules and interpretations could result in changes to the recognition of income and expense that may materially and adversely affect our financial results.

The price of our common stock may fluctuate significantly.

The market for our shares of common stock may fluctuate significantly. The following key factors may have an adverse impact on the market price of our common stock:

- results of our clinical trials or adverse events associated with our marketed products;
- fluctuations in our commercial and operating results;
- announcements of technical or product developments by us or our competitors;
- market conditions for pharmaceutical and biotechnology stocks in particular;

- changes or anticipated changes in laws and governmental regulations, including changes in tax, healthcare, environmental, competition and patent laws;
- new accounting pronouncements or regulatory rulings;
- public announcements regarding medical advances in the treatment of the disease states that we are targeting;
- patent or proprietary rights developments;
- changes in pricing and third-party reimbursement policies for our products;
- the outcome of litigation involving our products, processes or intellectual property;
- the existence and outcome of governmental investigations and proceedings;
- regulatory actions that may impact our products or potential products;
- disruptions in our manufacturing processes or supply chain;
- failure of our collaboration partners to successfully develop potential drug candidates;
- competition; and
- investor reaction to announcements regarding business or product acquisitions.

In addition, a market downturn in general and/or in the biopharmaceutical sector in particular, may adversely affect the market price of our securities, which may not necessarily reflect the actual or perceived value of our Company.

Our business would be adversely affected if we are unable to service our debt obligations.

We have incurred various forms of indebtedness, including senior notes, commercial paper and a senior unsecured credit facility. Our ability to pay interest and principal amounts when due, comply with debt covenants or repurchase the senior notes if a change of control occurs, will depend upon, among other things, continued commercial success of our products and other factors that affect our future financial and operating performance, including prevailing economic conditions and financial, business and regulatory factors, many of which are beyond our control.

If we are unable to generate sufficient cash flow to service the debt service requirements under our debt instruments, we may be forced to take remedial actions such as:

- restructuring or refinancing our debt;
- seeking additional debt or equity capital;
- reducing or delaying our business activities, acquisitions, investments or capital expenditures, including research and development expenditures; or
- selling assets, businesses, products or other potential revenue streams.

Such measures might not be successful and might not enable us to service our debt obligations. In addition, any such financing, refinancing or sale of assets might not be available on economically favorable terms, if at all.

A breakdown or breach of our information technology systems and cyber security efforts could subject us to liability, reputational damage or interrupt the operation of our business.

We rely upon our information technology systems and infrastructure for our business. The size and complexity of our computer systems make them potentially vulnerable to breakdown and unauthorized intrusion. We could also experience a business interruption, theft of confidential information, or reputational damage from industrial espionage attacks, malware or other cyber attacks, which may compromise our system infrastructure or lead to data leakage, either internally or at our third-party providers. Similarly, data privacy breaches by those who access our systems may pose a risk that sensitive data, including intellectual property, trade secrets or personal information belonging to us, our patients, employees, customers or other business partners, may be exposed to unauthorized persons or to the public. Although the aggregate impact on our operations and financial condition has

not been material to date, we have been the target of events of this nature and expect them to continue. We continuously monitor our data, information technology systems (and those of our third-party providers where appropriate) and our personnel's usage of these systems to reduce these risks and potential threats. However, cyber-attacks are increasing in their frequency, sophistication and intensity, and have become increasingly difficult to detect. There can be no assurance that our efforts to protect our data and information technology systems will prevent breakdowns or breaches in our systems (or that of our third-party providers) that could adversely affect our business and result in financial and reputational harm to us, theft of trade secrets and other proprietary information, legal claims or proceedings, liability under laws that protect the privacy of personal information, and regulatory penalties.

The illegal distribution and sale by third parties of counterfeit versions of our products or stolen products could have a negative impact on our reputation and business.

Third parties might illegally distribute and sell counterfeit or unfit versions of our products, which do not meet our rigorous manufacturing and testing standards. A patient who receives a counterfeit or unfit drug may be at risk for a number of dangerous health consequences. Our reputation and business could suffer harm as a result of counterfeit or unfit drugs sold under our brand name. In addition, thefts of inventory at warehouses, plants or while in-transit, which are not properly stored and which are sold through unauthorized channels, could adversely impact patient safety, our reputation and our business.

We have certain charter and by-law provisions that may deter a third-party from acquiring us and may impede the stockholders’ ability to remove and replace our management or board of directors.

Our board of directors has the authority to issue, at any time, without further stockholder approval, up to 5.0 million shares of preferred stock and to determine the price, rights, privileges and preferences of those shares. An issuance of preferred stock could discourage a third-party from acquiring a majority of our outstanding voting stock. Additionally, our by-laws contain provisions intended to strengthen the board’s position in the event of a hostile takeover attempt. These provisions could impede the stockholders’ ability to remove and replace our management and/or board of directors. Furthermore, we are subject to the provisions of Section 203 of the Delaware General Corporation Law, an anti-takeover law, which may also dissuade a potential acquirer of our common stock.

In addition to the risks relating to our common stock, holders of our CVRs are subject to additional risks.

On October 15, 2010, we acquired all of the outstanding common stock of Abraxis BioScience, Inc. (Abraxis) and in connection with our acquisition, contingent value rights (CVRs) were issued entitling each holder of a CVR to a pro rata portion of certain net sales payments if certain specified conditions are satisfied. In addition to the risks relating to our common stock, CVR holders are subject to additional risks, including:

- an active public market for the CVRs may not continue to exist or the CVRs may trade at low volumes, both of which could have an adverse effect on the market price of the CVRs;
- if the net sales targets specified in the CVR Agreement are not achieved within the time periods specified, no payment will be made and the CVRs will expire valueless;
- since the U.S. federal income tax treatment of the CVRs is unclear, any part of a CVR payment could be treated as ordinary income and the tax thereon may be required to be paid prior to the receipt of the CVR payment;
- any payments in respect of the CVRs are subordinated to the right of payment of certain of our other indebtedness;
- we may under certain circumstances redeem the CVRs; and
- upon expiration of our obligations under the CVR Agreement to continue to commercialize ABRAXANE® or any of the other Abraxis pipeline products, we may discontinue such efforts, which would have an adverse effect on the value of the CVRs.

ITEM 1B. UNRESOLVED STAFF COMMENTS

None.

ITEM 2. PROPERTIES

Our corporate headquarters are located in Summit, New Jersey and our international headquarters are located in Boudry, Switzerland. Summarized below are the locations, primary usage and approximate square footage of the facilities we own worldwide:

Location	Primary Usage	Approximate Square Feet
Summit, New Jersey (two locations)	Administration, marketing, research	1,933,000
Boudry, Switzerland	Manufacturing, administration and warehousing	269,000
Phoenix, Arizona	Manufacturing and warehousing	254,000
Zofingen, Switzerland	Manufacturing	8,100

We occupy the following facilities, located in the United States, under operating lease arrangements, none of which are individually material to us. Under these lease arrangements, we may be required to reimburse the lessors for real estate taxes, insurance, utilities, maintenance and other operating costs. All leases are with unaffiliated parties.

Location	Primary Usage	Approximate Square Feet
San Diego, California	Office space and research	271,500
Berkeley Heights, New Jersey	Office space	98,800
Cambridge, Massachusetts	Office space and research	83,000
Warren, New Jersey	Office space and research	73,500
San Francisco, California	Office space and research	55,800
Overland Park, Kansas	Office space	29,600
Seattle, Washington	Research	30,800
Emeryville, California	Office space and research	4,900
Los Angeles, California	Office space	3,800
Washington, D.C.	Office space	3,500
Dallas, Texas	Office space	3,100

We also lease a number of offices under various lease agreements outside of the United States for which the minimum annual rents may be subject to specified annual rent increases. As of December 31, 2017, the non-cancelable lease terms for our operating leases expire at various dates between 2018 and 2025 and in some cases include renewal options. The total amount of rent expense recorded for all leased facilities in 2017 was $54 million.

ITEM 3. LEGAL PROCEEDINGS

See Note 18 of Notes to Consolidated Financial Statements contained in this Annual Report on Form 10-K.

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

(a) MARKET INFORMATION

Our common stock is traded on the NASDAQ Global Select Market under the symbol "CELG." The following table sets forth, for the periods indicated, the intra-day high and low prices per share of common stock on the NASDAQ Global Select Market:

	High	Low
2017:		
Fourth Quarter	$147.17	$94.55
Third Quarter	146.13	126.86
Second Quarter	135.18	113.63
First Quarter	127.64	111.06
2016:		
Fourth Quarter	$127.00	$96.93
Third Quarter	117.90	98.25
Second Quarter	111.90	94.42
First Quarter	119.59	93.05

	Cumulative Total Return					
	12/12	12/13	12/14	12/15	12/16	12/17
Celgene Corporation	$100.00	$215.33	$285.10	$305.24	$295.02	$265.99
S&P 500	100.00	132.04	149.89	151.94	169.82	206.49
NASDAQ Composite	100.00	139.89	160.47	171.83	187.03	242.34
NASDAQ Biotechnology	100.00	165.93	222.94	249.18	196.00	238.39

* $100 Invested on 12/31/12 in Stock or Index – Including Reinvestment of Dividends, Fiscal Year Ended December 31.

(b) HOLDERS

The closing sales price per share of common stock on the NASDAQ Global Select Market on February 2, 2018 was $99.80. As of February 2, 2018, there were approximately 378 holders of record of our common stock.

(c) DIVIDEND POLICY

We have never declared or paid any cash dividends on our common stock and have no present intention to pay a cash dividend on our common stock.

(d) EQUITY COMPENSATION PLAN INFORMATION

We incorporate information regarding the securities authorized for issuance under our equity compensation plan into this section by reference from the section entitled "Equity Compensation Plan Information" to be included in the proxy statement for our 2018 Annual Meeting of Stockholders.

(e) REPURCHASE OF EQUITY SECURITIES

From April 2009 through December 2017, our Board of Directors approved purchases of up to $20.5 billion of our common stock. Approved amounts exclude share purchase transaction fees.

The following table presents the number of shares purchased during the three-month period ended December 31, 2017, the average price paid per share, the number of shares that were purchased and the dollar value of shares that still could have been purchased, pursuant to our repurchase authorization:

Period	Total Number of Shares Purchased	Average Price Paid per Share	Total Number of Shares Purchased as Part of Publicly Announced Plans or Programs	Dollar Value of Shares That May Yet Be Purchased Under the Plans or Programs
October 1 - October 31	4,963,879	$101.70	4,963,879	$3,303,014,461
November 1 - November 30	17,614,593	$102.02	17,614,593	$1,505,953,347
December 1 - December 31	6,455,783	$105.87	6,455,783	$822,471,283
	29,034,255	$102.82	29,034,255	

During the three-month period ended December 31, 2017, we purchased approximately 29.0 million shares of common stock under the share repurchase program from all sources at a cost of approximately $3.0 billion, excluding commissions. As of December 31, 2017, we had a remaining purchase authorization of approximately $822 million. During the period covered by this report, we did not sell any of our equity shares that were not registered under the Securities Act of 1933, as amended.

ITEM 6. SELECTED FINANCIAL DATA

The following Selected Consolidated Financial Data should be read in conjunction with our Consolidated Financial Statements and the related Notes thereto, Management's Discussion and Analysis of Financial Condition and Results of Operations and other financial information included in this Annual Report on Form 10-K. The data set forth below with respect to our Consolidated Statements of Income for the years ended December 31, 2017, 2016 and 2015 and the Consolidated Balance Sheet data as of December 31, 2017 and 2016 are derived from our Consolidated Financial Statements which are included in this Annual Report on Form 10-K and are qualified by reference to such Consolidated Financial Statements and related Notes thereto. The data set forth below with respect to our Consolidated Statements of Income for the years ended December 31, 2014 and 2013 and the Consolidated Balance Sheet information as of December 31, 2015, 2014 and 2013 are derived from our Consolidated Financial Statements, which are not included in this Annual Report on Form 10-K (amounts in millions, except per share data).

	Years ended December 31,				
	2017[1]	2016	2015	2014	2013[2]
Consolidated Statements of Income:					
Total revenue	$13,003	$11,229	$9,256	$7,670	$6,494
Costs and operating expenses	8,296	8,063	7,001	5,151	4,685
Operating income	4,707	3,166	2,255	2,519	1,809
Interest and investment income, net	105	30	31	28	22
Interest (expense)	(522)	(500)	(311)	(176)	(92)
Other income (expense), net	24	(324)	48	(44)	(74)
Income before income taxes	4,314	2,372	2,023	2,327	1,665
Income tax provision	1,374	373	421	327	215
Net income	$2,940	$1,999	$1,602	$2,000	$1,450
Net income per share:					
Basic	$3.77	$2.57	$2.02	$2.49	$1.75
Diluted	$3.64	$2.49	$1.94	$2.39	$1.68
Weighted average shares:					
Basic	779.2	777.2	792.2	802.7	827.7
Diluted	808.7	803.3	824.9	836.0	860.6

	As of December 31,				
	2017	2016	2015	2014	2013
Consolidated Balance Sheets Data:					
Cash, cash equivalents and marketable securities	$12,042	$7,970	$6,552	$7,547	$5,687
Total assets[3]	30,141	28,086	26,964	17,291	13,344
Short-term borrowings and current portion of long-term debt	—	501	—	606	545
Long-term debt, net of discount[3]	15,838	13,789	14,161	6,217	4,162
Retained earnings	13,061	10,074	8,075	6,473	4,473
Total stockholders' equity	6,921	6,600	5,919	6,525	5,590

[1] The Income tax provision for fiscal 2017 includes income tax expense of approximately $1,269 million as a result of U.S. tax reform legislation, formerly known as the Tax Cuts and Jobs Act (2017 Tax Act), which was enacted on December 22, 2017. In addition, the Income tax provision also includes $290 million of excess tax benefits arising from share-based compensation awards that vested or were exercised during 2017, and are recorded in the income tax provision following the adoption of ASU 2016-09, "Compensation-Stock Compensation". See ‘Executive Summary’ and ‘Liquidity and Capital Resources’ within Item 7. Management’s Discussion and Analysis of Financial Condition and Results of Operations as well as Note 16 and Note 1 of Notes to the Consolidated Financial Statements contained in this Annual Report on Form 10-K for additional details related to the 2017 Tax Act and the adoption of ASU 2016-09, respectively.

[2] Adjusted to reflect the two-for-one common stock split effected in June 2014.

[3] Total assets and Long-term debt, net of discount have been restated as of December 31, 2015, 2014 and 2013 to reflect the retroactive reclassification of debt issuance costs in accordance with ASU 2015-03, "Simplifying the Presentation of Debt Issuance Costs."

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

Executive Summary

Celgene Corporation, together with its subsidiaries (collectively “we,” “our,” “us,” “Celgene” or the “Company”), is an integrated global biopharmaceutical company engaged primarily in the discovery, development and commercialization of innovative therapies for the treatment of cancer and inflammatory diseases through next-generation solutions in protein homeostasis, immuno-oncology, epigenetics, immunology and neuro-inflammation. Celgene Corporation was incorporated in the State of Delaware in 1986.

Our primary commercial stage products include REVLIMID®, POMALYST®/IMNOVID®, OTEZLA®, ABRAXANE®, VIDAZA®, azacitidine for injection (generic version of VIDAZA®), THALOMID® (sold as THALOMID® or Thalidomide Celgene® outside of the U.S.) and IDHIFA®. IDHIFA® was approved by the U.S. Food and Drug Administration (FDA) in August 2017 for the treatment of adult patients with relapsed or refractory acute myeloid leukemia (AML) or (R/R AML) with an isocitrate dehydrogenase-2 (IDH2) mutation as detected by an FDA approved diagnostic test. We began recognizing revenue related to IDHIFA® during the third quarter of 2017. In addition, we earn revenue from other product sales and licensing arrangements.

We continue to invest substantially in research and development in support of multiple ongoing proprietary clinical development programs which support our existing products and pipeline of new drug candidates. Our clinical trial activity includes trials across the disease areas of hematology, solid tumors, and inflammation and immunology. REVLIMID® is in several phase III trials covering a range of hematological malignancies that include multiple myeloma and lymphomas. Also, within hematological malignancies, POMALYST® is in several phase III and post-approval trials for relapsed/refractory multiple myeloma (RRMM). In solid tumors, ABRAXANE® is currently in various stages of investigation for pancreatic and non-small cell lung cancers. In inflammation and immunology, OTEZLA® is being evaluated in phase III trials for Behçet's disease and scalp psoriasis, and is continuing to be studied in ulcerative colitis (UC), psoriatic arthritis and plaque psoriasis. We also have a growing number of potential products in phase III trials across multiple diseases. In the inflammation and immunology therapeutic area, we have phase III trials underway for ozanimod in relapsing multiple sclerosis (RMS), UC and a phase III trial in Crohn's Disease (CD) that is initiating. In hematology, phase III trials are underway for CC-486 and luspatercept in myelodysplastic syndromes (MDS), for CC-486 in AML and for luspatercept in beta-thalassemia. In July 2017, Celgene Corporation entered into global strategic immuno-oncology collaboration with BeiGene, Ltd. (BeiGene) to advance a PD-1 Inhibitor (BGB-A317) program for solid tumor cancers. In collaboration with bluebird bio, bb2121, a BCMA CAR T cell therapy, has shown impressive efficacy in RRMM with a manageable safety profile. Breakthrough Therapy designation has been granted by the FDA and bb2121 has been given access to the Priority Medicines scheme by the European Medicines Agency (EMA) Committee for Medicinal Products for Human Use (CHMP). A pivotal study in RRMM was initiated in December 2017.

Beyond our phase III programs, we have access to a growing early-to-mid-stage pipeline of novel potential therapies to address significant unmet medical needs that consists of new drug candidates and cell therapies developed in-house, licensed from other companies or able to be optioned from collaboration partners. We believe that continued use of our primary commercial stage products, participation in research and development collaboration arrangements, depth of our product pipeline, potential regulatory approvals of new products and new indications for existing products will provide the catalysts for future growth.

Recent Developments

2017 Tax Act: In December 2017, the President signed U.S. tax reform legislation (2017 Tax Act), which includes a broad range of provisions, many of which significantly differ from those contained in previous U.S. tax law. Changes

in tax law are accounted for in the period of enactment. As such, the 2017 consolidated financial statements reflect the immediate tax effect of the 2017 Tax Act, which was enacted on December 22, 2017. The 2017 Tax Act contains several key provisions including, among other things:

- A one-time tax on the mandatory deemed repatriation of post-1986 untaxed foreign earnings and profits (E&P), referred to as the toll charge;
- Reduction in the Corporate tax rate from 35% to 21% for tax years beginning after December 31, 2017;
- Introduction of a new U.S. tax on certain off-shore earnings referred to as Global Intangible Low-Taxed Income (GILTI) at an effective tax rate of 10.5% for tax years beginning after December 31, 2017 (increasing to 13.125% for tax years beginning after December 31, 2025) with a partial offset by foreign tax credits; and
- Introduction of a territorial tax system beginning in 2018 by providing a 100% dividends received deduction on certain qualified dividends from foreign subsidiaries.

During the fourth quarter of 2017, we recorded an income tax expense of approximately $1,269 million, which was comprised of the following:

- An income tax expense of approximately $1,890 million for the one-time deemed repatriation of E&P. In accordance with the 2017 Tax Act, the toll charge liability may be paid over eight years. As such, we have recorded $1,732 million and $150 million in non-current and current income tax liability on an undiscounted basis, respectively, as of December 31, 2017; and
- An income tax benefit of $621 million, primarily for the remeasurement of our deferred tax assets and liabilities at the enacted tax rate of 21%.

The net charge recorded was based on currently available information and interpretations of applying the provisions of the 2017 Tax Act as of the time of filing this Annual Report on Form 10-K. In accordance with authoritative guidance issued by the Securities and Exchange Commission (SEC), the income tax effect for certain aspects of the 2017 Tax Act represent provisional amounts for which our accounting is incomplete but a reasonable estimate could be determined and recorded during the fourth quarter of 2017. Our actual results may materially differ from our current estimate due to, among other things, further guidance that may be issued by U.S. tax authorities or regulatory bodies including the SEC and the Financial Accounting Standards Board to interpret the 2017 Tax Act. We will continue to analyze the 2017 Tax Act and any additional guidance that may be issued so we can finalize the full effects of applying the new legislation on our financial statements in the measurement period. See Note 16 to Notes to the Consolidated Financial Statements contained in this Annual Report on Form 10-K for additional details related to the 2017 Tax Act.

Discontinuance of Certain GED-0301 Phase III Trials: On October 19, 2017, we announced our decision to discontinue the GED-0301 phase III REVOLVE (CD-002) trial in CD and the SUSTAIN (CD-004) extension trial (the Trials). At that time, we concluded we would record a significant impairment of our GED-0301 in-process research and development (IPR&D) asset, incur wind-down costs associated with discontinuing the Trials and certain development activities, and record a benefit related to the significant reduction of GED-0301 contingent consideration liabilities. At the date GED-0301 was acquired by Celgene, a phase II trial of GED-0301 in patients with active CD had been completed and a multi-year clinical program designed to support global registrations of GED-0301 in CD was planned, while other indications were not as advanced. As such, substantially all of the IPR&D asset and contingent consideration liabilities were attributed to the development and commercialization of GED-0301 for the treatment of CD. As a result of the discontinuance of the Trials, the Company recorded a net pre-tax charge to earnings of approximately $411 million during the fourth quarter of 2017. The net pre-tax charge was comprised of the following:

- An impairment charge relating to the entire GED-0301 IPR&D asset of approximately $1,620 million. See Note 10 of Notes to Consolidated Financial Statements contained in this Annual Report on Form 10-K for further details on the impairment of the GED-0301 IPR&D asset;
- Other one-time charges of approximately $188 million that will require cash payments primarily related to wind-down costs associated with discontinuing the Trials and certain development activities; and
- A reduction in contingent consideration liabilities of approximately $1,397 million related to GED-0301. See Note 4 of Notes to Consolidated Financial Statements contained in this Annual Report on Form 10-K for further details on contingent consideration liabilities.

The following tables present significant developments in our pivotal and phase III clinical trials and regulatory approval requests that occurred during the three-month period ended December 31, 2017, as well as developments that are expected to occur if the future occurrence is material and reasonably certain:

Regulatory Approval Requests in Major Markets:

Product	Disease Indication/ New Formulation	Major Market	Regulatory Agency	Action
ozanimod	Relapsing multiple sclerosis	U.S.	FDA	Q4 2017 (submitted)
OTEZLA® QD	Once-daily formulation	U.S.	FDA	Q4 2017 (submitted)

Pivotal and Phase III Trials:

Product Candidate	Trial	Disease Indication	Action
GED-0301[1]	Phase III - REVOLVE (CD-002)	Crohn's disease	Discontinued
GED-0301[1]	Phase III - SUSTAIN (CD-004)	Crohn's disease	Discontinued
bb2121	Pivotal - KarMMa™	RRMM	Initiated

[1] In October 2017, we announced that the GED-0301 (mongersen) phase III REVOLVE (CD-002) trial in Crohn's disease (CD) and the SUSTAIN (CD-004) extension trial (Trials) will discontinue. We decided to stop the Trials following an October recommendation of the Data Monitoring Committee, which assessed overall benefit/risk during a recent interim futility analysis. There were no meaningful safety imbalances identified in the interim futility analysis. In addition, at this time, the phase III DEFINE (CD-003) trial in CD will not be initiated. We are waiting to review the full dataset from the phase II trial with GED-0301 in UC to determine next steps.

Recent Transactions

Impact Biomedicines, Inc. (Impact): On January 7, 2018, we entered into a definitive agreement to acquire Impact, a privately held biotechnology company which is developing fedratinib, a highly selective JAK2 kinase inhibitor, for myelofibrosis and polycythemia vera. Under the terms of the agreement, we will make an upfront cash payment of approximately $1.1 billion. In addition, Impact Biomedicines' shareholders are eligible to receive contingent regulatory approval milestones up to $1.4 billion and contingent commercial milestones up to $4.5 billion based on cumulative sales levels of between $1.0 billion and $5.0 billion. The acquisition is subject to customary closing conditions and applicable waiting period under the Hart Scott Rodino Antitrust Improvements Act. The transaction is expected to close in the first quarter of 2018. The acquisition of Impact is not anticipated to include any significant processes and thus, for accounting purposes, we have preliminary concluded that the acquired assets will not meet the accounting definition of a business. As such, the transaction will be accounted for as a research and development asset acquisition.

Juno Therapeutics, Inc. (Juno): On January 21, 2018, we entered into a merger agreement with Juno under which we will pay $87 per share in cash, or approximately $9.0 billion net of cash and marketable securities acquired and Juno shares already owned by us (approximately 9.7% of outstanding shares), which we anticipate to be accounted for as a business combination. Juno is a publicly held biotechnology company which is developing CAR (chimeric antigen receptor) T and TCR (T cell receptor) therapeutics with a broad, novel portfolio evaluating multiple targets and cancer indications. The acquisition will also add a novel scientific platform and scalable manufacturing capabilities including JCAR017, a CD19-directed CAR T currently in a program for relapsed an/or refractory diffuse large B-Cell lymphoma. The transaction has been approved by the board of directors of Celgene and Juno. We expect to complete the transaction during the first quarter of 2018, subject to customary closing conditions and the expiration of applicable waiting period under the Hart Scott Rodino Antitrust Improvements Act. The transaction is expected to be funded through a combination of existing cash, cash equivalents, marketable securities and new debt.

Financial Update

The following table summarizes net product sales, total revenue and earnings for the years ended December 31, 2017, 2016 and 2015 (dollar amounts in millions, except per share data):

	Years Ended December 31,			% Change	
				2017	2016
	2017	2016	2015	versus 2016	versus 2015
Net product sales	$ 12,973	$ 11,185	$ 9,161	16.0 %	22.1 %
Total revenue	$ 13,003	$ 11,229	$ 9,256	15.8 %	21.3 %

Net income	$2,940	$1,999	$1,602	47.1%	24.8%
Diluted earnings per share	$3.64	$2.49	$1.94	46.2%	28.4%

Total net product sales for 2017 increased by approximately $1.8 billion, or 16.0%, to approximately $13.0 billion compared to the year ended December 31, 2016. The increase was comprised of net volume increases of approximately $1.5 billion, or 13.6%, and net price increases of $369 million, or 3.3%. The increase in volume was primarily driven by increased unit sales of REVLIMID®, POMALYST®/IMNOVID® and OTEZLA®. The price impact was primarily attributable to price increases in the U.S., which were partially offset by price decreases in Europe. Changes in foreign currency exchange rates, including the impact of foreign exchange hedging activity, unfavorably impacted net product sales by $98 million, or 0.9%.

Total net product sales for 2016 increased by approximately $2.0 billion, or 22.1%, to approximately $11.2 billion compared to 2015. The increase was comprised of net volume increases of $1.7 billion or 18.4% and net price increases of $415 million or 4.5%, offset in part by a $71 million, or 0.8% unfavorable foreign exchange impact, including the impact of foreign exchange hedging activity. The increase in volume was driven by increased unit sales of REVLIMID®, OTEZLA®, and POMALYST®/IMNOVID®, partly offset by a decrease in unit sales of THALOMID® and ABRAXANE®. The price impact was primarily attributable to price increases in the U.S. market.

Total revenue increased by approximately $1.8 billion, or 15.8%, in 2017 compared to 2016 primarily due to the continued growth in sales of REVLIMID®, POMALYST®/IMNOVID® and OTEZLA® reflecting increases of approximately $1.3 billion, or 18.7%, in the United States and $460 million, or 10.9%, in international markets.

Total revenue increased by approximately $2.0 billion, or 21.3%, in 2016 compared to 2015 primarily due to the continued growth in sales of REVLIMID®, POMALYST®/IMNOVID® and OTEZLA® reflecting increases of approximately $1.4 billion, or 25.1%, in the United States and $567 million, or 15.5%, in international markets.

In addition to the increase in total revenue discussed above, notable items impacting net income and diluted earnings per share for the years ended December 31, 2017, 2016 and 2015 are as follows (dollar amounts in millions):

	Income Statement Classification	Years ended December 31, 2017	2016	2015
IPR&D asset impairment charge related to GED-0301 (see Note 10*)	Research and development	$1,620	$ —	$ —
Clinical trial & development activity wind-down costs related to GED-0301 (see Note 4*)	Research and development	188	—	—
Collaboration arrangements (see Note 17*)	Research and development	833	927	1,529
Research and development asset acquisition expenses (see Note 2*)	Research and development	325	893	—
Litigation-related loss contingency accrual expense (see Note 18*)	Selling, general and administrative	315	199	—
Reduction in contingent consideration liabilities related to GED-0301 (see Note 4*)	Acquisition related (gains) charges and restructuring, net	(1,397)	—	—
Receptos acquisition charges	Acquisition related (gains) charges and restructuring, net	—	—	297
Investment impairment charges	Other income (expense), net	54	394	49
2017 Tax Act (see Note 16*)	Income tax provision	1,269	—	—

* References to Notes in this table are to the Notes to the Consolidated Financial Statements contained in this Annual Report on Form 10-K.

Results of Operations - Fiscal Years Ended December 31, 2017, 2016 and 2015

Net Product Sales and Other Revenue

Net product sales and other revenue for 2017, 2016 and 2015 were as follows (dollar amounts in millions):

REVLIMID®

	2017	2016	2015	Percent Change 2017 versus 2016	2016 versus 2015

U.S.	$5,426	$4,417	$3,535	22.8%	25.0%
International	2,761	2,557	2,266	8.0 %	12.8%
Worldwide	$8,187	$6,974	$5,801	17.4%	20.2%

REVLIMID® net sales increased by approximately $1.2 billion, or 17.4%, to approximately $8.2 billion for 2017 compared to 2016, primarily due to increased sales in both U.S. and international markets. U.S. sales growth increased due to both price increases and, to a lesser extent, an increase in unit sales from market penetration and treatment duration of patients using REVLIMID®. In addition, unit sales increased across all international regions, primarily in Europe and Japan, driven by increased duration of use and market share gains. International volume growth was partially offset by net price decreases.

REVLIMID® net sales increased by approximately $1.2 billion, or 20.2%, to approximately $7.0 billion in 2016 compared to 2015, primarily due to increased unit sales in both U.S. and international markets and price increases in the U.S. market. Increases in market penetration and treatment duration of patients using REVLIMID® in multiple myeloma contributed to the increase in U.S. unit sales. The growth in international markets resulted from volume increases, primarily driven by increased duration of use and market share gains. REVLIMID® launched in the U.S. and EU for Newly Diagnosed Multiple Myeloma following approval in February 2015.

POMALYST®/IMNOVID®

	2017	2016	2015	Percent Change 2017 versus 2016	Percent Change 2016 versus 2015
U.S.	$1,008	$778	$592	29.6%	31.4%
International	606	533	392	13.7%	36.0%
Worldwide	$1,614	$1,311	$984	23.1%	33.2%

POMALYST®/IMNOVID® net sales increased by $303 million, or 23.1%, to approximately $1.6 billion for 2017 compared to 2016, primarily due to increased sales in the U.S. and to a lesser extent international markets. In the U.S., sales growth increased primarily due to an increase in unit sales and, to a lesser extent, price increases. In addition, unit sales increased across all international regions, primarily in Europe. Increases in market share and treatment duration contributed to the increases in U.S. and international regions. International volume growth was partially offset by net price decreases.

POMALYST®/IMNOVID® net sales increased by $327 million, or 33.2%, to approximately $1.3 billion in 2016 compared to 2015, reflecting net sales of $778 million in the U.S. and $533 million in international markets. Increases in treatment duration contributed to the increase in U.S. and international net sales of POMALYST®/IMNOVID®. Achieving reimbursement in additional countries, notably in Japan, also contributed to the growth of POMALYST®/IMNOVID® net sales in international markets.

OTEZLA®

	2017	2016	2015	Percent Change 2017 versus 2016	Percent Change 2016 versus 2015
U.S.	$1,058	$904	$440	17.0%	105.5%
International	221	113	32	95.6%	253.1%
Worldwide	$1,279	$1,017	$472	25.8%	115.5%

OTEZLA® net sales increased by $262 million, or 25.8%, to approximately $1.3 billion for 2017 compared to 2016, primarily due to increased worldwide unit sales. Net sales in the U.S. were volume driven reflecting increased market share and expanding patient access. We anticipate a slowing in market growth, offset by continued market share expansion in the U.S. due to new managed care contracts, as well as increasing contributions from early launch countries in Europe, the launch in Japan, and launches subsequent to additional international approvals. International volume growth was partially offset by net price decreases.

OTEZLA® net sales increased by $545 million to approximately $1.0 billion in 2016 compared to 2015, reflecting net sales of $904 million in the U.S. and $113 million in international markets. As 2016 was the second full year on the market in the U.S., growth in the U.S. reflects increased market share and expanding accessibility to patients. Sales in

international markets continued to expand during 2016, with growing sales in early launch countries in Europe and additional international approvals.

ABRAXANE®

	2017	2016	2015	Percent Change 2017 versus 2016	Percent Change 2016 versus 2015
U.S.	$607	$634	$653	(4.3)%	(2.9)%
International	385	339	314	13.6 %	8.0 %
Worldwide	$992	$973	$967	2.0 %	0.6 %

ABRAXANE® net sales increased by $19 million, or 2.0%, to $992 million for 2017 compared to 2016, primarily due to increases in unit sales in international markets. The increase was partially offset by decreased unit sales in the U.S. The decrease in U.S. unit sales reflects the continuing competition in breast cancer and lung cancer indications.

ABRAXANE® net sales increased by $6 million, or 0.6% to $973 million in 2016 compared to 2015. The increase in international sales was primarily due to increased unit sales, which were partially offset by price decreases. The decrease in U.S. sales was due to volume decreases partly offset by price increases. The decrease in U.S. sales reflects the increased competition in breast cancer and lung cancer indications from new market entrants.

OTHER PRODUCT SALES

				Percent Change	
	2017	2016	2015	2017 versus 2016	2016 versus 2015
U.S.	$211	$248	$304	(14.9)%	(18.4)%
International	690	662	633	4.2 %	4.6 %
Worldwide	$901	$910	$937	(1.0)%	(2.9)%

All other product sales, which include IDHIFA®, VIDAZA®, azacitidine for injection, which is an authorized generic version of VIDAZA® (generic azacitidine for injection), THALOMID®, and ISTODAX®, decreased by $9 million in 2017 compared to 2016, primarily due to decreases in generic azacitidine for injection and THALOMID® net sales, which were partially offset by increases in net sales from the launch of IDHIFA® and VIDAZA® net sales.

All other product sales, decreased by $27 million in 2016 compared to 2015, primarily due to decreases in THALOMID® and generic azacitidine for injection net sales, which were partially offset by increases in VIDAZA® and ISTODAX® net sales.

Other Revenue: Other revenue decreased by $14 million to $30 million for 2017 compared to 2016. This decrease is primarily due to a reduction in royalty revenue from Novartis AG (Novartis) based upon its sales of both RITALIN® and FOCALIN XR®, both of which have been unfavorably impacted by generic competition in certain markets. Beginning in fiscal 2018, we are no longer entitled to receive royalties on RITALIN® and FOCALIN XR®.

Other revenue decreased by $51 million to $44 million for 2016 compared to 2015 primarily due to a $36 million decrease in royalty revenue from Novartis based upon its sales of both RITALIN® and FOCALIN XR®, both of which were unfavorably impacted by generic competition in certain markets.

Gross to Net Sales Accruals: We record gross to net sales accruals for government rebates, chargebacks and distributor service fees, sales discounts, and sales returns and allowances.

REVLIMID®, POMALYST® and THALOMID® are distributed in the United States primarily through contracted pharmacies under the REVLIMID Risk Evaluation and Mitigation Strategy (REMS), POMALYST REMS® and THALOMID REMS® programs, respectively. These are proprietary risk-management distribution programs tailored specifically to provide for the safe and appropriate distribution and use of REVLIMID®, POMALYST® and THALOMID®. Internationally, REVLIMID®, THALOMID®/Thalidomide Celgene® and IMNOVID® are distributed under mandatory risk-management distribution programs tailored to meet local authorities' specifications to provide for the product's safe and appropriate distribution and use. These programs may vary by country and, depending upon the country and the design of the risk-management program, the product may be sold through hospitals or retail pharmacies. OTEZLA®, ABRAXANE®, ISTODAX® and VIDAZA® are distributed through the more traditional pharmaceutical industry supply chain and are not subject to the same risk-management distribution programs as

REVLIMID®, POMALYST®/IMNOVID® and THALOMID®/Thalidomide Celgene®.

Government rebate accruals are based on estimated payments due to governmental agencies for purchases made by third parties under various governmental programs. U.S. Medicaid rebate accruals are generally based on historical payment data and estimates of future Medicaid beneficiary utilization applied to the Medicaid unit rebate formula established by the Center for Medicaid and Medicare Services. The Medicaid rebate percentage was increased and extended to Medicaid Managed Care Organizations in March 2010. The accrual of the rebates associated with Medicaid Managed Care Organizations is calculated based on estimated historical patient data related to Medicaid Managed Care Organizations. We also analyze actual billings received from the states to further support the accrual rates. Manufacturers of pharmaceutical products are responsible for 50% of the patient’s cost of branded prescription drugs related to the Medicare Part D Coverage Gap. In order to estimate the cost to us of this coverage gap

responsibility, we analyze data for eligible Medicare Part D patients against data for eligible Medicare Part D patients treated with our products as well as the historical invoices. This expense is recognized throughout the year as costs are incurred. In certain international markets government-sponsored programs require rebates to be paid based on program specific rules and, accordingly, the rebate accruals are determined primarily on estimated eligible sales.

Rebates or administrative fees are offered to certain wholesale customers, group purchasing organizations and end-user customers, consistent with pharmaceutical industry practices. Settlement of rebates and fees may generally occur from one to 15 months from the date of sale. We record a provision for rebates at the time of sale based on contracted rates and historical redemption rates. Assumptions used to establish the provision include level of wholesaler inventories, contract sales volumes and average contract pricing. We regularly review the information related to these estimates and adjust the provision accordingly.

Chargeback accruals are based on the differentials between product acquisition prices paid by wholesalers and lower government contract pricing paid by eligible customers covered under federally qualified programs. Distributor service fee accruals are based on contractual fees to be paid to the wholesale distributor for services provided. TRICARE is a health care program of the U.S. Department of Defense Military Health System that provides civilian health benefits for military personnel, military retirees and their dependents. TRICARE rebate accruals are included in chargeback accruals and are based on estimated Department of Defense eligible sales multiplied by the TRICARE rebate formula.

Sales discount accruals are based on payment terms extended to customers.

We base our sales returns allowance on estimated on-hand retail/hospital inventories, measured end-customer demand as reported by third-party sources, actual returns history and other factors, such as the trend experience for lots where product is still being returned or inventory centralization and rationalization initiatives conducted by major pharmacy chains, as applicable. If the historical data we use to calculate these estimates do not properly reflect future returns, then a change in the allowance would be made in the period in which such a determination is made and revenues in that period could be materially affected. Under this methodology, we track actual returns by individual production lots. Returns on closed lots, that is, lots no longer eligible for return credits, are analyzed to determine historical returns experience. Returns on open lots, that is, lots still eligible for return credits, are monitored and compared with historical return trend rates. Any changes from the historical trend rates are considered in determining the current sales return allowance. As noted above, REVLIMID®, POMALYST®/IMNOVID® and THALOMID®/Thalidomide Celgene® are distributed primarily through hospitals and contracted pharmacies, which are typically subject to tighter controls of inventory quantities within the supply channel and, thus, resulting in lower returns activity.

See Critical Accounting Estimates and Significant Accounting Policies below for further discussion of gross to net sales accruals.

Gross to net sales accruals and the balance in the related allowance accounts for the years ended December 31, 2017, 2016 and 2015 were as follows (in millions):

	Government Rebates	Chargebacks and Distributor Service Fees	Sales Discounts	Sales Returns and Allowances	Total
Balance as of December 31, 2014	$ 138	$ 94	$ 12	$ 10	$ 254
Allowances for sales during prior periods	(5)	(3)	—	1	(7)
Allowances for sales during 2015	424	542	112	15	1,093
Credits/deductions issued for prior year sales	(78)	(50)	(9)	(4)	(141)
Credits/deductions issued for sales during 2015	(254)	(441)	(103)	(5)	(803)
Balance as of December 31, 2015	$ 225	$ 142	$ 12	$ 17	$ 396
Allowances for sales during prior periods	20	(14)	—	(6)	—
Allowances for sales during 2016	668	764	153	17	1,602
Credits/deductions issued for prior year sales	(175)	(56)	(10)	(6)	(247)
Credits/deductions issued for sales during 2016	(367)	(646)	(139)	(4)	(1,156)
Balance as of December 31, 2016	$ 371	$ 190	$ 16	$ 18	$ 595
Allowances for sales during prior periods	9	(28)	—	(5)	(24)
Allowances for sales during 2017	881	1,102	193	13	2,189
Credits/deductions issued for prior year sales	(310)	(96)	(17)	(8)	(431)
Credits/deductions issued for sales during 2017	(407)	(898)	(172)	(3)	(1,480)
Balance as of December 31, 2017	$ 544	$ 270	$ 20	$ 15	$ 849

A comparison of provisions for allowances for sales within each of the four categories noted above for 2017 and 2016 follows:

2017 compared to 2016: Government rebate provisions increased by $202 million for 2017 compared to 2016, which was primarily due to a $122 million increase in the U.S. market and an $80 million increase in international government rebates. The increase in the U.S. market was primarily due to higher sales volumes and increased rebate rates, with $120 million due to an increase in Medicaid rebates (primarily in the managed care channel) and $2 million due to an increase in expense related to Medicare Part D Coverage Gap. The increase in international government rebates was primarily driven by higher sales volumes and increased rebate rates.

Chargebacks and distributor service fees provisions increased by $324 million for 2017 compared to 2016. Chargebacks increased by approximately $127 million and distributor service fees increased by approximately $197 million. The increase in chargebacks was primarily due to higher sales volumes and a greater portion of sales qualifying for chargeback rebates, including a $13 million increase related to the TRICARE program driven by higher sales volumes. The distributor service fee increase was primarily attributable to increased sales volumes and new managed care contracts effective January 1, 2017 for OTEZLA®, which accounted for $154 million of the increase, as well as a $22 million increase in commercial copayment program expense and a $14 million increase in the distributor service fee expense, both of which also were attributable to higher sales volumes.

Discount provisions increased by $40 million for 2017 compared to 2016, which was primarily due to a $37 million increase in the U.S. market and a $3 million increase in international discounts, both due to higher sales volumes. The U.S. market increase was comprised of an increase of $24 million related to REVLIMID® as well as increases related to OTEZLA® and POMALYST®.

Provisions for sales returns decreased by $3 million in 2017 compared to 2016, primarily due to a reduction in the ABRAXANE® returns reserve allowance.

A comparison of provisions for allowances for sales within each of the four categories noted above for 2016 and 2015 follows:

2016 compared to 2015: Government rebate provisions increased by $269 million in 2016 compared to 2015, primarily due to a $121 million increase in international government rebates. The increase in international government rebates was primarily driven by higher sales volumes for our primary products in Europe and increased international rebate rates, as well as an adjustment of our accrual to reflect higher rebate rates for IMNOVID® in France. The increase in the allowance for sales of IMNOVID® in France related to prior periods was $15 million and the increase for sales of IMNOVID® in the current year due to higher rebate

rates in France was $23 million. The $148 million increase in the U.S. market was primarily due to higher sales volumes and increased rebate rates, with $108 million due to an increase in Medicaid rebates (primarily in the managed care channel) and $40 million due to an increase in expense related to Medicare Part D Coverage Gap.

Chargebacks and distributor service fees provisions increased by $211 million in 2016 compared to 2015. Chargebacks increased by approximately $140 million and distributor service fees increased by approximately $71 million. The chargeback increases were primarily due to higher sales volumes, including an $11 million increase related to the TRICARE program driven by higher sales volume and increased rebate rates. The distributor service fee increase was primarily attributable to OTEZLA®, which accounted for $64 million of the increase in distributor service fees.

Discount provisions increased by $41 million in 2016 compared to 2015, primarily due to increased sales volumes. The $41 million increase consisted of a $37 million increase in the United States and a $4 million increase related to international markets. The U.S. increases included increases of $21 million for cash discounts related to REVLIMID®, $12 million related to OTEZLA® and $4 million related to POMALYST®.

Provisions for sales returns decreased by $5 million in 2016 compared to 2015, primarily due to the ABRAXANE® allowances for sales returns being $5 million higher in 2015 than in 2016 due to an increase in inventory levels held by certain distributors in 2015.

Cost of Goods Sold (excluding amortization of acquired intangible assets): Cost of goods sold and related percentages for the years ended December 31, 2017, 2016 and 2015 were as follows (dollar amounts in millions):

	2017	2016	2015
Cost of goods sold (excluding amortization of acquired intangible assets)	$461	$438	$420
Increase from prior year	$23	$18	$34
Percent increase from prior year	5.3 %	4.3 %	8.9 %
Percent of net product sales	3.6 %	3.9 %	4.6 %

Cost of goods sold (excluding amortization of acquired intangible assets) increased by $23 million to $461 million in 2017 compared to 2016. The increase was primarily due to the higher level of net product sales. As a percent of net product sales, cost of goods sold (excluding amortization of acquired intangible assets) decreased to 3.6% for 2017 compared to 3.9% for 2016, primarily due to REVLIMID®, POMALYST® and OTEZLA®, which have lower cost, making up a higher percentage of net product sales, while sales of ABRAXANE®, VIDAZA® and generic azacitidine for injection, which have higher cost, made up a lower percentage of net product sales.

Cost of goods sold (excluding amortization of acquired intangible assets) increased by $18 million to $438 million in 2016 compared to 2015. The increase was primarily due to the higher level of net product sales. As a percent of net product sales, cost of goods sold (excluding amortization of acquired intangible assets) decreased to 3.9% for 2016 compared to 4.6% for 2015, primarily due to OTEZLA® and POMALYST®, which have lower cost, making up a higher percentage of net product sales, while sales of ABRAXANE® and generic azacitidine for injection, which have higher cost, made up a lower percentage of net product sales.

Research and Development: Research and development costs are expensed as incurred and primarily include salary and benefit costs, third-party grants and fees paid to clinical research organizations, supplies, upfront and milestone payments resulting from collaboration arrangements and expenses for research and development asset acquisitions.

Research and development expenses and related percentages for the years ended December 31, 2017, 2016 and 2015 were as follows (dollar amounts in millions):

	2017	2016	2015

Research and development	$5,915	$4,470	$3,697
Increase from prior year	$1,445	$773	$1,266
Percent increase from prior year	32.3 %	20.9 %	52.1 %
Percent of total revenue	45.5 %	39.8 %	39.9 %

Research and development expenses increased by approximately $1.4 billion to approximately $5.9 billion in 2017, compared to 2016. The increase was primarily due to an IPR&D asset impairment charge of approximately $1.6 billion as well as other one-time charges of approximately $188 million related to wind-down costs and certain development activities associated with the

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discontinuation of the GED-0301 clinical trials in CD. See Note 4 of Notes to the Consolidated Financial Statements contained in this Annual Report on Form 10-K for additional details related to the discontinuation of the Trials. In addition, there was an increase of $253 million in clinical trial and drug discovery and development activity. These increases were partially offset by a decrease of $568 million of research and development asset acquisition expenses. See Note 2 of Notes to the Consolidated Financial Statements contained in this Annual Report on Form 10-K for additional details related to our acquisitions. Our research and development expenses may fluctuate from period-to-period based on the volume and timing of closing asset acquisitions and collaboration arrangements and associated obligations pursuant to such arrangements.

Research and development expenses increased by $773 million to $4.5 billion in 2016 compared to 2015. The increase was primarily due to $893 million of research and development asset acquisition expense associated with the purchases of EngMab, Acetylon, and Triphase as well as increases in activity in support of our early- to mid-stage product pipeline, partially offset by decreases in expenses related to collaboration arrangements. See Note 2 and Note 17 of Notes to Consolidated Financial Statements contained in this Annual Report on Form 10-K for additional details related to our research and development asset acquisitions and collaboration arrangements, respectively.

The following table provides a breakdown of research and development expenses (in millions):

				Increase (Decrease)	
	2017	2016	2015	2017 versus 2016	2016 versus 2015
Human pharmaceutical clinical programs	$1,334	$1,136	$1,029	$198	$107
Other pharmaceutical programs	870	824	755	46	69
Charges related to GED-0301 Trials (see Note 4*)	1,808	—	—	1,808	—
Drug discovery and development	745	690	384	55	306
Collaboration arrangements (see Note 17*)	833	927	1,529	(94)	(602)
Research and development asset acquisitions (see Note 2*)	325	893	—	(568)	893
Total	$5,915	$4,470	$3,697	$1,445	$773

* References to Notes in this table are to the Notes to Consolidated Financial Statements contained in this Annual Report on Form 10-K

We make significant investments in research and development in support of multiple ongoing proprietary clinical development programs which support both our existing products and pipeline of new drug candidates. See Item 1. "Business" for a table summarizing the current stage of development of both our commercial stage products and new drug candidates. See Note 2 and Note 17 of Notes to Consolidated Financial Statements contained in this Annual Report on Form 10-K for additional details related to certain of our acquisitions and collaboration arrangements, respectively.

We do not collect costs on a project basis or for any category of projects for the majority of costs involved in carrying out research projects. While we do perform cost calculations to facilitate our internal evaluation of individual projects, these calculations include significant estimations and allocations that are not relevant to, or included in, our external financial reporting mechanisms. As a consequence, we do not report research and development costs at the project level.

Selling, General and Administrative: Selling, general and administrative expenses primarily include salary and benefit costs for employees included in our sales, marketing, finance, legal and administrative organizations, costs related to the launch of new products or those approved for new indications, outside professional services, donations to independent non-profit patient assistance organizations in the United States and facilities costs.

Selling, general and administrative expenses and related percentages for the years ended December 31, 2017, 2016 and 2015 were as follows (dollar amounts in millions):

	2017	2016	2015
Selling, general and administrative	$2,941	$2,658	$2,305
Increase from prior year	$283	$353	$277
Percent increase from prior year	10.6 %	15.3 %	13.7 %
Percent of total revenue	22.6 %	23.7 %	24.9 %

Selling, general and administrative expenses increased by $283 million to approximately $2.9 billion for 2017 compared to 2016. The increase was primarily due to higher litigation-related loss contingency accrual expenses incurred in 2017. During 2017, we recorded a litigation-related loss contingency accrual expense of $315 million related to the Brown Action, which represented our probable and reasonably estimable risk of loss. We reached a settlement agreement with respect to the Brown Action during the third quarter of 2017. During 2016, we recorded a $199 million litigation-related loss contingency accrual expense with respect to the lawsuit filed against us by Children's Medical Center Corporation (CMCC), which represented our probable and reasonably estimable risk of loss at that time. Subsequently, we reached a settlement agreement with CMCC during the first quarter of 2017. See Note 18 of Notes to Consolidated Financial Statements contained in this Annual Report on Form 10-K for additional information related to these legal matters. Additionally, the increase was also due to an increase of $70 million in donations to independent non-profit patient assistance organizations in the U.S. and approximately a $40 million increase in selling and marketing activities.

Selling, general and administrative expenses increased by $353 million to $2.7 billion in 2016 compared to 2015. The increase was primarily due to a $199 million litigation-related loss contingency accrual expense, and approximately a $90 million increase in selling and marketing activities. See Note 18 of Notes to Consolidated Financial Statements contained in this Annual Report on Form 10-K for additional details related to the litigation-related loss contingency accrual expense.

Amortization of Acquired Intangible Assets:

	2017	2016	2015
Amortization of acquired intangible assets	$329	$459	$279
(Decrease) increase from prior year	$(130)	$180	$21
Percent increase (decrease) from prior year	(28.3)%	64.5 %	8.1 %

Amortization of intangible assets acquired as a result of business combinations is summarized below for the years ended December 31, 2017, 2016 and 2015 (in millions):

	2017	2016	2015
Avila	$10	$139	$47
Abraxis	151	152	152
Gloucester	92	92	62
Pharmion	4	4	4
Quanticel	72	72	14
Total amortization	$329	$459	$279

Amortization of acquired intangible assets decreased by $130 million to $329 million in 2017 compared to 2016. The decrease in amortization expense was primarily related to the prior year accelerated amortization expense and impairment charge to write down the technology platform asset obtained in the acquisition of Avila Therapeutics, Inc. (Avila).

Amortization of acquired intangible assets increased by $180 million to $459 million in 2016 compared to 2015. The increase in amortization expense primarily related to an $83 million impairment charge as well as $18 million of accelerated amortization expense, both related to the technology platform obtained in the Avila acquisition, amortization of the technology platform acquired in the October 2015 acquisition of Quanticel Pharmaceuticals, Inc. (Quanticel), and a reduction in the estimated useful lives of intangible assets obtained in the acquisition of Gloucester Pharmaceuticals, Inc. (Gloucester) following the grant to Fresenius Kabi USA, LLC of a non-exclusive, royalty-free sublicense to manufacture and market a generic version of romidepsin for injection as of February 1, 2018.

Acquisition Related (Gains) Charges and Restructuring, net: Acquisition related charges and restructuring, net is summarized below for the years ended December 31, 2017, 2016 and 2015 (in millions):

	2017	2016	2015
Acquisition related (gains) charges, net	$(1,350)	$22	$290
Restructuring charges, net	—	16	10
Total	$(1,350)	$38	$300
Increase (decrease) from prior year	$(1,388)	$(262)	$251

Acquisition related (gains) charges and restructuring charges, net decreased by approximately $1.4 billion in 2017 to a net gain of $1,350 million. The decrease was primarily due to an approximately $1.3 billion net gain recorded in 2017 for the reduction of the Nogra Pharma Limited (Nogra) contingent liability due to the discontinuation of the GED-0301 Trials. See Note 4 of Notes to Consolidated Financial Statements contained in this Annual Report on Form 10-K for details related to the change in fair value of the Nogra contingent consideration liability.

Acquisition related (gains) charges and restructuring, net decreased by $262 million to $38 million in 2016 compared to $300 million in 2015. The decrease was primarily due to a $297 million reduction in costs related to the acquisition of Receptos, Inc. which occurred in August 2015 and a $61 million increase in the benefit recorded for adjustments to contingent consideration issued as part of the acquisition of Avila related to adjustments made to estimates of probability and timing of future potential milestone payments payable to the former shareholders of Avila. These benefits were partly offset by a $77 million reduction in benefit recorded for fair value adjustments to our liability related to publicly traded contingent value rights (CVRs) that were issued as part of the acquisition of Abraxis BioScience, Inc. (Abraxis), an $8 million increase in expense related to our contingent liabilities for the Quanticel Pharmaceuticals, Inc. acquisition, and a $6 million increase in restructuring charges in 2016 related to our relocation of certain operations into our two Summit, NJ locations as well as costs associated with certain headcount reductions.

Interest and Investment Income, Net: Interest and investment income, net is summarized below for the years ended December 31, 2017, 2016 and 2015 (dollar amounts in millions):

	2017	2016	2015
Interest and investment income, net	$105	$30	$31
Increase (decrease) from prior year	$75	$(1)	$3
Percentage increase (decrease) from prior year	250.0%	(3.2)%	10.7%

Interest and investment income, net which includes the net income associated with our investments in available-for-sale marketable securities, increased by $75 million to $105 million in 2017 compared to 2016 primarily due to higher investment balances and higher yields compared to the prior year.

Interest and investment income, net decreased by $1 million to $30 million in 2016 compared to 2015.

Interest Expense: Interest expense is summarized below for the years ended December 31, 2017, 2016 and 2015 (dollar amounts in millions):

	2017	2016	2015
Interest expense	$522	$500	$311
Increase from prior year	$22	$189	$135
Percentage increase from prior year	4.4 %	60.8 %	76.7 %

Interest expense increased by $22 million to $522 million in 2017 compared to 2016 primarily due to interest expense associated with the issuance of $500 million of senior notes in August 2017 and $3.000 billion of senior notes in November 2017. For more information related to our debt issuances, see “Liquidity and Capital Resources” and Note 11 of Notes to Consolidated Financial Statements contained in this Annual Report on Form 10-K.

Interest expense increased by $189 million to $500 million in 2016 compared to 2015 primarily due to interest expense associated with the issuance of $8.000 billion of senior notes in August 2015.

Other Income (Expense), Net: Other income (expense), net is summarized below for the years ended December 31, 2017, 2016 and 2015 (in millions):

	2017	2016	2015
Foreign exchange gains (losses), including foreign exchange derivative instruments not designated as hedging instruments (see Note 5*)	$21	$(2)	$(12)
Fair value adjustments of forward point amounts (see Notes 1 and 5*)	—	17	23
Celgene puts sold gains (losses) (see Notes 3 and 5*)	—	8	(10)
Premium paid on equity investment (see Note 17*)	—	(6)	—
Investment impairment charges	(54)	(394)	(49)
Gain on sale of marketable equity securities	44	—	—
Gain on sale of equity investment in Flexus Biosciences, Inc.	9	7	86
Gain on sale of LifebankUSA business (see Note 2*)	—	38	—
Other gains	4	8	10
Total other income (expense), net	$24	$(324)	$48
Increase (decrease) from prior year	$348	$(372)	$92

* References to Notes in this table are to the Notes to Consolidated Financial Statements contained in this Annual Report on Form 10-K.

Income Tax Provision: The income tax provision increased by approximately $1.0 billion to approximately $1.4 billion for 2017 compared to 2016, primarily from the impact of applying the provisions of the 2017 Tax Act. The effective tax rate for 2017 was 31.8%, an increase of 16.1 percentage points from our effective tax rate of 15.7% for 2016. The increase in our effective tax rate was primarily due to a 29.4 percentage point increase related to the one-time tax effects of the 2017 Tax Act, which was enacted on December 22, 2017. This increase was partially offset by excess tax benefits from employee stock compensation deductions, for which our 2017 effective tax rate was reduced by 6.7 percentage points (see Note 1 of Notes to Consolidated Financial Statements contained in this Annual Report on Form 10-K), U.S. research and development and orphan drug tax credits, for which our 2017 effective tax rate was reduced by 1.3 percentage points, and an increase in pre-tax earnings from jurisdictions with lower statutory tax rates, all of which were partially offset by a non-recurring prior year tax benefit related to a loss on our investment in Avila. The tax benefits recognized in 2017 for U.S. research and development and orphan drug tax credits were the result of a change in estimate upon completion of a comprehensive analysis (see Note 16 of Notes to Consolidated Financial Statements contained in this Annual Report on Form 10-K).

Our effective tax rate is a function of the distribution of our pre-tax income among the many jurisdictions in which we operate. Our pre-tax income is earned and taxed in either the U.S. at a statutory tax rate of 35%, or outside the U.S. at significantly lower statutory tax rates. Our future effective tax rate is expected to be materially impacted by the 2017 Tax Act, which, among other changes, reduces the U.S. corporate tax rate from 35% to 21% and introduces a new U.S. tax on certain off-shore earnings referred to as GILTI at an effective tax rate of 10.5% for tax years beginning after December 31, 2017 (increasing to 13.125% for tax years beginning after December 31, 2025). See Note 16 of Notes to Consolidated Financial Statements contained in this Annual Report on Form 10-K for further details related to the 2017 Tax Act. Our future effective tax rate can also be materially impacted by shifts in the distribution of our pre-tax income among the jurisdictions where we operate, the timing and amount of tax benefits from employee stock compensation, payments to collaboration partners, acquisitions, divestitures, changes in tax laws, audit settlements, and many other factors which are difficult to forecast.

The income tax provision decreased by $48 million to $373 million in 2016 compared to 2015 as a result of a decrease in the effective tax rate, partially offset by an increase in income before taxes. The effective tax rate for 2016 was 15.7%. The effective tax rate for 2015 was 20.8%. The 5.1 percentage point decrease in our effective tax rate in 2016 compared to 2015 was primarily the result of tax benefits related to a loss on our investment in Avila, offset by a non-deductible pre-tax charge related to our acquisition of Acetylon and non-recurring charges to tax expense

recorded in 2015 related to both the global mix of funding sources for payments to collaboration partners, primarily the initiation of our collaborations with AstraZeneca PLC (AstraZeneca) and Juno, and an increase in the valuation allowance for certain deferred tax assets obtained in our acquisition of Receptos, Inc. (Receptos).

Liquidity and Capital Resources

The following table summarizes the components of our financial condition for the years ended December 31, 2017, 2016 and 2015 (in millions):

	2017	2016	2015	Increase (Decrease) 2017 versus 2016	Increase (Decrease) 2016 versus 2015
Financial assets:					
Cash and cash equivalents	$7,013	$6,170	$4,880	$843	$1,290
Marketable securities available-for-sale	5,029	1,800	1,672	3,229	128
Total financial assets	$12,042	$7,970	$6,552	$4,072	$1,418
Debt:					
Short-term borrowings and current portion of long-term debt	$—	$501	$—	$(501)	$501
Long-term debt, net of discount	15,838	13,789	14,161	2,049	(372)
Total debt	$15,838	$14,290	$14,161	$1,548	$129
Working capital[1]	$11,980	$7,964	$7,493	$4,016	$471

[1] Includes Cash and cash equivalents, Marketable securities available-for-sale, Accounts receivable, net of allowances, Inventory and Other current assets, less Short-term borrowings and current portion of long-term debt, Accounts payable, Accrued expenses and other current liabilities, and the current portion of Income taxes payable.

We rely primarily on positive cash flows from operating activities, proceeds from sales of available-for-sale marketable securities and borrowings in the form of long-term notes payable and short-term commercial paper to provide for our liquidity requirements. We expect continued growth in our expenditures, particularly those related to research and development, clinical trials, commercialization of new products, international expansion and capital investments. However, we anticipate that existing cash and cash equivalent balances, marketable securities available-for-sale, cash generated from operations and existing sources of and access to financing are adequate to fund our operating needs, capital expenditures, debt service requirements and our plans to purchase our stock and pursue strategic business initiatives for the foreseeable future.

Many of our operations are conducted outside the United States and significant portions of our cash, cash equivalents and short-term investments are held internationally. As of December 31, 2017, we held approximately $6.0 billion of these short-term funds in foreign tax jurisdictions. As a result of the 2017 Tax Act and the toll charge, we expect to have access to this cash with minimal to no additional U.S. tax impact. Therefore, we no longer consider these funds permanently reinvested offshore. The amount of funds held in U.S. tax jurisdictions can fluctuate due to the timing of receipts and payments in the ordinary course of business, including intercompany transactions, as well as for other reasons, such as repurchases of our common stock, internal reorganizations, business-development activities, restrictions on distributions out of foreign tax jurisdictions and debt issuances. As part of our ongoing liquidity assessments, we regularly monitor the mix of domestic and international cash flows (both inflows and outflows).

Under the 2017 Tax Act, a company's post-1986 previously untaxed foreign E&P are mandatorily deemed to be repatriated and taxed, which is also referred to as the toll charge. The toll charge is assessed regardless of whether or not a company has cash in its foreign subsidiaries and irrespective of whether the company will actually bring back its accumulated undistributed foreign earnings. However, the charge can be paid in installments over eight years. During the fourth quarter of 2017, we recorded an income tax expense of $1,890 million which represents the toll charge liability for the deemed repatriation of E&P. We have elected to pay the toll charge in installments over eight years, or through 2025. However, the toll charge liability is not discounted on our financial statements. As such, we have recorded $1,732 million and $150 million as a non-current and current income tax liability, respectively, as of December 31, 2017. In prior years, we recorded U.S. deferred tax liabilities of $317 million for certain offshore earnings that were expected to be remitted to our domestic operations. These deferred tax liabilities reduced the income tax expense recorded in the fourth quarter of 2017 for the toll charge. The remaining amounts earned overseas

were expected to be permanently reinvested outside of the United States, and therefore, no accrual for U.S. taxes was provided.

Share Repurchase Program: Since April 2009, our Board of Directors has approved an aggregate $20.5 billion common stock repurchase program of which we have approximately $822 million remaining for future repurchases as of December 31, 2017. During 2017, we used $3.9 billion for repurchases of our common stock, measured on a settlement date basis.

Components of Working Capital

Cash, Cash Equivalents and Marketable Securities Available for Sale: We invest our excess cash primarily in money market funds, repurchase agreements, time deposits, commercial paper, U.S. Treasury securities, U.S. government-sponsored agency securities, U.S. government-sponsored agency mortgage-backed securities (MBS), an ultra short income fund, global corporate debt securities, asset backed securities and ultra-short income fund investments. All liquid investments with maturities of three months or less from the date of purchase are classified as cash equivalents and all investments with maturities of greater than three months from the date of purchase are classified as marketable securities available-for-sale. See Note 6 of Notes to Consolidated Financial Statements contained in this Annual Report on Form 10-K. The $4.1 billion increase in cash, cash equivalents and marketable securities available-for-sale as of December 31, 2017 compared to 2016 was primarily due to approximately $5.2 billion of cash from operating activities and $611 million of net unrealized holding gains on marketable securities available-for-sale, which were partially offset by approximately $1.6 billion of net cash used in financing activities.

Marketable securities available-for-sale are carried at fair value, held for an unspecified period of time and are intended for use in meeting our ongoing liquidity needs. Unrealized gains and losses on available-for-sale securities, which are deemed to be temporary, are reported as a separate component of stockholders' equity, net of tax. The cost of debt securities is adjusted for amortization of premiums and accretion of discounts to maturity. The amortization, along with realized gains and losses and other than temporary impairment charges, is included in interest and investment income, net. For more information related to the fair value and valuation of our marketable securities, see Note 4 of Notes to Consolidated Financial Statements contained in this Annual Report on Form 10-K. For more information related to the accounting treatment, beginning in the first quarter of 2018, for our equity investments, see Note 1 of Notes to Consolidated Financial Statements contained in this Annual Report on Form 10-K.

Accounts Receivable, Net: Accounts receivable, net increased by $300 million to approximately $1.9 billion as of December 31, 2017 compared to December 31, 2016. Sales made outside the United States typically have payment terms that are greater than 60 days, thereby extending collection periods beyond those in the United States. We expect our accounts receivable balance to grow as our international sales continue to expand.

We continue to monitor economic conditions, including the volatility associated with international economies, the sovereign debt situation in certain European countries and associated impacts on the financial markets and our business. Our current business model in these markets is typically to sell our hematology and oncology products directly to principally government owned or controlled hospitals, which in turn directly deliver critical care to patients. Many of our products are used to treat life-threatening diseases and we believe this business model enables timely delivery and adequate supply of products. Many of the outstanding receivable balances are related to government-funded hospitals and we believe the receivable balances are ultimately collectible. Similarly, we believe that future sales to these customers will continue to be collectible.

Inventory: Inventory balances increased by $43 million to $541 million at the end of 2017 compared to 2016.

Other Current Assets: Other current assets decreased by $391 million to $388 million at the end of 2017 compared to 2016 primarily due to decreases of $347 million in the fair value of derivative instruments and $112 million in prepaid taxes, which were partially offset by $68 million of net other increases.

Commercial Paper: We have a commercial paper program (Program) under which we issue unsecured commercial paper notes (Commercial Paper) on a private placement basis, the proceeds of which are used for general corporate purposes. In April 2016, our Board of Directors authorized an increase in the maximum amount of Commercial Paper issuable to $2.0 billion. As of December 31, 2017, we had available capacity to issue up to $2.0 billion of Commercial Paper and there were no borrowings under the Program. The maturities of the Commercial Paper may vary, but may

not exceed 270 days from the date of issue. The Commercial Paper is sold under customary terms to a dealer or in the commercial paper market and is issued at a discount from par or, alternatively, is sold at par and bears varying interest rates on a fixed or floating basis. Borrowings under the Program, if any, are accounted for as short-term borrowings.

Senior Unsecured Credit Facility: We maintain a senior unsecured revolving credit facility (Credit Facility) that provides revolving credit in the aggregate amount of $2.0 billion, which was increased from $1.8 billion in April 2016. We extended the Credit Facility in April 2017 from April 17, 2021 to April 17, 2022. Amounts may be borrowed in U.S. Dollars for general corporate purposes. The Credit Facility currently serves as backup liquidity for our Commercial Paper borrowings. As of December 31, 2017, there was no outstanding borrowing against the Credit Facility.

The Credit Facility and the Revolving Credit Agreement contain affirmative and negative covenants, including certain customary financial covenants. We were in compliance with all financial covenants as of December 31, 2017.

Accounts Payable, Accrued Expenses and Other Current Liabilities: Accounts payable, accrued expenses and other current liabilities increased by $466 million to approximately $2.8 billion at the end of 2017 compared to 2016. The increase was primarily due to increases of $250 million for sales adjustment accruals, $188 million of one-time charges related to GED-0301 wind-down costs associated with discontinuing the Trials and certain development activities, $92 million for clinical trials and research and development expense accruals, $73 million for accounts payable and other accruals, $64 million for derivative accruals, $39 million related to collaboration agreement accruals and $15 million for contingent consideration accruals, which includes the net change in fair value (see Note 4 of Notes to Consolidated Financial Statements contained in this Annual Report on Form 10-K) as well as transfers from long-term liabilities. These increases were partially offset by a $199 million litigation-related loss contingency accrual recorded in 2016 (see Note 18 of Notes to Consolidated Financial Statements contained in this Annual Report on Form 10-K) and a decrease of $56 million for compensation related accruals.

Income Taxes Payable (Current and Non-Current): Income taxes payable increased by $2.1 billion to approximately $2.6 billion at the end of 2017 compared to 2016, primarily from the current provision for income taxes of $2.7 billion, partially offset by income tax payments of $0.5 billion and income tax receivables of $0.1 billion. See Note 16 of Notes to Consolidated Financial Statements contained in this Annual Report on Form 10-K for additional details related to the 2017 Tax Act.

Senior Notes: We have an aggregate of $15.850 billion principal amount of senior notes outstanding with varying maturity dates from 2019 through 2047. See Note 11 of Notes to Consolidated Financial Statements contained in this Annual Report on Form 10-K for additional details.

Cash flows from operating, investing and financing activities for the years ended December 31, 2017, 2016 and 2015 were as follows (in millions):

	2017	2016	2015	Increase (Decrease) 2017 versus 2016	Increase (Decrease) 2016 versus 2015
Net cash provided by operating activities	$5,246	$4,165	$2,785	$1,081	$1,380
Net cash used in investing activities	$(2,891)	$(1,002)	$(6,259)	$(1,889)	$5,257
Net cash (used in) provided by financing activities	$(1,584)	$(1,834)	$4,283	$250	$(6,117)

Operating Activities: Net cash provided by operating activities increased by approximately $1.1 billion to approximately $5.2 billion in 2017 compared to 2016. The increase in net cash provided by operating activities was primarily attributable to an increase in net income of $941 million in 2017 compared to 2016.

Net cash provided by operating activities increased by approximately $1.4 billion to approximately $4.2 billion in 2016 compared to 2015. The increase in net cash provided by operating activities was primarily attributable to an increase in net income of $397 million in 2016 compared to 2015, which included a $492 million net increase in adjustments to reconcile net income to net cash provided by operating activities for items such as impairment charges, derivative activities, changes in deferred income taxes and amortization expenses compared to 2015. Derivative activities during 2016 included cash receipts of $196 million related to the settlement of interest rate swap contracts that had been designated as fair value hedges of certain of our fixed rate notes. Increases in net cash provided by operating activities were also driven by a $420 million increase in change in other operating assets primarily attributable to a $298 million decrease in prepaid taxes and a $92 million increase in change in accounts payable and other operating liabilities primarily attributable to an increase of $199 million of accrued expenses related to a litigation-related loss contingency accrual as well as other balance sheet fluctuations.

Investing Activities: Net cash used in investing activities increased by approximately $1.9 billion in 2017 compared to 2016. The increase in net cash used in investing activities was primarily due to the approximately $2.5 billion of net purchases of marketable securities available-for-sale during 2017 compared to $648 million of net purchases of marketable securities available-for-sale during 2016.

Net cash used in investing activities decreased by approximately $5.3 billion in 2016 compared to 2015. The decrease in net cash used in investing activities was primarily the result of the purchases of Receptos and Quanticel in 2015 without a corresponding purchase in 2016, resulting in a cash usage of approximately $7.7 billion during 2015, partially offset by a decrease in cash provided by net purchases and sales of marketable securities available for sale. Net purchases of marketable securities available for sale during 2016 amounted to a net cash usage of $648 million during 2016 compared to net cash proceeds of approximately $1.9 billion from net sales of marketable securities available for sale during 2015.

Financing Activities: Net cash used in financing activities decreased by $250 million in 2017 compared to 2016. The decrease in net cash used in financing activities was primarily attributable to proceeds from the August 2017 and November 2017 debt issuances partially offset by principal repayments in August 2017 and debt redemptions in December 2017. In August 2017, we issued an additional $500 million principal amount of 2.250% senior notes due 2021 and received net cash proceeds of approximately $496 million. In August 2017, we repaid the 1.900% senior notes with a principal amount of $500 million upon maturity. In November 2017, we issued an additional $3.0 billion principal amount of senior notes consisting of $750 million principal amount of 2.750% due 2023, $1.0 billion principal amount of 3.450% due 2027 and $1.250 billion principal amount of 4.350% due 2047 and received net cash proceeds of approximately $3.0 billion. In December 2017, we paid approximately $1.4 billion to redeem all of the outstanding $1.0 billion aggregate principal amount of 2.125% senior notes and $400 million aggregate principal amount of 2.300% senior notes, each maturing in August 2018. See Note 11 of Notes to Consolidated Financial Statements contained in this Annual Report on Form 10-K for additional details. In addition to the debt activity, net cash used in financing activities decreased due to the approximately $3.8 billion of payments under our share repurchase program during 2017 compared to approximately $2.2 billion of payments under our share repurchase program during 2016.

Net cash used in financing activities was approximately $1.8 billion in 2016 compared to net cash provided by financing activities of approximately $4.3 billion in 2015. The approximately $6.1 billion decrease in net cash provided by financing activities was primarily attributable to the 2015 issuance of long-term debt which provided approximately $7.9 billion.

Contractual Obligations

The following table sets forth our contractual obligations as of December 31, 2017 (in millions):

	Payment Due By Period				
	Less than 1 Year	1 to 3 Years	3 to 5 Years	More than 5 Years	Total
Senior notes	$605	$3,700	$3,503	$16,857	$24,665
Operating leases	56	89	57	33	235
Other contract commitments	399	159	103	134	795
2017 Tax Act - Federal toll charge liability	150	301	301	1,130	1,882
Total	$1,210	$4,249	$3,964	$18,154	$27,577

Senior Notes: The senior note obligation amounts include future principal of $15.850 billion and interest payments for both current and non-current obligations as of December 31, 2017. See Note 11 of Notes to Consolidated Financial Statements contained in this Annual Report on Form 10-K for additional details.

Operating Leases: We lease office and research facilities under various operating lease agreements in the United States and various international markets. The non-cancelable lease terms for operating leases expire at various dates between 2018 and 2025 and include renewal options. In general, we are also required to reimburse the lessors for real estate taxes, insurance, utilities, maintenance and other operating costs associated with the leases. For more information on the major facilities that we occupy under lease arrangements refer to Part I, Item 2. "Properties" of this Annual Report on Form 10-K.

Other Contract Commitments: Other contract commitments of $795 million as of December 31, 2017 primarily included $748 million in contractual obligations related to product supply contracts. In addition, we have committed to invest an aggregate $47 million in investment funds, which are callable at any time.

2017 Tax Act: Under the 2017 Tax Act, a company's post-1986 previously untaxed foreign E&P are mandatorily deemed to be repatriated and taxed, which is also referred to as the toll charge. The toll charge is assessed regardless of whether or not a company has cash in its foreign subsidiaries and irrespective of whether the company will actually bring back its accumulated undistributed foreign earnings. However, the charge can be paid in installments over eight years. During the fourth quarter of 2017, we recorded an income tax expense of $1,890 million which represents the toll charge liability for the deemed repatriation of E&P. We have elected to pay the toll charge in installments over eight years, or through 2025. However, the toll charge liability is not discounted on our financial statements. As such, we have recorded $1,732 million and $150 million as a non-current and current income tax liability, respectively, as of December 31, 2017.

Collaboration Arrangements and Acquired Research and Development Assets: We have entered into certain research and development collaboration agreements with third parties and have acquired research and development assets from third parties with the potential for future milestone and royalty payments upon the achievement of pre-established developmental, regulatory and/or commercial targets. Our obligation to fund these efforts is contingent upon continued involvement in the programs and/or

the lack of any adverse events which could cause the discontinuance of the programs. Due to the nature of these arrangements, the future potential payments related to the attainment of specified development, regulatory approval and sales-based milestones over a period of several years are inherently uncertain, and accordingly, no amounts have been recorded for these future potential payments in our Consolidated Balance Sheets as of December 31, 2017 and 2016 contained in this Annual Report on Form 10-K. Potential milestone payments (not including potential royalty payments) total approximately $10.7 billion, including approximately $5.6 billion contingent on the achievement of various research, development and regulatory approval milestones and approximately $5.1 billion in sales-based milestones. For additional information about our acquisitions of research and development assets and collaboration arrangements, see Note 2 and Note 17, respectively, of Notes to Consolidated Financial Statements contained in this Annual Report on Form 10-K.

Uncertain Tax Positions: We are unable to predict the timing of tax settlements related to our obligations for uncertain tax positions as tax audits can involve complex issues and the resolution of those issues may span multiple years, particularly if subject to negotiation or litigation. Accordingly, we have not included obligations for uncertain tax positions in our table of contractual obligations (see Note 16 of Notes to Consolidated Financial Statements contained in this Annual Report on Form 10-K).

New Accounting Standards

For a discussion of new accounting standards please see Note 1 of Notes to Consolidated Financial Statements contained in this Annual Report on Form 10-K.

Critical Accounting Estimates and Significant Accounting Policies

A critical accounting policy is one that is both important to the portrayal of our financial condition and results of operation and requires management's most difficult, subjective or complex judgments, often as a result of the need to make estimates about the effect of matters that are inherently uncertain. While our significant accounting policies are more fully described in Note 1 of Notes to Consolidated Financial Statements included in this Annual Report on Form 10-K, we believe the following accounting estimates and policies to be critical:

Revenue Recognition: Revenue from the sale of products is recognized when title and risk of loss of the product is transferred to the customer and the sales price is fixed and determinable. Provisions for discounts, early payments, rebates, sales returns and distributor chargebacks under terms customary in the industry are provided for in the same period the related sales are recorded. We record estimated reductions to revenue for volume-based discounts and rebates at the time of the initial sale. The estimated reductions to revenue for such volume-based discounts and rebates are based on the sales terms, historical experience and trend analysis.

We recognize revenue from royalties based on licensees' sales of our products or products using our technologies. Royalties are recognized as earned in accordance with the contract terms when royalties from licensees can be reasonably estimated and collectability is reasonably assured. If royalties cannot be reasonably estimated or collectability of a royalty amount is not reasonably assured, royalties are recognized as revenue when the cash is received.

Gross to Net Sales Accruals: We record gross to net sales accruals for sales returns and allowances, sales discounts, government rebates, chargebacks and distributor service fees.

REVLIMID®, POMALYST® and THALOMID® are distributed in the United States primarily through contracted pharmacies under the REVLIMID REMS®, POMALYST REMS® and THALOMID REMS® programs, respectively. These are proprietary risk-management distribution programs tailored specifically to provide for the safe and

appropriate distribution and use of REVLIMID®, POMALYST® and THALOMID®. Internationally, REVLIMID®, THALOMID®/Thalidomide Celgene® and IMNOVID® are distributed under mandatory risk-management distribution programs tailored to meet local authorities' specifications to provide for the product's safe and appropriate distribution and use. These programs may vary by country and, depending upon the country and the design of the risk-management program, the product may be sold through hospitals or retail pharmacies. OTEZLA®, ABRAXANE®, ISTODAX®, VIDAZA® and IDHIFA® are distributed through the more traditional pharmaceutical industry supply chain and are not subject to the same risk-management distribution programs as REVLIMID®, POMALYST®/IMNOVID® and THALOMID®/Thalidomide Celgene®.

Government rebate accruals are based on estimated payments due to governmental agencies for purchases made by third parties under various governmental programs. U.S. Medicaid rebate accruals are generally based on historical payment data and estimates of future Medicaid beneficiary utilization applied to the Medicaid unit rebate formula established by the Center for Medicaid and Medicare Services. The Medicaid rebate percentage was increased and extended to Medicaid Managed Care Organizations in March 2010. The accrual of the rebates associated with Medicaid Managed Care Organizations is calculated based on estimated

historical patient data related to Medicaid Managed Care Organizations. We also analyze actual billings received from the states to further support the accrual rates. Manufacturers of pharmaceutical products are responsible for 50% of the patient’s cost of branded prescription drugs related to the Medicare Part D Coverage Gap. In order to estimate the cost to us of this coverage gap responsibility, we analyze data for eligible Medicare Part D patients against data for eligible Medicare Part D patients treated with our products as well as the historical invoices. This expense is recognized throughout the year as costs are incurred. In certain international markets government-sponsored programs require rebates to be paid based on program specific rules and, accordingly, the rebate accruals are determined primarily on estimated eligible sales.

Rebates or administrative fees are offered to certain wholesale customers, group purchasing organizations and end-user customers, consistent with pharmaceutical industry practices. Settlement of rebates and fees may generally occur from one to 15 months from the date of sale. We record a provision for rebates at the time of sale based on contracted rates and historical redemption rates. Assumptions used to establish the provision include level of wholesaler inventories, contract sales volumes and average contract pricing. We regularly review the information related to these estimates and adjust the provision accordingly.

Chargeback accruals are based on the differentials between product acquisition prices paid by wholesalers and lower government contract pricing paid by eligible customers covered under federally qualified programs. Distributor service fee accruals are based on contractual fees to be paid to the wholesale distributor for services provided. TRICARE is a health care program of the U.S. Department of Defense Military Health System that provides civilian health benefits for military personnel, military retirees and their dependents. TRICARE rebate accruals are included in chargeback accruals and are based on estimated Department of Defense eligible sales multiplied by the TRICARE rebate formula.

Sales discount accruals are based on payment terms extended to customers.

We base our sales returns allowance on estimated on-hand retail/hospital inventories, measured end-customer demand as reported by third-party sources, actual returns history and other factors, such as the trend experience for lots where product is still being returned or inventory centralization and rationalization initiatives conducted by major pharmacy chains, as applicable. If the historical data we use to calculate these estimates do not properly reflect future returns, then a change in the allowance would be made in the period in which such a determination is made and revenues in that period could be materially affected. Under this methodology, we track actual returns by individual production lots. Returns on closed lots, that is, lots no longer eligible for return credits, are analyzed to determine historical returns experience. Returns on open lots, that is, lots still eligible for return credits, are monitored and compared with historical return trend rates. Any changes from the historical trend rates are considered in determining the current sales return allowance. As noted above, REVLIMID®, POMALYST®/IMNOVID® and THALOMID®/Thalidomide Celgene® are distributed primarily through hospitals and contracted pharmacies, which are typically subject to tighter controls of inventory quantities within the supply channel and, thus, resulting in lower returns activity.

Allowance for Doubtful Accounts: We estimate an allowance for doubtful accounts primarily based on the credit worthiness of our customers, historical payment patterns, aging of receivable balances and general economic conditions, including publicly available information on the credit worthiness of countries themselves and provinces or areas within such countries where they are the ultimate customers.

Income Taxes: We utilize the asset and liability method of accounting for income taxes. Under this method, deferred tax assets and liabilities are determined based on the difference between the financial statement carrying amounts and tax bases of assets and liabilities using enacted tax rates in effect for years in which the temporary differences are expected to reverse. We provide a valuation allowance when it is more likely than not that some portion or all of a deferred tax asset will not be realized.

We account for interest and penalties related to uncertain tax positions as part of our provision for income taxes. These unrecognized tax benefits relate primarily to issues common among multinational corporations in our industry. We apply a variety of methodologies in making these estimates which include studies performed by independent economists, advice from industry and subject experts, evaluation of public actions taken by the U.S. Internal Revenue Service and other taxing authorities, as well as our own industry experience. We provide estimates for unrecognized tax benefits. If our estimates are not representative of actual outcomes, our results of operations could be materially impacted.

We periodically evaluate the likelihood of the realization of deferred tax assets, and reduce the carrying amount of these deferred tax assets by a valuation allowance to the extent we believe a portion will not be realized. We consider many factors when assessing the likelihood of future realization of deferred tax assets, including our recent cumulative earnings experience by taxing jurisdiction, expectations of future taxable income, carryforward periods available to us for tax reporting purposes, various income tax strategies and other relevant factors. Significant judgment is required in making this assessment and, to the extent future expectations change, we would have to assess the recoverability of our deferred tax assets at that time. As of December 31, 2017, it was more likely than not that we would realize our deferred tax assets, net of valuation allowances.

Share-Based Compensation: We utilize share based compensation in the form of stock options, restricted stock units, or RSUs, and performance-based restricted stock units, or PSUs. Compensation expense is recognized in the Consolidated Statements of Income based on the estimated fair value of the awards at grant date. Compensation expense recognized reflects an estimate of the number of awards expected to vest after taking into consideration an estimate of award forfeitures based on actual experience and is recognized on a straight-line basis over the requisite service period, which is generally the vesting period required to obtain full vesting. Management expectations related to the achievement of performance goals associated with PSU grants is assessed regularly and that assessment is used to determine whether PSU grants are expected to vest. If performance-based milestones related to PSU grants are not met or not expected to be met, any compensation expense recognized to date associated with grants that are not expected to vest will be reversed.

Other-Than-Temporary Impairments of Available-For-Sale Marketable Securities: A decline in the market value of any available-for-sale marketable security below its cost that is deemed to be other-than-temporary results in a reduction in carrying amount to fair value. The impairment is charged to operations and a new cost basis for the security established. The determination of whether an available-for-sale marketable security is other-than-temporarily impaired requires significant judgment and requires consideration of available quantitative and qualitative evidence in evaluating the potential impairment. Factors evaluated to determine whether the investment is other-than-temporarily impaired include: significant deterioration in the issuer's earnings performance, credit rating, asset quality, business prospects of the issuer, adverse changes in the general market conditions in which the issuer operates, length of time that the fair value has been below our cost, our expected future cash flows from the security, our intent not to sell, an evaluation as to whether it is more likely than not that we will not have to sell before recovery of our cost basis, and issues that raise concerns about the issuer's ability to continue as a going concern. Assumptions associated with these factors are subject to future market and economic conditions, which could differ from our assessment.

Derivatives and Hedging Activities: All derivative instruments are recognized on the balance sheet at their fair value. Changes in the fair value of derivative instruments are recorded each period in current earnings or other comprehensive income (loss), depending on whether a derivative instrument is designated as part of a hedging transaction and, if it is, the type of hedging transaction. For a derivative to qualify as a hedge at inception and throughout the hedged period, we formally document the nature and relationships
between the hedging instruments and hedged item. We assess, both at inception and on an on-going basis, whether derivative instruments are highly effective in offsetting the changes in the fair value or cash flows of hedged items. If we determine that a forecasted transaction is no longer probable of occurring, we discontinue hedge accounting and any related unrealized gain or loss on the derivative instrument is recognized in Other income (expense), net in our Consolidated Statements of Income. We use derivative instruments, including those not designated as part of a hedging transaction, to manage our exposure to movements in foreign exchange, our stock price and interest rates. The use of these derivative instruments modifies the exposure of these risks with the intent to reduce our risk or cost.

Prior to the adoption of Accounting Standards Update No. 2017-12, "Derivatives and Hedging" (ASU 2017-12), we were required to separately measure and reflect the amount by which the hedging instrument did not offset the changes in the fair value or cash flows of hedged items, which was referred to as the ineffective amount. We assessed hedge effectiveness on a quarterly basis and recorded the gain or loss related to the ineffective portion of derivative instruments, if any, in Other income (expense), net in the Consolidated Statements of Income. Pursuant to the provisions of ASU 2017-12, we are no longer required to separately measure and recognize hedge ineffectiveness. Upon adoption of ASU 2017-12, we no longer recognize hedge ineffectiveness in our Consolidated Statements of Income, but we instead recognize the entire change in the fair value of:

- cash flow hedges included in the assessment of hedge effectiveness in Other comprehensive income (loss). The amounts recorded in Other comprehensive income (loss) will subsequently be reclassified to earnings in the same line item in the Consolidated Statements of Income as impacted by the hedged item when the hedged item affects

earnings; and

- fair value hedges included in the assessment of hedge effectiveness in the same line item in the Consolidated Statements of Income that is used to present the earnings effect of the hedged item.

Prior to the adoption of ASU 2017-12, we excluded option premiums and forward points (excluded components) from our assessment of hedge effectiveness for our foreign exchange cash flow hedges. We recognized all changes in fair value of the excluded components in Other income (expense), net in the Consolidated Statements of Income. The amendments in ASU 2017-12 continue to allow those components to be excluded from the assessment of hedge effectiveness, which we have elected to continue to apply. Pursuant to the provisions of ASU 2017-12, we no longer recognize changes in the fair value of the excluded components in Other income (expense), net, but we instead recognize the initial value of the excluded component on a straight-line basis over the life of the derivative instrument, within the same line item in the Consolidated Statements of Income that is used to present the earnings effect of the hedged item.

Investments in Other Entities: We hold a portfolio of investments in equity securities and certain investment funds that are accounted for under either the equity method or cost method. Investments in companies or certain investment funds over which we have significant influence but not a controlling interest are accounted for using the equity method, with our share of earnings or losses reported in Other income (expense), net. Investments in equity securities of companies that become publicly traded and are not classified as equity method investments are accounted for as available-for-sale marketable securities prospectively from the date of such companies' initial public offering.

Our cost method and equity method investments are included in other assets on the Consolidated Balance Sheets.

All investments are reviewed on a regular basis for possible impairment. If an investment's fair value is determined to be less than its net carrying value and the decline is determined to be other-than-temporary, the investment is written down to its fair value. Such an evaluation is judgmental and dependent on specific facts and circumstances. Factors considered in determining whether an other-than-temporary decline in value has occurred include: market value or exit price of the investment based on either market-quoted prices or future rounds of financing by the investee; length of time that the market value was below its cost basis; financial condition and business prospects of the investee; our intent and ability to retain the investment for a sufficient period of time to allow for recovery in market value of the investment; issues that raise concerns about the investee's ability to continue as a going concern; any other information that we may be aware of related to the investment.

Accounting for Long-Term Incentive Plans: We have established a Long-Term Incentive Plan, or LTIP, designed to provide key officers and executives with performance-based incentive opportunities contingent upon achievement of pre-established corporate performance objectives covering a three-year period. As of December 31, 2017, we had recorded liabilities for three separate three-year performance cycles running concurrently and ending December 31, 2017, 2018 and 2019. Performance measures for each of the performance cycles are based on the following components: 37.5% on non-GAAP earnings per share (as defined in the LTIP); 37.5% on total non-GAAP revenue (as defined in the LTIP); and 25% on relative total shareholder return, which is a measurement of our stock price performance during the applicable three-year period compared with a group of other companies in the biopharmaceutical industry.

Threshold, target and maximum cash payout levels are calculated as a percentage between 0% to 200% of each participant’s base salary at the time the LTIP was approved by the Compensation Committee. Such awards are payable in cash or common stock or a mixture of cash and common stock, which will be determined by the Compensation Committee at the time of award delivery. Share-based payout levels are calculated using the cash-based threshold, target and maximum levels, divided by the average closing price of Celgene stock for the 30 trading days prior to the commencement of each performance cycle. Therefore, final share-based award values are reflective of the stock price at the end of the measurement period. The Compensation Committee may determine that payments made in common stock are restricted from trading for a period of time. We accrue the long-term incentive liability over each three-year cycle. Prior to the end of a three-year cycle, the accrual is based on an estimate of our level of achievement during the cycle. Upon a change in control, participants will be entitled to an immediate payment equal to their target award or, if higher, an award based on actual performance through the date of the change in control.

Accruals recorded for the LTIP entail making certain assumptions concerning future non-GAAP earnings per share, non-GAAP revenues and relative total shareholder return, as defined; the actual results of which could be materially different than the assumptions used. Accruals for the LTIP are reviewed on a regular basis and revised accordingly so that the liability recorded reflects updated estimates of future payouts. In estimating the accruals, management considers actual results to date for the performance period, expected results for the remainder of the performance period, operating trends, product development, pricing and competition.

Valuation of Goodwill, Acquired Intangible Assets, Other Assets and IPR&D: We have recorded goodwill, acquired intangible assets and IPR&D through acquisitions accounted for as business combinations. When identifiable intangible assets, including IPR&D and technology platforms are acquired, we determine the fair values of these assets as of the acquisition date. Discounted cash flow models are typically used in these valuations if quoted market prices are not available, and the models require the use of significant estimates and assumptions including but not limited to:

- projecting regulatory approvals;
- estimating future cash flows from product sales resulting from completed products and in-process projects or estimating future cash flows expected to be collected; and
- developing appropriate discount rates and probability rates.

Goodwill represents the excess of purchase price over fair value of net assets acquired in a business combination accounted for by the acquisition method of accounting and is not amortized, but is subject to impairment testing. We test our goodwill for impairment at least annually or when a triggering event occurs that could indicate a potential impairment by assessing qualitative

factors or performing a quantitative analysis in determining whether it is more likely than not that the fair value of net assets are below their carrying amounts.

Intangible assets with definite useful lives are amortized to their estimated residual values over their estimated useful lives and reviewed for impairment if certain events occur. Intangible assets related to IPR&D product rights are treated as indefinite-lived intangible assets and not amortized until the product is approved for sale by regulatory authorities in specified markets. At that time, we will determine the useful life of the asset, reclassify the asset out of IPR&D and begin amortization. Impairment testing is also performed at least annually or when a triggering event occurs that could indicate a potential impairment. Such test entails completing an updated discounted cash flow model to estimate the fair value of the IPR&D asset. If required, the impairment test for intangible assets with definite useful lives is completed by comparing an updated non-discounted cash flow model to the book value of the intangible asset.

Valuation of Contingent Consideration Resulting from a Business Combination: We record contingent consideration resulting from a business combination at its fair value on the acquisition date, and for each subsequent reporting period revalue these obligations and record increases or decreases in their fair value as an adjustment to operating earnings in the Consolidated Statements of Income. Changes to contingent consideration obligations can result from movements in publicly traded share prices of CVRs, adjustments to discount rates and periods, updates in the assumed achievement or timing of any development milestones or changes in the probability of certain clinical events and changes in the assumed probability associated with regulatory approval. The assumptions related to determining the value of a contingent consideration include a significant amount of judgment and any changes in the assumptions could have a material impact on the amount of contingent consideration expense recorded in any given period. Our contingent consideration liabilities were recorded in the acquisitions of Gloucester, Abraxis, Avila, Nogra, and Quanticel. The fair values of the Gloucester, Avila, Nogra, and Quanticel contingent consideration liabilities are based on the discount rate, probability and estimated timing of cash milestone payments to the former shareholders of each business. The fair value of the Abraxis contingent consideration liability is based on the quoted market price of the publicly traded CVRs.

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

The following discussion provides forward-looking quantitative and qualitative information about our potential exposure to market risk. Market risk represents the potential loss arising from adverse changes in the value of financial instruments. The risk of loss is assessed based on the likelihood of adverse changes in fair values, cash flows or future earnings.

We have established guidelines relative to the diversification and maturities of investments to maintain safety and liquidity. These guidelines are reviewed periodically and may be modified depending on market conditions. Although investments may be subject to credit risk, our investment policy specifies credit quality standards for our investments and limits the amount of credit exposure from any single issue, issuer or type of investment. As of December 31, 2017, our market risk sensitive instruments consisted of marketable securities available-for-sale, our long-term debt and certain derivative contracts.

Marketable Securities Available-for-Sale: As of December 31, 2017, our marketable securities available-for-sale consisted of U.S. Treasury securities, U.S. government-sponsored agency securities, U.S. government-sponsored agency mortgage-backed (MBS) securities, global corporate debt securities, asset backed securities, ultra short income-fund securities, time deposits and repurchase agreements with original maturities of greater than three months and marketable equity securities. U.S. Treasury securities include government debt instruments issued by the U.S. Department of the Treasury. U.S. government-sponsored agency securities include general unsecured obligations either issued directly by or guaranteed by U.S. government sponsored enterprises. U.S. government-sponsored agency MBS include mortgage-backed securities issued by the Federal National Mortgage Association, the Federal Home Loan Mortgage Corporation and the Government National Mortgage Association. Corporate debt-global includes

obligations issued by investment-grade corporations, including some issues that have been guaranteed by governments and government agencies. Asset backed securities consist of triple-A rated securities with cash flows collateralized by credit card receivables and auto loans. Ultra short income fund includes investments in certificates of deposit, repurchase agreements, commercial paper and corporate notes. Our time deposits and repurchase agreements have original maturities greater than three months. Our repurchase agreements are collateralized by U.S. government securities, cash, bonds, commercial paper and bank certificates of deposit.

Our marketable securities available-for-sale are primarily equity investments in the publicly traded common stock of companies, including common stock of companies with whom we have entered into collaboration arrangements. In addition, we invest in debt securities that are carried at fair value, held for an unspecified period of time and are intended for use in meeting our ongoing liquidity needs. Unrealized gains and losses on available-for-sale securities, which are deemed to be temporary, are reported as a separate component of stockholders' equity, net of tax. The cost of debt securities is adjusted for amortization of premiums and accretion of discounts to maturity. The amortization, along with realized gains and losses and other than temporary impairment charges related to debt securities, is included in Interest and investment income, net on the Consolidated Statements of Income.

Realized gains and losses and other than temporary impairment charges related to equity securities are included in Other income (expense), net on the Consolidated Statements of Income.

As of December 31, 2017, the principal amounts, fair values and related weighted-average interest rates of our investments in debt securities classified as marketable securities available-for-sale were as follows (dollar amounts in millions):

	Duration			
	Less than 1 Year	1 to 3 Years	3 to 5 Years	Total
Principal amount	$1,867	$1,237	$28	$3,132
Fair value	$1,868	$1,233	$29	$3,130
Weighted average interest rate	1.5 %	2.1 %	2.7 %	1.7 %

Debt Obligations

Short-Term Borrowings and Current Portion of Long-Term Debt: We had no outstanding short-term borrowing as of December 31, 2017 or December 31, 2016. The carrying value of the current portion of long-term debt outstanding as of December 31, 2017 and December 31, 2016 includes (in millions):

	2017	2016
1.900% senior notes due 2017	$ —	$501
Total short-term debt	$ —	$501

Long-Term Debt: Our outstanding senior notes with maturity dates in excess of one year after December 31, 2017 have an aggregate principal amount of $15.850 billion with varying maturity dates and interest rates. The principal amounts and carrying values of these senior notes as of December 31, 2017 are summarized below (in millions):

	Principal Amount	Carrying Value
2.250% senior notes due 2019	$500	$505
2.875% senior notes due 2020	1,500	1,495
3.950% senior notes due 2020	500	514
2.250% senior notes due 2021	500	497
3.250% senior notes due 2022	1,000	1,044
3.550% senior notes due 2022	1,000	994
2.750% senior notes due 2023	750	746
4.000% senior notes due 2023	700	737
3.625% senior notes due 2024	1,000	1,001
3.875% senior notes due 2025	2,500	2,478
3.450% senior notes due 2027	1,000	991
5.700% senior notes due 2040	250	247
5.250% senior notes due 2043	400	393
4.625% senior notes due 2044	1,000	987
5.000% senior notes due 2045	2,000	1,975
4.350% senior notes due 2047	1,250	1,234
Total long-term debt	$15,850	$15,838

As of December 31, 2017, the fair value of our senior notes outstanding was $16.573 billion.

MARKET RISK MANAGEMENT

Our revenue and earnings, cash flows and fair values of assets and liabilities can be impacted by fluctuations in foreign exchange rates and interest rates. We actively manage the impact of foreign exchange rate and interest rate movements through operational means and through the use of various financial instruments, including derivative instruments such as foreign currency option

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contracts, foreign currency forward contracts, treasury rate lock agreements and interest rate swap contracts. In instances where these financial instruments are accounted for as cash flow hedges or fair value hedges we may from time to time terminate the hedging relationship. If a hedging relationship is terminated, we generally either settle the instrument or enter into an offsetting instrument.

Foreign Currency Risk Management

We maintain a foreign exchange exposure management program to mitigate the impact of volatility in foreign exchange rates on future foreign currency cash flows, translation of foreign earnings and changes in the fair value of assets and liabilities denominated in foreign currencies.

Through our revenue hedging program, we endeavor to reduce the impact of possible unfavorable changes in foreign exchange rates on our future U.S. Dollar cash flows that are derived from foreign currency denominated sales. To achieve this objective, we hedge a portion of our forecasted foreign currency denominated sales that are expected to occur in the foreseeable future, typically within the next three years, with a maximum of five years. We manage our anticipated transaction exposure principally with foreign currency forward contracts, a combination of foreign currency put and call options, and occasionally purchased foreign currency put options.

Foreign Currency Forward Contracts: We use foreign currency forward contracts to hedge specific forecasted transactions denominated in foreign currencies, manage exchange rate volatility in the translation of foreign earnings, and reduce exposures to foreign currency fluctuations of certain assets and liabilities denominated in foreign currencies.

We manage a portfolio of foreign currency forward contracts to protect against changes in anticipated foreign currency cash flows resulting from changes in foreign currency exchange rates, primarily associated with non-functional currency denominated revenues and expenses of foreign subsidiaries. The foreign currency forward hedging contracts outstanding as of December 31, 2017 and December 31, 2016 had settlement dates within 20 months and 31 months, respectively. The spot rate components of these foreign currency forward contracts are designated as cash flow hedges and any unrealized gains or losses are reported in other comprehensive income (OCI) and reclassified to the Consolidated Statement of Income in the same periods during which the underlying hedged transactions affect earnings. If a hedging relationship is terminated with respect to a foreign currency forward contract, accumulated gains or losses associated with the contract remain in OCI until the hedged forecasted transaction occurs and are reclassified to operations in the same periods during which the underlying hedged transactions affect earnings. Prior to the adoption of ASU 2017-12, the forward point components of these foreign currency forward contracts were excluded from assessing effectiveness of the hedging relationship and all fair value adjustments of forward point amounts were recorded on the Consolidated Statements of Income in Other income (expense), net. Upon adoption of ASU 2017-12, we recognize in earnings the initial value of the forward point components on a straight-line basis over the life of the derivative instrument within the same line item in the Consolidated Statements of Income that is used to present the earnings effect of the hedged item. See Note 1 of Notes to Consolidated Financial Statements contained in this Annual Report on Form 10-K for additional information related to the adoption of ASU 2017-12.

Foreign currency forward contracts entered into to hedge forecasted revenue and expenses were as follows as of December 31, 2017 and December 31, 2016 (in millions):

	Notional Amount	
Foreign Currency:	2017	2016
Australian Dollar	$61	$49
British Pound	97	199

Canadian Dollar	227	193
Euro	954	1,812
Japanese Yen	356	597
Total	$1,695	$2,850

We consider the impact of our own and the counterparties' credit risk on the fair value of the contracts as well as the ability of each party to execute its obligations under the contract on an ongoing basis. As of December 31, 2017, credit risk did not materially change the fair value of our foreign currency forward contracts.

We also manage a portfolio of foreign currency contracts to reduce exposures to foreign currency fluctuations of certain recognized assets and liabilities denominated in foreign currencies and, from time to time, we enter into foreign currency contracts to manage exposure related to translation of foreign earnings. These foreign currency forward contracts have not been designated as hedges and, accordingly, any changes in their fair value are recognized on the Consolidated Statements of Income in Other income (expense), net in the current period. The aggregate notional amount of the foreign currency forward non-designated hedging contracts outstanding as of December 31, 2017 and December 31, 2016 were $885 million and $934 million, respectively.

Although not predictive in nature, we believe a hypothetical 10% threshold reflects a reasonably possible near-term change in foreign currency rates. Assuming that the December 31, 2017 exchange rates were to change by a hypothetical 10%, the fair value of the foreign currency forward contracts would change by approximately $260 million. However, since the contracts either hedge specific forecasted intercompany transactions denominated in foreign currencies or relate to assets and liabilities denominated in currencies other than the entities' functional currencies, any change in the fair value of the contract would be either reported in OCI and reclassified to earnings in the same periods during which the underlying hedged transactions affect earnings or re-measured through earnings each period along with the underlying asset or liability.

Foreign Currency Option Contracts: From time to time, we may hedge a portion of our future foreign currency exposure by utilizing a strategy that involves both a purchased local currency put option and a written local currency call option that are accounted for as hedges of future sales denominated in that local currency. Specifically, we sell (or write) a local currency call option and purchase a local currency put option with the same expiration dates and local currency notional amounts but with different strike prices. This combination of transactions is generally referred to as a “collar.” The expiration dates and notional amounts correspond to the amount and timing of forecasted foreign currency sales. The foreign currency option contracts outstanding as of December 31, 2017 and December 31, 2016 had settlement dates within 36 months and 48 months, respectively. If the U.S. Dollar weakens relative to the currency of the hedged anticipated sales, the purchased put option value reduces to zero and we benefit from the increase in the U.S. Dollar equivalent value of our anticipated foreign currency cash flows; however, this benefit would be capped at the strike level of the written call, which forms the upper end of the collar. The premium collected from the sale of the call option is equal to the premium paid for the purchased put option, resulting in a net zero cost for each collar. Outstanding foreign currency option contracts entered into to hedge forecasted revenue were as follows as of December 31, 2017 and December 31, 2016:

	Notional Amount[1]	
	2017	2016
Foreign currency option contracts designated as hedging activity:		
Purchased Put	$3,319	$1,790
Written Call	$3,739	$2,009

[1] U.S. dollar notional amounts are calculated as the hedged local currency amount multiplied by the strike value of the foreign currency option. The local currency notional amounts of our purchased put and written call that are designated as hedging activities are equal to each other.

We also have entered into foreign currency put option contracts to hedge forecasted revenue which were not part of a collar strategy. Such put option contracts had a notional value of $258 million and $387 million as of December 31, 2017 and December 31, 2016, respectively, and settlement dates within 12 months and 24 months, respectively. Assuming that the December 31, 2017 exchange rates were to change by a hypothetical 10%, the fair value of the foreign currency option contracts would increase by approximately $228 million if the U.S. Dollar were to strengthen and decrease by approximately $270 million if the U.S. Dollar were to weaken. However, since the contracts hedge specific forecasted intercompany transactions denominated in foreign currencies, any change in the fair value of the contract would be reported in other comprehensive income and reclassified to earnings in the same periods during which the underlying hedged transactions affect earnings.

Interest Rate Risk Management

Forward Starting Interest Rate Swaps and Treasury Rate Locks: In anticipation of issuing fixed-rate debt, we may use forward starting interest rate swaps (forward starting swaps) or treasury rate lock agreements (treasury rate locks) that are designated as cash flow hedges to hedge against changes in interest rates that could impact expected future issuances of debt. To the extent these hedges of cash flows related to anticipated debt are effective, any realized or unrealized gains or losses on the forward starting swaps or treasury rate locks are reported in OCI and are recognized in income over the life of the anticipated fixed-rate notes.

We have entered into swap contracts that were designated as hedges of certain of our fixed rate notes in 2017 and 2016 and also terminated the hedging relationship by settling certain of those swap contracts during 2017. During 2017, we settled $500 million notional amount of certain swap contracts, and then subsequently entered into new $500 million notional amount swap contracts.

We terminated the hedging relationship on those certain outstanding swap contracts amounting to $500 million notional amount by settling such swap contracts. The net settlement and termination of those swap contracts resulted in a net loss of approximately $4 million. See Note 11 for additional details related to reductions of current and future interest expense. Additionally, we re-designated $500 million 10-year notional amount forward starting swaps to certain of our 30-year outstanding fixed rate notes, resulting in a gain of approximately $29 million. In addition, in 2017, we entered into and then subsequently settled, $500 million notional treasury locks on 30-year debt, resulting in a loss of approximately $2 million.

We had outstanding forward starting swaps with effective dates in 2017 and 2018 and maturing in ten years that were designated as cash flow hedges with notional amounts as shown in the table below:

	Notional Amount	
	December 31, 2017	December 31, 2016
Forward starting interest rate swap contracts:		
Forward starting swaps with effective dates in 2017	$ —	$ 500
Forward starting swaps with effective dates in 2018	—	500

Interest Rate Swap Contracts: From time to time we hedge the fair value of certain debt obligations through the use of interest rate swap contracts. The interest rate swap contracts are designated hedges of the fair value changes in the notes attributable to changes in benchmark interest rates. Gains or losses resulting from changes in fair value of the underlying debt attributable to the hedged benchmark interest rate risk are recorded on the Consolidated Statement of Income within Interest (expense) with an associated offset to the carrying value of the notes recorded on the Consolidated Balance Sheet. Since the specific terms and notional amount of the swap are intended to match those of the debt being hedged all changes in fair value of the swap are recorded on the Consolidated Statement of Income within Interest (expense) with an associated offset to the derivative asset or liability on the Consolidated Balance Sheet. Consequently, there is no net impact recorded in income. Any net interest payments made or received on interest rate swap contracts are recognized as interest expense on the Consolidated Statement of Income. If a hedging relationship is terminated for an interest rate swap contract, accumulated gains or losses associated with the contract are measured and recorded as a reduction or increase of current and future interest expense associated with the previously hedged debt obligations.

The following table summarizes the notional amounts of our outstanding interest rate swap contracts as of December 31, 2017 and December 31, 2016:

	Notional Amount	
	2017	2016
Interest rate swap contracts entered into as fair value hedges of the following fixed-rate senior notes:		
3.875% senior notes due 2025	$200	$200
3.450% senior notes due 2027	250	—
Total	$450	$200

We have entered into swap contracts that were designated as hedges of certain of our fixed rate notes in 2017 and 2016 and also terminated the hedging relationship by settling certain of those swap contracts during 2017 and 2016. In 2017, we terminated the hedging relationship on certain outstanding swap contracts amounting to $200 million notional amount by settling such swap contracts. In July 2016, we terminated the hedging relationship on all of our then outstanding swap contracts, amounting to $3.6 billion notional amount, by settling such swap contracts. The settlement of swap contracts resulted in the receipt of net proceeds of $3 million and $196 million during the years ended December 31, 2017 and 2016, respectively, which are accounted for as a reduction of current and future interest

expense associated with these notes. See Note 11 for additional details related to reductions of current and future interest expense.

A sensitivity analysis to measure potential changes in the market value of our debt and interest rate swap contracts from a change in interest rates indicated that a one percentage point increase in interest rates as of December 31, 2017 would have reduced the aggregate fair value of our net payable by $1.3 billion. A one percentage point decrease as of December 31, 2017 would have increased the aggregate fair value of our net payable by $1.5 billion.

ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA
CELGENE CORPORATION AND SUBSIDIARIES
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REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Board of Directors and Stockholders
Celgene Corporation:

Opinion on the Consolidated Financial Statements

We have audited the accompanying consolidated balance sheets of Celgene Corporation and subsidiaries (the Company) as of December 31, 2017 and 2016, and the related consolidated statements of income, comprehensive income, cash flows, and stockholders' equity for each of the years in the three-year period ended December 31, 2017, the related notes, and the consolidated financial statement schedule, "Schedule II - Valuation and Qualifying Accounts" (collectively, the "consolidated financial statements"). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2017 and 2016, and the results of its operations and its cash flows for each of the years in the three-year period ended December 31, 2017, in conformity with U.S. generally accepted accounting principles.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) ("PCAOB"), the Company's internal control over financial reporting as of December 31, 2017, based on criteria established in Internal Control - Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission, and our report dated February 7, 2018 expressed an unqualified opinion on the effectiveness of the Company's internal control over financial reporting.

Change in Accounting Principle

As discussed in Note 1 to the consolidated financial statements, on January 1, 2017 the Company has adopted on a prospective basis FASB Accounting Standards Update No. 2016-09, "Compensation-Stock Compensation," which requires that excess tax benefits and tax deficiencies that arise upon vesting or exercise of share-based payments be recognized as income tax benefits and expenses in the income statement.

Basis for Opinion

These consolidated financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these consolidated financial statements based on our audits. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. We believe that our audits provide a reasonable basis for our opinion.

/s/ KPMG LLP

We have served as the Company's auditor since 1986.

Short Hills, New Jersey
February 7, 2018

CELGENE CORPORATION AND SUBSIDIARIES
CONSOLIDATED BALANCE SHEETS
(Dollars in millions, except per share amounts)

	December 31,	
	2017	2016
Assets		
Current assets:		
Cash and cash equivalents	$7,013	$6,170
Marketable securities available-for-sale	5,029	1,800
Accounts receivable, net of allowances of $36 and $31 as of December 31, 2017 and 2016, respectively	1,921	1,621
Inventory	541	498
Other current assets	388	779
Total current assets	14,892	10,868
Property, plant and equipment, net	1,070	930
Intangible assets, net	8,436	10,392
Goodwill	4,866	4,866
Other non-current assets	877	1,030
Total assets	$30,141	$28,086
Liabilities and Stockholders' Equity		
Current liabilities:		
Short-term borrowings and current portion of long-term debt	$—	$501
Accounts payable	305	247
Accrued expenses and other current liabilities	2,523	2,115
Income taxes payable	84	41
Current portion of deferred revenue	75	55
Total current liabilities	2,987	2,959
Deferred revenue, net of current portion	34	28
Income taxes payable	2,490	420
Deferred income tax liabilities	1,327	—
Other non-current tax liabilities	—	2,519
Other non-current liabilities	544	1,771
Long-term debt, net of discount	15,838	13,789
Total liabilities	23,220	21,486
Commitments and Contingencies (Note 18)		
Stockholders' Equity:		
Preferred stock, $.01 par value per share, 5.0 million shares authorized; none outstanding as of December 31, 2017 and 2016, respectively	—	—
Common stock, $.01 par value per share, 1,150.0 million shares authorized; issued 971.7 million and 954.1 million shares as of December 31, 2017 and 2016, respectively	10	10
Common stock in treasury, at cost; 212.4 million and 175.5 million shares as of December 31, 2017 and 2016, respectively	(20,243)	(16,281)
Additional paid-in capital	13,806	12,378
Retained earnings	13,061	10,074
Accumulated other comprehensive income	287	419
Total stockholders' equity	6,921	6,600
Total liabilities and stockholders' equity	$30,141	$28,086

See accompanying Notes to Consolidated Financial Statements

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CELGENE CORPORATION AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF INCOME
(In millions, except per share amounts)

	Years Ended December 31,		
	2017	2016	2015
Revenue:			
Net product sales	$12,973	$11,185	$9,161
Other revenue	30	44	95
Total revenue	13,003	11,229	9,256
Expenses:			
Cost of goods sold (excluding amortization of acquired intangible assets)	461	438	420
Research and development	5,915	4,470	3,697
Selling, general and administrative	2,941	2,658	2,305
Amortization of acquired intangible assets	329	459	279
Acquisition related (gains) charges and restructuring, net	(1,350)	38	300
Total costs and expenses	8,296	8,063	7,001
Operating income	4,707	3,166	2,255
Other income and (expense):			
Interest and investment income, net	105	30	31
Interest (expense)	(522)	(500)	(311)
Other income (expense), net	24	(324)	48
Income before income taxes	4,314	2,372	2,023
Income tax provision	1,374	373	421
Net income	$2,940	$1,999	$1,602
Net income per share:			
Basic	$3.77	$2.57	$2.02
Diluted	$3.64	$2.49	$1.94
Weighted average shares:			
Basic	779.2	777.2	792.2
Diluted	808.7	803.3	824.9

See accompanying Notes to Consolidated Financial Statements

CELGENE CORPORATION AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME
(Dollars in millions)

	Years Ended December 31,		
	2017	2016	2015
Net income	$ 2,940	$ 1,999	$ 1,602
Other comprehensive income (loss):			
Foreign currency translation adjustments	70	(26)	(26)
Pension liability adjustment	16	(24)	2
Net unrealized (losses) gains related to cash flow hedges:			
Unrealized holding (losses) gains	(434)	145	411
Tax benefit (expense)	6	(13)	7
Unrealized holding (losses) gains, net of tax	(428)	132	418
Reclassification adjustment for (gains) included in net income	(178)	(300)	(349)
Tax (benefit)	(3)	(3)	(2)
Reclassification adjustment for (gains) included in net income, net of tax	(181)	(303)	(351)
Excluded component related to cash flow hedges:			
Amortization of excluded component (losses)	(15)	—	—
Reclassification of realized excluded component losses to net income	18	—	—
	3	—	—

Reclassification adjustment for losses included in net income			
Net unrealized gains (losses) on marketable securities available for sale:			
Unrealized holding gains (losses)	611	(563)	(315)
Tax (expense) benefit	(216)	203	110
Unrealized holding gains (losses), net of tax	395	(360)	(205)
Reclassification adjustment for losses included in net income	37	358	23
Tax (benefit)	(14)	(126)	(8)
Reclassification adjustment for losses included in net income, net of tax	23	232	15
Total other comprehensive (loss)	(102)	(349)	(147)
Comprehensive income	$ 2,838	$ 1,650	$ 1,455

See accompanying Notes to Consolidated Financial Statements

CELGENE CORPORATION AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF CASH FLOWS
(Dollars in millions)

	Years Ended December 31,		
	2017	2016	2015
Cash flows from operating activities:			
Net income	$2,940	$1,999	$1,602
Adjustments to reconcile net income to net cash provided by operating activities:			
Depreciation	134	121	115
Amortization	337	384	287
Deferred income taxes	(1,330)	(344)	(33)
Impairment charges	1,679	489	49
Change in value of contingent consideration	(1,350)	21	(8)
(Gain) on sale of business	—	(38)	—
Net (gain) on sale of investments	(61)	(7)	(84)
Share-based compensation expense	644	606	577
Share-based employee benefit plan expense	34	40	35
Derivative instruments	72	169	(25)
Other, net	(24)	(10)	26
Change in current assets and liabilities, excluding the effect of acquisitions:			
Accounts receivable	(236)	(222)	(305)
Inventory	(42)	(55)	(51)
Other operating assets	(73)	94	(326)
Accounts payable and other operating liabilities	273	619	527
Payment of contingent consideration	—	(9)	—
Income tax payable	2,229	301	362
Deferred revenue	20	7	37
Net cash provided by operating activities	5,246	4,165	2,785
Cash flows from investing activities:			
Proceeds from sales of marketable securities available for sale	5,968	633	3,800
Purchases of marketable securities available for sale	(8,478)	(1,281)	(1,889)
Payments for acquisition of businesses, net of cash acquired	—	—	(7,695)
Capital expenditures	(279)	(236)	(286)
Proceeds from sales of investment securities	20	15	92
Purchases of investment securities	(95)	(132)	(273)
Other investing activities	(27)	(1)	(8)
Net cash used in investing activities	(2,891)	(1,002)	(6,259)
Cash flows from financing activities:			
Payment for treasury shares	(3,833)	(2,160)	(3,257)
Proceeds from short-term borrowing	—	100	6,111
Principal repayments on short-term borrowing	—	(100)	(6,213)
Proceeds from the issuance of long-term debt	3,468	—	7,913
Repayments of long-term debt	(1,904)	—	(514)
Net proceeds (payments) from common equity put options	—	8	(9)
Payment of contingent consideration	—	(41)	—
Net proceeds from share-based compensation arrangements	685	359	252
Net cash (used in) provided by financing activities	(1,584)	(1,834)	4,283
Effect of currency rate changes on cash and cash equivalents	72	(39)	(51)

Net increase in cash and cash equivalents	843	1,290	758
Cash and cash equivalents at beginning of period	6,170	4,880	4,122
Cash and cash equivalents at end of period	$7,013	$6,170	$4,880

See accompanying Notes to Consolidated Financial Statements

CELGENE CORPORATION AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF CASH FLOWS – (Continued)
(Dollars in millions)

	Years Ended December 31,		
	2017	2016	2015
Supplemental schedule of non-cash investing and financing activity:			
Fair value of contingent consideration issued in business combinations	$—	$—	$166
Change in net unrealized (gain) loss on marketable securities available for sale	(611)	563	315
Investment in Human Longevity, Inc. common stock	—	40	—
Investment in Celularity, Inc. common stock	22	—	—
Supplemental disclosure of cash flow information:			
Interest paid	$539	$527	$243
Income taxes paid	475	373	361

See accompanying Notes to Consolidated Financial Statements

CELGENE CORPORATION AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY
(Dollars in millions)

Years Ended December 31, 2017, 2016 and 2015	Common Stock	Treasury Stock	Additional Paid-in Capital	Retained Earnings	Accumulated Other Comprehensive Income (Loss)	Stockholders' Equity
Balances as of December 31, 2014	$ 9	$ (10,699)	$ 9,827	$ 6,473	$ 915	$ 6,525
Net income				1,602		1,602
Other comprehensive (loss)					(147)	(147)
Exercise of stock options and conversion of restricted stock units	—	(135)	395			260
Shares purchased under share repurchase program		(3,257)				(3,257)
Issuance of common stock for employee benefit plans		39	18			57
Expense related to share-based compensation			577			577
Income tax benefit upon exercise of stock options			302			302
Balances as of December 31, 2015	$ 9	$ (14,052)	$ 11,119	$ 8,075	$ 768	$ 5,919
Net income				1,999		1,999
Other comprehensive (loss)					(349)	(349)
Exercise of stock options and conversion of restricted stock units	1	(105)	453			349
Shares purchased under share repurchase program		(2,160)				(2,160)
Issuance of common stock for employee benefit plans		36	15			51
Expense related to share-based compensation			606			606
Income tax benefit upon exercise of stock options			185			185
Balances as of December 31, 2016	$ 10	$ (16,281)	$ 12,378	$ 10,074	$ 419	$ 6,600
Net income				2,940		2,940
Other comprehensive (loss)					(102)	(102)
Exercise of stock options and conversion of restricted stock units	—	(83)	776			693
Shares purchased under share repurchase program		(3,911)				(3,911)
Issuance of common stock for employee benefit plans		32	8			40
Expense related to share-based compensation			644			644
Adoption of ASU 2016-09 and ASU 2017-12 (Note 1)				47	(30)	17
Balances as of December 31, 2017	$ 10	$ (20,243)	$ 13,806	$ 13,061	$ 287	$ 6,921

See accompanying Notes to Consolidated Financial Statements

CELGENE CORPORATION AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(Amounts in millions, except per share amounts, unless otherwise indicated)
1. Nature of Business, Basis of Presentation and Summary of Significant Accounting Policies
Celgene Corporation, together with its subsidiaries (collectively “we,” “our,” “us,” “Celgene” or the “Company”), is an integrated global biopharmaceutical company engaged primarily in the discovery, development and commercialization of innovative therapies for the treatment of cancer and inflammatory diseases through next-generation solutions in protein homeostasis, immuno-oncology, epigenetics, immunology and neuro-inflammation. Celgene Corporation was incorporated in the State of Delaware in 1986.

Our primary commercial stage products include REVLIMID®, POMALYST®/IMNOVID®, OTEZLA®, ABRAXANE®, VIDAZA®, azacitidine for injection (generic version of VIDAZA®), THALOMID® (sold as THALOMID® or Thalidomide Celgene® outside of the U.S.) and IDHIFA®. IDHIFA® was approved by the U.S. Food and Drug Administration (FDA) in August 2017 for the treatment of adult patients with relapsed or refractory acute myeloid leukemia (AML) or (R/R AML) with an isocitrate dehydrogenase-2 (IDH2) mutation as detected by an FDA approved diagnostic test. We began recognizing revenue related to IDHIFA® during the third quarter of 2017. In addition, we earn revenue from other product sales and licensing arrangements.

The consolidated financial statements include the accounts of Celgene Corporation and its subsidiaries. Investments in limited partnerships and interests where we have an equity interest of 50% or less and do not otherwise have a controlling financial interest are accounted for by either the equity or cost method.

We operate in a single segment engaged in the discovery, development, manufacturing, marketing, distribution and sale of innovative therapies for the treatment of cancer and inflammatory diseases. Consistent with our operational structure, our Chief Executive Officer (CEO), as the chief operating decision maker, manages and allocates resources at the global corporate level. Our global research and development organization is responsible for discovery of new drug candidates and supports development and registration efforts for potential future products. Our global supply chain organization is responsible for the manufacturing and supply of products. Regional/therapeutic area commercial organizations market, distribute and sell our products. The business is also supported by global corporate staff functions. Managing and allocating resources at the global corporate level enables our CEO to assess both the overall level of resources available and how to best deploy these resources across functions, therapeutic areas, regional commercial organizations and research and development projects in line with our overarching long-term corporate-wide strategic goals, rather than on a product or franchise basis. Consistent with this decision-making process, our CEO uses consolidated, single-segment financial information for purposes of evaluating performance, allocating resources, setting incentive compensation targets, as well as forecasting future period financial results.

The preparation of the consolidated financial statements requires management to make estimates and assumptions that affect reported amounts and disclosures. Actual results could differ from those estimates. We are subject to certain risks and uncertainties related to, among other things, product development, regulatory approval, market acceptance, scope of patent and proprietary rights, competition, outcome of legal and governmental proceedings, credit risk, technological change and product liability.

Certain prior year amounts have been reclassified to conform to the current year's presentation.

Financial Instruments: Certain financial instruments reflected in the Consolidated Balance Sheets, (e.g., cash, cash equivalents, accounts receivable, certain other assets, accounts payable, short-term borrowings and certain other liabilities) are recorded at cost, which approximates fair value due to their short-term nature. The fair values of financial instruments other than marketable securities are determined through a combination of management estimates and information obtained from third parties using the latest market data. The fair value of available-for-sale

marketable securities is determined utilizing the valuation techniques appropriate to the type of security. (see Note 4).

Derivative Instruments and Hedges: All derivative instruments are recognized on the balance sheet at their fair value. Changes in the fair value of derivative instruments are recorded each period in current earnings or other comprehensive income (loss), depending on whether a derivative instrument is designated as part of a hedging transaction and, if it is, the type of hedging transaction. For a derivative to qualify as a hedge at inception and throughout the hedged period, we formally document the nature and relationships between the hedging instruments and hedged item. We assess, both at inception and on an on-going basis, whether derivative instruments are highly effective in offsetting the changes in the fair value or cash flows of hedged items. If we determine that a forecasted transaction is no longer probable of occurring, we discontinue hedge accounting and any related unrealized gain or loss on the derivative instrument is recognized in Other income (expense), net in our Consolidated Statements of Income. We

use derivative instruments, including those not designated as part of a hedging transaction, to manage our exposure to movements in foreign exchange, our stock price and interest rates. The use of these derivative instruments modifies the exposure of these risks with the intent to reduce our risk or cost.

Prior to the adoption of Accounting Standards Update No. 2017-12, "Targeted Improvements to Accounting for Hedging Activities" (ASU 2017-12), we were required to separately measure and reflect the amount by which the hedging instrument did not offset the changes in the fair value or cash flows of hedged items, which was referred to as the ineffective amount. We assessed hedge effectiveness on a quarterly basis and recorded the gain or loss related to the ineffective portion of derivative instruments, if any, in Other income (expense), net in the Consolidated Statements of Income. Pursuant to the provisions of ASU 2017-12, we are no longer required to separately measure and recognize hedge ineffectiveness. Upon adoption of ASU 2017-12, we no longer recognize hedge ineffectiveness in our Consolidated Statements of Income, but we instead recognize the entire change in the fair value of:

- cash flow hedges included in the assessment of hedge effectiveness in Other comprehensive income (loss). The amounts recorded in Other comprehensive income (loss) will subsequently be reclassified to earnings in the same line item in the Consolidated Statements of Income as impacted by the hedged item when the hedged item affects earnings; and

- fair value hedges included in the assessment of hedge effectiveness in the same line item in the Consolidated Statements of Income that is used to present the earnings effect of the hedged item.

Prior to the adoption of ASU 2017-12, we excluded option premiums and forward points (excluded components) from our assessment of hedge effectiveness for our foreign exchange cash flow hedges. We recognized all changes in fair value of the excluded components in Other income (expense), net in the Consolidated Statements of Income. The amendments in ASU 2017-12 continue to allow those components to be excluded from the assessment of hedge effectiveness, which we have elected to continue to apply. Pursuant to the provisions of ASU 2017-12, we no longer recognize changes in the fair value of the excluded components in Other income (expense), net, but we instead recognize the initial value of the excluded component on a straight-line basis over the life of the derivative instrument, within the same line item in the Consolidated Statements of Income that is used to present the earnings effect of the hedged item.

Cash, Cash Equivalents and Marketable Securities Available for Sale: We invest our excess cash primarily in money market funds, repurchase agreements, time deposits, commercial paper, U.S. Treasury securities, U.S. government-sponsored agency mortgage-backed securities (MBS), an ultra short income fund, global corporate debt securities and asset backed securities. All liquid investments with maturities of three months or less from the date of purchase are classified as cash equivalents and all investments with maturities of greater than three months from date of purchase are classified as marketable securities available for sale. We determine the appropriate classification of our investments in marketable debt and equity securities at the time of purchase. In addition, our equity investments in the publicly traded common stock of companies, including common stock of companies with whom we have entered into collaboration agreements, are designated as marketable securities available for sale.

Our marketable securities available for sale are primarily equity investments in the publicly traded common stock of companies, including common stock of companies with whom we have entered into collaboration agreements. In addition, we invest in debt securities that are carried at fair value, held for an unspecified period of time and are intended for use in meeting our ongoing liquidity needs. Unrealized gains and losses on available-for-sale securities, which are deemed to be temporary, are reported as a separate component of stockholders' equity, net of tax. The cost of debt securities is adjusted for amortization of premiums and accretion of discounts to maturity. The amortization,

along with realized gains and losses and other-than-temporary impairment charges related to debt securities, is included in Interest and investment income, net. Realized gains and losses and other than temporary impairment charges related to equity securities are included in Other income (expense), net in the Consolidated Statements of Income.

A decline in the market value of any available-for-sale security below its carrying value that is determined to be other-than-temporary would result in a charge to earnings and decrease in the security's carrying value down to its newly established fair value. Factors evaluated to determine if an investment is other-than-temporarily impaired include significant deterioration in earnings performance, credit rating, asset quality or business prospects of the issuer; adverse changes in the general market condition in which the issuer operates; our intent to hold to maturity and an evaluation as to whether it is more likely than not that we will not have to sell before recovery of its cost basis; our expected future cash flows from the security; and issues that raise concerns about the issuer's ability to continue as a going concern.

Concentration of Credit Risk: Cash, cash equivalents and marketable securities are financial instruments that potentially subject the Company to concentration of credit risk. We invest our excess cash primarily in money market funds, repurchase agreements, time deposits, commercial paper, U.S. Treasury securities, U.S. government-sponsored agency MBS, an ultra short income fund,

global corporate debt securities and asset backed securities (see Note 6). We have established guidelines relative to diversification and maturities to maintain safety and liquidity. These guidelines are reviewed periodically and may be modified to take advantage of trends in yields and interest rates.

We sell our products in the United States primarily through wholesale distributors and specialty contracted pharmacies. Therefore, wholesale distributors and large pharmacy chains account for a large portion of our U.S. trade receivables and net product revenues (see Note 19). International sales are primarily made directly to hospitals, clinics and retail chains, many of which in Europe are government owned and have extended their payment terms in recent years given the economic pressure these countries are facing. We continuously monitor the creditworthiness of our customers, including these governments, and have internal policies regarding customer credit limits. We estimate an allowance for doubtful accounts primarily based on the credit worthiness of our customers, historical payment patterns, aging of receivable balances and general economic conditions, including publicly available information on the credit worthiness of countries themselves and provinces or areas within such countries where they are the ultimate customers.

We continue to monitor economic conditions, including the volatility associated with international economies, the sovereign debt situation in certain European countries and associated impacts on the financial markets and our business. Our current business model in these markets is typically to sell our hematology and oncology products directly to principally government owned or controlled hospitals, which in turn directly deliver critical care to patients. Many of our products are used to treat life-threatening diseases and we believe this business model enables timely delivery and adequate supply of products. Many of the outstanding receivable balances are related to government-funded hospitals and we believe the receivable balances are ultimately collectible. Similarly, we believe that future sales to these customers will continue to be collectible.

Inventory: Inventories are recorded at the lower of cost or net realizable value, with cost determined on a first-in, first-out basis. We periodically review the composition of inventory in order to identify obsolete, slow-moving or otherwise non-saleable items. If non-saleable items are observed and there are no alternate uses for the inventory, we will record a write-down to net realizable value in the period that the decline in value is first recognized. Included in inventory are raw materials used in the production of preclinical and clinical products, which are charged to research and development expense when consumed.

We capitalize inventory costs associated with certain products prior to regulatory approval of products, or for inventory produced in new production facilities, when management considers it highly probable that the pre-approval inventories will be saleable. The determination to capitalize is based on the particular facts and circumstances relating to the expected regulatory approval of the product or production facility being considered, and accordingly, the time frame within which the determination is made varies from product to product. The assessment of whether or not the product is considered highly probable to be saleable is made on a quarterly basis and includes, but is not limited to, how far a particular product or facility has progressed along the approval process, any known safety or efficacy concerns, potential labeling restrictions and other impediments. We could be required to write down previously capitalized costs related to pre-launch inventories upon a change in such judgment, or due to a denial or delay of approval by regulatory bodies, a delay in commercialization or other potential factors. As of December 31, 2017, the carrying value of pre-approval inventory was not material.

Property, Plant and Equipment: Property, plant and equipment are stated at cost less accumulated depreciation. Depreciation of plant and equipment is recorded using the straight-line method. Building improvements are depreciated over the remaining useful life of the building. Leasehold improvements are depreciated over the lesser of the economic useful life of the asset or the remaining term of the lease, including anticipated renewal options. The

estimated useful lives of capitalized assets are as follows:

Buildings	40 years
Building and operating equipment	15 years
Manufacturing machinery and equipment	10 years
Other machinery and equipment	5 years
Furniture and fixtures	5 years
Computer equipment and software	3-7 years

Maintenance and repairs are charged to operations as incurred, while expenditures for improvements which extend the life of an asset are capitalized.

Capitalized Software Costs: We capitalize software costs incurred in connection with developing or obtaining software. Capitalized software costs are included in property, plant and equipment, net and are amortized over their estimated useful life of three to seven years from the date the systems are ready for their intended use.

Investments in Other Entities: We hold a portfolio of investments in equity securities and certain investment funds that are accounted for under either the equity method or cost method. Investments in companies or certain investment funds over which we have significant influence but not a controlling interest are accounted for using the equity method, with our share of earnings or losses reported in Other income (expense), net in the Consolidated Statements of Income. Our equity investments in the publicly traded common stock of companies, including common stock of companies with whom we have entered into collaboration agreements, are designated as marketable securities available-for-sale. Investments in equity securities of companies that become publicly traded and are not classified as equity method investments are accounted for as available-for-sale marketable securities prospectively from the date of such companies' initial public offering if we are not restricted from selling our investment for greater than one year. Our cost method and equity method investments are included in Other non-current assets on the Consolidated Balance Sheets.

All investments are reviewed on a regular basis for possible impairment. If an investment's fair value is determined to be less than its net carrying value and the decline is determined to be other-than-temporary, the investment is written down to its fair value. Such an evaluation is judgmental and dependent on specific facts and circumstances. Factors considered in determining whether an other-than-temporary decline in value has occurred include: market value or exit price of the investment based on either market-quoted prices or future rounds of financing by the investee; length of time that the market value was below its cost basis; financial condition and business prospects of the investee; our intent and ability to retain the investment for a sufficient period of time to allow for recovery in market value of the investment; issues that raise concerns about the investee's ability to continue as a going concern; any other information that we may be aware of related to the investment.

Other Intangible Assets: Intangible assets with definite useful lives are amortized to their estimated residual values over their estimated useful lives and reviewed for impairment if certain events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable. Amortization is initiated for IPR&D intangible assets when their useful lives have been determined. IPR&D intangible assets which are determined to have had a drop in their fair value are adjusted downward and an expense recognized in Research and development in the Consolidated Statements of Income. These in-process research and development (IPR&D) intangible assets are tested at least annually or when a triggering event occurs that could indicate a potential impairment.

Goodwill: Goodwill represents the excess of purchase price over fair value of net assets acquired in a business combination accounted for by the acquisition method of accounting and is not amortized, but is subject to impairment testing. We test our goodwill for impairment at least annually or when a triggering event occurs that could indicate a potential impairment by assessing qualitative factors or performing a quantitative analysis in determining whether it is more likely than not that the fair value of net assets are below their carrying amounts.

Impairment of Long-Lived Assets: Long-lived assets, such as property, plant and equipment and certain other long-term assets are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable.

Recoverability of assets to be held and used is measured by a comparison of the carrying amount of an asset or asset group to the estimated undiscounted future cash flows expected to be generated by the asset or asset group. If the carrying amount of the assets exceed their estimated future undiscounted net cash flows, an impairment charge is recognized for the amount by which the carrying amount of the assets exceed the fair value of the assets.

Contingent Consideration from Business Combinations: Subsequent to the acquisition date, we measure contingent consideration arrangements at fair value for each period with changes in fair value recognized in income as

Acquisition related (gains) charges and restructuring, net in the Consolidated Statements of Income. Changes in contingent consideration obligation values can result from movements in publicly listed prices of our Contingent Value Rights (CVRs), adjustments to discount rates, updates in the assumed achievement or timing of milestones or changes in the probability of certain clinical events and changes in the assumed probability associated with regulatory approval. In the absence of new information, changes in fair value reflect only the passage of time as development work towards the achievement of the milestones progresses, and is accrued based on an accretion schedule.

Foreign Currency Translation: Operations in non-U.S. entities are recorded in the functional currency of each entity. For financial reporting purposes, the functional currency of an entity is determined by a review of the source of an entity's most predominant cash flows. The results of operations for non-U.S. dollar functional currency entities are translated from functional currencies into U.S. dollars using the average currency rate during each month, which approximates the results that would be obtained using actual currency rates on the dates of individual transactions. Assets and liabilities are translated using currency rates at the end of the period. Adjustments resulting from translating the financial statements of our foreign entities into the U.S. dollar are excluded from the determination of net income and are recorded as a component of other comprehensive income (loss). Transaction gains and losses are recorded in Other income (expense), net in the Consolidated Statements of Income.

Research and Development Costs: Research and development costs are expensed as incurred. These include all internal and external costs related to services contracted by us. Upfront and milestone payments made to third parties in connection with research and development collaborations are expensed as incurred up to the point of regulatory approval. Milestone payments made to third parties upon regulatory approval are capitalized and amortized over the remaining useful life of the related product. Upfront payments are recorded when incurred, and milestone payments are recorded when the specific milestone has been achieved. Asset acquisition expenses, including expenses to acquire rights to pre-commercial compounds from a collaboration partner when there will be no further participation from the collaboration partner or other parties, are recorded as incurred.

Income Taxes: We utilize the asset and liability method of accounting for income taxes. Under this method, deferred tax assets and liabilities are determined based on the difference between the financial statement carrying amounts and tax bases of assets and liabilities using enacted tax rates in effect for years in which the temporary differences are expected to reverse. A valuation allowance is provided when it is more likely than not that some portion or all of a deferred tax asset will not be realized. We recognize the benefit of an uncertain tax position that we have taken or expect to take on income tax returns we file if such tax position is more likely than not to be sustained.

Revenue Recognition: Revenue from the sale of products is recognized when title and risk of loss of the product is transferred to the customer and the sales price is fixed and determinable. Provisions for discounts, early payments, rebates, sales returns and distributor chargebacks under terms customary in the industry are provided for in the same period the related sales are recorded. We record estimated reductions to revenue for volume-based discounts and rebates at the time of the initial sale. The estimated reductions to revenue for such volume-based discounts and rebates are based on the sales terms, historical experience and trend analysis.

We base our sales returns allowance on estimated on-hand retail/hospital inventories, measured end-customer demand as reported by third-party sources, actual returns history and other factors, such as the trend experience for lots where product is still being returned or inventory centralization and rationalization initiatives conducted by major pharmacy chains, as applicable. If the historical data we use to calculate these estimates do not properly reflect future returns, then a change in the allowance would be made in the period in which such a determination is made and revenues in that period could be materially affected. Under this methodology, we track actual returns by individual production lots. Returns on closed lots, that is, lots no longer eligible for return credits, are analyzed to determine historical returns experience. Returns on open lots, that is, lots still eligible for return credits, are monitored and compared with historical return trend rates. Any changes from the historical trend rates are considered in determining the current sales return allowance.

Sales discount accruals are based on payment terms extended to customers.

Government rebate accruals are based on estimated payments due to governmental agencies for purchases made by third parties under various governmental programs. U.S. Medicaid rebate accruals are generally based on historical payment data and estimates of future Medicaid beneficiary utilization applied to the Medicaid unit rebate formula established by the Center for Medicaid and Medicare Services. The Medicaid rebate percentage was increased and extended to Medicaid Managed Care Organizations in March 2010. The accrual of the rebates associated with Medicaid Managed Care Organizations is calculated based on estimated historical patient data related to Medicaid Managed Care Organizations. We also analyze actual billings received from the states to further support the accrual rates. Manufacturers of pharmaceutical products are responsible for 50% of the patient's cost of branded prescription drugs related to the Medicare Part D Coverage Gap. In order to estimate the cost to us of this coverage gap responsibility, we analyze data for eligible Medicare Part D patients against data for eligible Medicare Part D patients treated with our products as well as the historical invoices. This expense is recognized throughout the year as costs are

incurred. In certain international markets government-sponsored programs require rebates to be paid based on program specific rules and, accordingly, the rebate accruals are determined primarily on estimated eligible sales.

Rebates or administrative fees are offered to certain wholesale customers, group purchasing organizations and end-user customers, consistent with pharmaceutical industry practices. Settlement of rebates and fees may generally occur from one to 15 months from the date of sale. We record a provision for rebates at the time of sale based on contracted rates and historical redemption rates. Assumptions used to establish the provision include level of wholesaler inventories, contract sales volumes and average contract pricing. We regularly review the information related to these estimates and adjust the provision accordingly.

Chargeback accruals are based on the differentials between product acquisition prices paid by wholesalers and lower government contract pricing paid by eligible customers covered under federally qualified programs. Distributor service fee accruals are based on contractual fees to be paid to the wholesale distributor for services provided. TRICARE is a health care program of the U.S. Department of Defense Military Health System that provides civilian health benefits for military personnel, military retirees and their dependents. TRICARE rebate accruals are included in chargeback accruals and are based on estimated Department of Defense eligible sales multiplied by the TRICARE rebate formula.

We record estimated reductions to revenue for free goods and volume-based discounts at the time of the initial sale. The estimated reductions to revenue for such free goods and volume-based discounts are based on the sales terms, historical experience and trend analysis. The cost of free goods is included in cost of goods sold (excluding amortization of acquired intangible assets).

We recognize revenue from royalties based on licensees' sales of our products or products using our technologies. Royalties are recognized as earned in accordance with the contract terms when royalties from licensees can be reasonably estimated and collectability is reasonably assured. If royalties cannot be reasonably estimated or collectability of a royalty amount is not reasonably assured, royalties are recognized as revenue when the cash is received.

Share-Based Compensation: We utilize share based compensation in the form of stock options, restricted stock units (RSUs) and performance-based restricted stock units (PSUs). Compensation expense is recognized in the Consolidated Statements of Income based on the estimated fair value of the awards at grant date. Compensation expense recognized reflects an estimate of the number of awards expected to vest after taking into consideration an estimate of award forfeitures based on actual experience and is recognized on a straight-line basis over the requisite service period, which is generally the vesting period required to obtain full vesting. Management expectations related to the achievement of performance goals associated with PSU grants is assessed regularly and that assessment is used to determine whether PSU grants are expected to vest. If performance-based milestones related to PSU grants are not met or not expected to be met, any compensation expense recognized to date associated with grants that are not expected to vest will be reversed.

The fair values of stock option grants are estimated as of the date of grant using a Black-Scholes option valuation model. The fair values of RSU and PSU grants that are not based on market performance are based on the market value of our Common Stock on the date of grant. Certain of our PSU grants are measured based on the achievement of specified performance and market targets, including non-GAAP revenue, non-GAAP earnings per share, and relative total shareholder return. The grant date fair value for the portion of the PSUs related to non-GAAP revenue and non-GAAP earnings per share is estimated using the fair market value of our common stock on the grant date. The grant date fair value for the portion of the PSUs related to relative total shareholder return is estimated using the Monte Carlo valuation model.

Earnings Per Share: Basic earnings per share is computed by dividing net income by the weighted-average number of common shares outstanding during the period. Diluted earnings per share is computed by dividing net income by the weighted-average number of common shares outstanding during the period, assuming potentially dilutive common shares resulting from option exercises, RSUs, PSUs, warrants and other incentives had been issued and any proceeds thereof used to repurchase common stock at the average market price during the period. The assumed proceeds used to repurchase common stock is the sum of the amount to be paid to us upon exercise of options and the amount of compensation cost attributed to future services and not yet recognized.

New accounting standards which have been adopted

In July 2015, the Financial Accounting Standards Board (FASB) issued Accounting Standards Update No. 2015-11, "Inventory (Topic 330): Simplifying the Measurement of Inventory" (ASU 2015-11). ASU 2015-11 applies only to inventory for which cost is determined by methods other than last in, first-out and the retail inventory method, which includes inventory that is measured using first-in, first-out or average cost. Inventory within the scope of this standard is required to be measured at the lower of cost and net realizable value. Net realizable value is the estimated selling prices in the ordinary course of business, less reasonably predictable costs of completion, disposal, and transportation.

ASU 2015-11 was effective for us beginning in the first quarter of 2017. The adoption of this standard did not have a material impact on our consolidated financial statements and related disclosures.

In March 2016, the FASB issued Accounting Standards Update No. 2016-07, "Investments-Equity Method and Joint Ventures" (ASU 2016-07). ASU 2016-07 eliminates the requirement that when an investment qualifies for use of the equity method as a result of an increase in the level of ownership interest or degree of influence, an investor must adjust the investment, results of operations, and retained earnings retroactively as if the equity method had been in effect during all previous periods that the investment had been held. Under the new guidance, available-for-sale equity securities that become qualified for the equity method of accounting will result in the recognition through earnings of the unrealized holding gain or loss in accumulated other comprehensive income at the date the investment becomes qualified for use of the equity method. ASU 2016-07 was effective for us beginning in the first quarter of 2017. The adoption of this updated standard did not have a material impact on our consolidated financial statements and related disclosures.

In March 2016, the FASB issued Accounting Standards Update No. 2016-09, "Compensation-Stock Compensation" (ASU 2016-09). The new standard was effective for us on January 1, 2017. Among other provisions, the new standard requires that excess tax benefits and tax deficiencies that arise upon vesting or exercise of share-based payments be recognized as income tax benefits and expenses in the income statement. Previously, such amounts were recorded to additional paid-in-capital. This aspect of the new guidance was required to be adopted prospectively, and accordingly, the income tax provision for the year ended

December 31, 2017 includes $290 million of excess tax benefits arising from share-based compensation awards that vested or were exercised during the period. In addition, at January 1, 2017, the Company recorded a cumulative-effect adjustment to Retained earnings, with a corresponding increase to net deferred tax assets, in the amount of $17 million related to previously unrecognized excess tax benefits outstanding in the Consolidated Balance Sheet. In addition, the adoption of the new standard increased the diluted share count for the year ended December 31, 2017 by approximately 7.3 million shares. The new standard also amends the presentation of employee share-based payment-related items in the statement of cash flows by requiring that excess income tax benefits and tax deficiencies be classified in Cash flows from operating activities (such amounts were previously included in Cash flows from financing activities). The Company elected to adopt this aspect of the new guidance retrospectively, and accordingly, to conform to the current year presentation, $189 million and $301 million of excess tax benefits were reclassified from Net cash (used in) provided by financing activities to Net cash provided by operating activities and included within the change in Income taxes payable in the Consolidated Statement of Cash Flows for the years ended December 31, 2016 and December 31, 2015, respectively. As a result, Net cash (used in) provided by financing activities increased by $189 million and decreased by $301 million, respectively, with a corresponding increase in Net cash provided by operating activities in the Consolidated Statement of Cash Flows for the years ended December 31, 2016 and December 31, 2015, respectively.
In August 2017, the FASB issued ASU 2017-12 which we adopted on August 31, 2017 (Adoption Date). The guidance was issued to improve and more closely align a company’s financial reporting of its hedging relationships with the objective of a company’s risk management activities. Among other provisions, the new standard (1) eliminates the separate measurement and reporting of hedge ineffectiveness and (2) permits an entity to recognize in earnings the initial value of an excluded component under a systematic and rational method over the life of the derivative instrument. In accordance with ASU 2017-12, certain provisions were required to be applied on a modified retrospective basis, which requires a cumulative effect adjustment to accumulated other comprehensive income with a corresponding adjustment to retained earnings as of the beginning of the fiscal year of adoption, or January 1, 2017 (Application Date). In addition, certain provisions in the guidance require modifications to existing presentation and disclosure requirements on a prospective basis. See Note 5 for disclosures relating to the Company’s derivative instruments and hedging activities.

Pursuant to the provisions of ASU 2017-12, we are no longer required to separately measure and report hedge ineffectiveness, which was previously recorded in Other income (expense), net in our Consolidated Statements of Income. For fair value hedges, the entire change in the fair value of the hedging instrument included in the assessment of hedge effectiveness is recorded in the same line item in the Consolidated Statements of Income that is used to present the earnings effect of the hedged item. The timing of recognition of the change in fair value of a hedging instrument included in the assessment of hedge effectiveness is the same as prior to the adoption of ASU 2017-12. For cash flow hedges the entire change in the fair value of the hedging instrument included in the assessment of hedge effectiveness is recorded in Other comprehensive income (loss). Those amounts are subsequently reclassified to earnings in the same line item in the Consolidated Statements of Income as impacted by the hedged item when the hedged item affects earnings.

In accordance with the transition provisions of ASU 2017-12, the Company is required to eliminate the separate measurement of ineffectiveness for its cash flow hedging instruments existing as of the Adoption Date through a cumulative effect adjustment to retained earnings as of the Application Date. We did not record a cumulative effect adjustment to eliminate ineffectiveness amounts as all such amounts were not material to the Company’s previously issued Consolidated Financial Statements. In addition, we did not have any ineffectiveness during fiscal year 2017.

The Company may continue to elect to exclude certain portions of its derivative instruments' change in fair value from the assessment of hedge effectiveness (excluded component). In accordance with the new guidance, the Company may

recognize in earnings the initial value of the excluded component on a systematic and rational method over the life of the derivative instrument. Alternatively, the Company may elect to continue to recognize all fair value changes in an excluded component currently in earnings, which is consistent with the guidance prior to the issuance of ASU 2017-12. We will recognize in earnings the initial value of the excluded component on a straight-line basis over the life of the derivative instrument. Previously, we recognized all changes in fair value of the excluded components in Other income (expense), net in the Consolidated Statements of Income. We believe the revised guidance in ASU 2017-12 better portrays the economic results of our risk management activities and hedging relationships in our Consolidated Financial Statements. In accordance with the transition provisions of ASU 2017-12, we modified the recognition model for the excluded component from a mark-to-market approach to an amortization approach for all hedges existing as of the Adoption Date with a cumulative-effect adjustment of $30 million that reduced Accumulated other comprehensive income with a corresponding adjustment that increased Retained earnings as of the Application Date. The effect of the change in recognition model to an amortization approach, increased both income before income taxes and net income by approximately $115 million for the year ended December 31, 2017. In addition, the effect of the change in recognition model to an amortization approach also increased both the Company’s basic and diluted income per share by $0.15 and $0.14, respectively, for the year ended December 31, 2017.

In addition, the Company assessed the impact of applying the guidance to its Consolidated Financial Statements on previously issued interim reports for the three-month period ended March 31, 2017, and the three- and six-month periods ended June 30, 2017. The Company concluded that the impacts to the previously issued interim reports were not material and therefore no recast of such reports have been made at this time. During the nine-month period ended September 30, 2017, the Company recorded pre-tax expense of $11 million for the three-month period ended March 31, 2017 and pre-tax income of $48 million for the three-month period ended June 30, 2017 as a result of applying the new guidance, which is included in the effects disclosed above. Upon filing of the interim reports on Form 10-Q for the quarterly periods ended March 31, 2018 and June 30, 2018, we intend to recast the financial statements for the quarterly periods ended March 31, 2017 and June 30, 2017, respectively, to reflect the adoption of ASU 2017-12. Within this Form 10-K, we have recast the quarterly periods ended March 31, 2017 and June 30, 2017 within our quarterly results of operations footnote (see Note 20).

New accounting standards which have not yet been adopted

In May 2014, the FASB issued Accounting Standards Update No. 2014-09, “Revenue from Contracts with Customers” (ASU 2014-09) and has subsequently issued a number of amendments to ASU 2014-09. The new standard, as amended, provides a single comprehensive model to be used in the accounting for revenue arising from contracts with customers and supersedes current revenue recognition guidance, including industry-specific guidance. The standard’s stated core principle is that an entity should recognize revenue to depict the transfer of promised goods or services to customers in an amount that reflects the consideration to which the entity expects to be entitled in exchange for those goods or services. To achieve this core principle, ASU 2014-09 includes provisions within a five step model that includes identifying the contract with a customer, identifying the performance obligations in the contract, determining the transaction price, allocating the transaction price to the performance obligations, and recognizing revenue when, or as, an entity satisfies a performance obligation. In addition, the standard requires disclosure of the nature, amount, timing, and uncertainty of revenue and cash flows arising from contracts with customers.

The new standard will be effective for us beginning January 1, 2018 and permits two methods of adoption: the full retrospective method, which requires the standard to be applied to each prior period presented, or the modified retrospective method, which requires the cumulative effect of adoption to be recognized as an adjustment to opening retained earnings in the period of adoption. We will adopt the standard using the modified retrospective method.

We have completed an analysis of existing contracts with our customers and assessed the differences in accounting for such contracts under ASU 2014-09 compared with current revenue accounting standards. Based on our review of current customer contracts, we do not expect the implementation of ASU 2014-09 to have a material quantitative impact on our consolidated financial statements as the timing of revenue recognition for product sales is not expected to significantly change. In limited instances, we may recognize revenue earlier than under the current standard. Currently, we defer certain revenue where the price pursuant to the underlying customer arrangement is not fixed and determinable. Under the new standard, such customer arrangements will be accounted for as variable consideration, which may result in revenue being recognized earlier provided we can reliably estimate the ultimate price expected to be realized from the customer. In addition, we do not expect a material cumulative effect adjustment to Retained earnings upon adoption of the standard on January 1, 2018. Adoption of the new standard will also result in additional revenue-related disclosures in the footnotes to our consolidated financial statements.

In January 2016, the FASB issued Accounting Standards Update No. 2016-01, "Financial Instruments–Overall: Recognition and Measurement of Financial Assets and Financial Liabilities" (ASU 2016-01). ASU 2016-01 changes accounting for equity investments, financial liabilities under the fair value option, and presentation and disclosure requirements for financial instruments. ASU 2016-01 does not apply to equity investments in consolidated

subsidiaries or those accounted for under the equity method of accounting. In addition, the FASB clarified guidance related to the valuation allowance assessment when recognizing deferred tax assets resulting from unrealized losses on available-for-sale debt securities. Equity investments with readily determinable fair values will be measured at fair value with changes in fair value recognized in net income. Companies have the option to either measure equity investments without readily determinable fair values at fair value or at cost adjusted for changes in observable prices minus impairment. We have elected to measure equity investments without readily determinable fair values at cost adjusted for changes in observable prices minus impairment, which will be recognized in net income. Companies that elect the fair value option for financial liabilities must recognize changes in fair value related to instrument-specific credit risk in other comprehensive income. Companies must assess valuation allowances for deferred tax assets related to available-for-sale debt securities in combination with their other deferred tax assets. ASU 2016-01 will be effective for us beginning in the first quarter of 2018. We expect the implementation of this standard to have an impact on our consolidated financial statements and related disclosures, as we held publicly traded equity investments as of December 31, 2017 with a fair value of approximately $1.8 billion in a net unrealized gain position, net of tax of $565 million as of December 31, 2017. We will record a cumulative-effect adjustment to retained earnings for the amount of unrealized gains or losses, net of tax at the beginning of the fiscal year of adoption. The guidance related to equity investments without readily determinable fair values should be applied prospectively to equity investments that exist as of the date of adoption. The adoption of ASU 2016-01 is expected to increase volatility in our net income

as changes in the fair value of available-for-sale equity investments and changes in observable prices of equity investments without readily determinable fair values will be recorded in net income.

In February 2016, the FASB issued Accounting Standards Update No. 2016-02, "Leases" (ASU 2016-02). ASU 2016-02 provides accounting guidance for both lessee and lessor accounting models. Among other things, lessees will recognize a right-of-use asset and a lease liability for leases with a duration of greater than one year. For income statement purposes, ASU 2016-02 will require leases to be classified as either an operating or finance lease. Operating leases will result in straight-line expense while finance leases will result in a front-loaded expense pattern. The new standard will be effective for us on January 1, 2019 and will be adopted using a modified retrospective approach which will require application of the new guidance at the beginning of the earliest comparative period presented. We are currently evaluating the effect that the updated standard will have on our consolidated financial statements and related disclosures. We expect the implementation of this standard to have an impact on our consolidated financial statements and related disclosures as we had aggregate future minimum lease payments of approximately $235 million as of December 31, 2017 under our portfolio of non-cancelable leased office and research facilities at that time which had various expirations dates between 2018 and 2025. We anticipate recognition of additional assets and corresponding liabilities related to these leases on our consolidated balance sheet.

In June 2016, the FASB issued Accounting Standards Update No. 2016-13, "Financial Instruments - Credit Losses: Measurement of Credit Losses on Financial Instruments" (ASU 2016-13). ASU 2016-13 requires that expected credit losses relating to financial assets measured on an amortized cost basis and available-for-sale debt securities be recorded through an allowance for credit losses. ASU 2016-13 limits the amount of credit losses to be recognized for available-for-sale debt securities to the amount by which carrying value exceeds fair value and also requires the reversal of previously recognized credit losses if fair value increases. The new standard will be effective for us on January 1, 2020. Early adoption will be available on January 1, 2019. We are currently evaluating the effect that the updated standard will have on our consolidated financial statements and related disclosures.

In August 2016, the FASB issued Accounting Standards Update No. 2016-15, "Statement of Cash Flows (Topic 230): Classification of Certain Cash Receipts and Cash Payments" (ASU 2016-15). ASU 2016-15 clarifies how companies present and classify certain cash receipts and cash payments in the statement of cash flows where diversity in practice exists. ASU 2016-15 is effective for us in our first quarter of fiscal 2018. There will not be any changes to the presentation of our Consolidated Statement of Cash Flows upon adoption of the standard.

In October 2016, the FASB issued Accounting Standards Update No. 2016-16, "Intra-Entity Transfers of Assets Other Than Inventory" (ASU 2016-16). ASU 2016-16 requires the income tax consequences of intra-entity transfers of assets other than inventory to be recognized as current period income tax expense or benefit and removes the requirement to defer and amortize the consolidated tax consequences of intra-entity transfers. The new standard will be effective for us on January 1, 2018 and will be adopted using a modified retrospective approach which requires a cumulative effect adjustment to retained earnings as of the beginning of the period of adoption. As of December 31, 2017, we had tax assets of $166 million related to intra-entity transfers of assets other than inventory. Upon adoption, we anticipate recording a cumulative-effect adjustment that will decrease Retained earnings by approximately $166 million.

In January 2017, the FASB issued Accounting Standards Update No. 2017-01, “Business Combinations” (ASU 2017-01). ASU 2017-01 provides guidance for evaluating whether transactions should be accounted for as acquisitions (or disposals) of assets or businesses. The guidance provides a screen to determine when an integrated set of assets and activities (a “set”) does not qualify to be a business. The screen requires that when substantially all of the fair value of the gross assets acquired (or disposed of) is concentrated in an identifiable asset or a group of similar identifiable assets, the set is not a business. If the screen is not met, the guidance requires a set to be considered a

business to include, at a minimum, an input and a substantive process that together significantly contribute to the ability to create outputs and removes the evaluation as to whether a market participant could replace the missing elements. The new standard will be effective for us on January 1, 2018 and will be adopted on a prospective basis. We anticipate that the adoption of this standard will result in more acquisitions being accounted for as asset acquisitions including the announced acquisition of Impact Biomedicines, Inc. (Impact). See Note 21 for further details related to our acquisition of Impact.

2. Acquisitions and Divestitures

Acquisitions in 2017:

Delinia, Inc. (Delinia): On February 3, 2017, we acquired all of the outstanding shares of Delinia, a privately held biotechnology company focused on developing novel therapeutics for the treatment of autoimmune diseases. The transaction expands our Inflammation and Immunology pipeline primarily through the acquisition of Delinia's lead program, DEL-106, as well as related second generation programs. DEL-106 is a novel IL-2 mutein Fc fusion protein designed to preferentially upregulate regulatory T cells (Tregs), immune cells that are critical to maintaining natural self-tolerance and immune system homeostasis.

The consideration included an initial payment of $302 million. In addition, the sellers of Delinia are eligible to receive up to $475 million in contingent development, regulatory and commercial milestones. The acquisition did not include any significant processes and thus, for accounting purposes, we have concluded that the acquired assets did not meet the definition of a business. The initial payment was allocated primarily to the DEL-106 program, resulting in a $300 million research and development asset acquisition expense and approximately $2 million of net assets acquired.

Other acquisitions: In addition, during the first quarter of 2017, we acquired all of the outstanding shares of a privately held biotechnology company for total initial consideration of $26 million. The sellers are also eligible to receive up to $210 million in contingent development and regulatory approval milestones. The acquisition did not include any significant processes and thus, for accounting purposes, we have concluded that the acquired assets did not meet the definition of a business. The consideration transferred resulted in a $25 million research and development asset acquisition expense and $1 million of net assets acquired.

Divestitures in 2017:

Celgene Pharmaceutical (Shanghai) Co. Ltd. (Celgene China): On August 31, 2017, we completed the sale of our Celgene commercial operations in China to BeiGene, Ltd. (BeiGene). The transaction resulted in an immaterial loss on disposal that was recorded on our Consolidated Statement of Income in Other income (expense), net during the third quarter of 2017. In conjunction with the sale, we contemporaneously entered into both a product supply agreement and strategic collaboration arrangement with BeiGene. See Note 17 for additional details related to the collaboration arrangement with BeiGene.

Acquisitions in 2016:

EngMab AG (EngMab): On September 27, 2016, we acquired all of the outstanding shares of EngMab, a privately held biotechnology company focused on T-cell bi-specific antibodies. EngMab's lead molecule, EM901 is a preclinical T-cell bi-specific antibody targeting B-cell maturation antigen (BCMA). The acquisition also included another early stage program.

The consideration included an initial payment of approximately 607 million Swiss Francs (CHF) (approximately $625 million at the time of acquisition), contingent development and regulatory milestones of up to CHF 150 million (approximately $155 million at the time of the acquisition) and contingent commercial milestones of up to CHF 2.3 billion (approximately $2.3 billion at the time of the acquisition) based on cumulative sales levels of between $1 billion and $40 billion. The acquisition of EngMab did not include any significant processes and thus, for accounting purposes, we have concluded that the acquired assets did not meet the definition of a business. The initial payment was allocated primarily to the EM901 molecule and another early stage program, resulting in a $623 million research

and development asset acquisition expense and $2 million of net working capital acquired.

Acetylon Pharmaceuticals, Inc. (Acetylon): On December 16, 2016, we acquired all of the remaining outstanding equity interests we did not already own (approximately 86%) in Acetylon, a privately held biotechnology company focused on developing next-generation selective small molecule histone deacetylase (HDAC) inhibitors, which allow for epigenetic regulation of gene and protein function. Acetylon's lead molecule, ACY-241 is a HDAC6 inhibitor in phase I trials for relapsed and/or refractory multiple myeloma. The acquisition also included another early stage molecule. Prior to the acquisition, we had an equity interest equal to approximately 14% of Acetylon's total capital stock with a carrying value of approximately $30 million.

The consideration transferred included an initial payment of approximately $196 million. In addition, the sellers of Acetylon are eligible to receive contingent regulatory milestones of up to $375 million per eligible product, contingent commercial milestones of up to $1.5 billion based on achieving annual net sales in excess of $1 billion and tiered royalties on annual net sales of eligible products. The acquisition did not include any significant processes and thus, for accounting purposes, we have concluded that the acquired assets did not meet the definition of a business. The initial payment and carrying value of our previous equity interest were allocated primarily to ACY-241 and another early stage molecule, resulting in a $226 million research and development asset acquisition expense.

Triphase Research and Development I Corporation (Triphase): On November 17, 2016, we acquired from Triphase Accelerator, L.P. (Sellers) all of the outstanding shares of Triphase by exercising the option we acquired on October 22, 2012. Triphase was a privately held, biotechnology company focusing on the development of marizomib for glioblastoma and relapsed and/or refractory multiple myeloma.

The consideration transferred was valued at approximately $42 million including the value of the exercised option of $18 million. In addition, the sellers are eligible to receive contingent development and regulatory milestones of up to $125 million, contingent commercial milestones of up to $300 million based on achieving annual net sales equal in excess of $1 billion and royalties on annual net sales. The acquisition did not include any significant processes and thus, for accounting purposes, we have concluded that the acquired assets did not meet the definition of a business. The consideration transferred was allocated primarily to the marizomib asset, resulting in a $44 million research and development asset acquisition expense and $1 million of net liabilities acquired.

Divestitures in 2016:

LifebankUSA: In February 2016, we completed the sale of certain assets of Celgene Cellular Therapeutics (CCT) comprising CCT's biobanking business known as LifebankUSA, CCT's biomaterials portfolio of assets, including Biovance®, and CCT's rights to PSC-100, a placental stem cell program, to Human Longevity, Inc. (HLI), a genomics and cell therapy-based diagnostic and therapeutic company based in San Diego, California. We received 3.4 million shares of HLI Class A common stock with a fair value of approximately $40 million as consideration in the transaction. The fair value of the shares common stock we received was determined based on the most recent preferred share offering and reduced for the estimated value of the liquidation preference not offered to common share-holders. The transaction generated a $38 million gain that was recorded on our Consolidated Statements of Income in Other income (expense), net. As of December 31, 2017, our total investment in HLI represents approximately 14% of HLI's outstanding capital stock.

Acquisitions in 2015:

Receptos, Inc. (Receptos): On August 27, 2015 (Acquisition Date), we acquired all of the outstanding common stock of Receptos, resulting in Receptos becoming our wholly-owned subsidiary. Receptos' lead drug candidate, ozanimod, is a small molecule that modulates sphingosine 1-phosphate 1 and 5 receptors and it is in development for immune-inflammatory indications, including inflammatory bowel disease and relapsing multiple sclerosis (RMS). The acquisition of Receptos also included RPC4046, an anti-interleukin-13 (IL-13) antibody in development for eosinophilic esophagitis (EoE), an allergic/immune-mediated orphan disease. RPC4046 was licensed from AbbVie Bahamas Ltd. and AbbVie Inc. (collectively referred to as AbbVie). The results of operations and cash flows for Receptos are included in our consolidated financial statements from the Acquisition Date and the assets and liabilities of Receptos have been recorded at their respective fair values on the Acquisition Date and consolidated with our assets and liabilities.

We paid approximately $7.6 billion, consisting of $7.3 billion for common stock outstanding and $315 million for the portion of equity compensation attributable to the pre-combination period. In addition, we paid $197 million for the portion of equity compensation attributable to the post-combination service period, which has been recorded as expense over the required service period ending in the fourth quarter of 2015.

The acquisition has been accounted for using the acquisition method of accounting which requires that assets acquired and liabilities assumed be recognized at their fair values as of the Acquisition Date and requires the fair value of acquired IPR&D to be classified as indefinite-lived assets until the successful completion or abandonment of the

associated research and development efforts.

The total consideration for the acquisition of Receptos is summarized as follows (in millions):

	Total Consideration
Cash paid for outstanding common stock	$ 7,311
Cash for equity compensation attributable to pre-combination service	315
Total consideration	$ 7,626

The purchase price allocation resulted in the following amounts being allocated to the assets acquired and liabilities assumed at the Acquisition Date based upon their respective fair values summarized below. During the fourth quarter of 2015, adjustments

were recorded to increase the amounts initially recorded for deferred tax assets, deferred tax liabilities and goodwill as of the Acquisition Date (in millions).

	Amounts Recognized as of the Acquisition Date
Working capital[1]	$ 479
Property, plant and equipment	5
In-process research and development product rights	6,842
Current deferred tax assets[2]	241
Other non-current assets	8
Non-current deferred tax liabilities[3]	(2,519)
Total identifiable net assets	5,056
Goodwill	2,570
Total net assets acquired	$ 7,626

[1] Includes cash and cash equivalents, available for sale marketable securities, other current assets, accounts payable, and accrued expenses and other current liabilities.
[2] Following adoption of Accounting Standards Update No. 2015-17, "Balance Sheet Classification of Deferred Taxes" in the fourth quarter of 2015 all deferred tax assets and liabilities and associated valuation allowances are classified as non-current.
[3] Upon integration of the acquired intangible assets into our offshore research, manufacturing, and commercial operations, the deferred tax liability was reclassified to a non-current tax liability. Upon enactment of the 2017 Tax Act, the non-current tax liability was reclassified to a deferred tax liability and remeasured for the change in tax rates.

The fair values of current and other non-current assets, current liabilities and property, plant and equipment were determined to approximate their book values.

The fair value assigned to acquired IPR&D was based on the present value of expected after-tax cash flows attributable to ozanimod, which is in phase II and III testing. The present value of expected after-tax cash flows attributable to ozanimod and assigned to IPR&D was determined by estimating the after-tax costs to complete development of ozanimod into a commercially viable product, estimating future revenue and ongoing expenses to produce, support and sell ozanimod, on an after-tax basis, and discounting the resulting net cash flows to present value. The revenue and costs projections used were reduced based on the probability that compounds at similar stages of development will become commercially viable products. The rate utilized to discount the net cash flows to their present value reflects the risk associated with the intangible asset and is benchmarked to the cost of equity. Acquired IPR&D will be accounted for as an indefinite-lived intangible asset until regulatory approval in a major market or discontinuation of development.

The excess of purchase price over the fair value amounts assigned to identifiable assets acquired and liabilities assumed represents the goodwill amount resulting from the acquisition. The goodwill recorded as part of the acquisition is primarily attributable to the broadening of our product portfolio and research capabilities in the inflammation and immunology therapeutic area, the assembled workforce and the deferred tax consequences of the IPR&D asset recorded for financial statement purposes. We do not expect any portion of this goodwill to be deductible for tax purposes. The goodwill attributable to the acquisition has been recorded as a non-current asset in our Consolidated Balance Sheets and is not amortized, but is subject to review for impairment annually.

From the Acquisition Date through December 31, 2015, our Consolidated Statements of Income included expenses of $381 million associated with the acquisition and operations of Receptos as follows[1] (in millions):

Statements of Income Location	Acquisition Date Through December 31, 2015
Research and development	$ 79
Selling, general and administrative	5
Acquisition related charges and restructuring, net [2]	297
Total	$ 381

[1] In addition, Celgene incurred $20 million of acquisition related costs prior to the acquisition date.

[2] Consists of acquisition-related compensation expense and transaction costs.

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Pro Forma Financial Information:
The following table provides unaudited pro forma financial information for the twelve-month periods ended December 31, 2015 as if the acquisition of Receptos had occurred on January 1, 2014 (in millions).

	Twelve-Month Periods Ended December 31, 2015
Total revenue	$ 9,256
Net income	$ 1,631
Net income per common share: basic	$ 2.06
Net income per common share: diluted	$ 1.98

The unaudited pro forma financial information was prepared using the acquisition method of accounting and was based on the historical financial information of Celgene and Receptos. The pro-forma financial information assumes that the acquisition-related transaction fees and costs incurred were removed from the twelve-month period ended December 31, 2015 and were assumed to have been incurred during the first quarter of 2014. The unaudited pro forma results do not reflect any operating efficiencies or potential cost savings that may result from the combined operations of Celgene and Receptos. Accordingly, these unaudited pro forma results are presented for illustrative purposes and are not intended to represent or be indicative of the actual results of operations of the combined company that would have been achieved had the acquisition occurred at the beginning of the period presented, nor are they intended to represent or be indicative of future results of operations.

Quanticel Pharmaceuticals, Inc. (Quanticel): On October 19, 2015, we completed our acquisition of Quanticel, a privately held biotechnology company focused on cancer drug discovery, for consideration consisting of $96 million in cash at closing plus contingent consideration consisting of future payments of up to $385 million for achieving specified discovery and development targets. We had a research collaboration arrangement with Quanticel since 2011. Through this purchase, Quanticel has become our wholly-owned subsidiary, and we will benefit from full access to Quanticel’s proprietary platform for the single-cell genomic analysis of human cancer, as well as Quanticel’s programs that target specific epigenetic modifiers, which we expect will advance our pipeline of innovative cancer therapies.

The acquisition was accounted for using the acquisition method of accounting for business combinations which requires the assets and liabilities of Quanticel to be recorded at their respective fair values on the acquisition date and consolidated into our Consolidated Balance Sheets. The results of operations and cash flows for Quanticel have been included in our consolidated financial statements from the date of acquisition. Pro-forma results of operations for this acquisition have not been presented because this acquisition is not material to our consolidated results of operations.

Fair value amounts allocated to contingent consideration and goodwill presented below have been reduced by $11 million during 2016. These measurement period adjustments were not significant and did not have a significant impact on our financial condition, results of operations or cash flows.

The fair value of consideration transferred in the acquisition of Quanticel is shown in the table below (in millions):

	Fair Value at October 19, 2015 (as

	adjusted)
Cash	$ 96
Fair value of pre-existing equity ownership	12
Contingent consideration	155
Total fair value of consideration	$ 263

Prior to the acquisition of Quanticel, we had an equity interest equal to approximately 5% of the company's total capital stock (on an "as converted" basis). Based on the fair market value of this interest derived from the purchase price, we recognized a gain of $10 million, which was reflected as a component of Other income (expense), net within our Consolidated Statement of Income for the year ended December 31, 2015.

Our potential contingent consideration payments are classified as liabilities, which were measured at fair value as of the acquisition date. We estimated the fair value of potential contingent consideration using a probability-weighted discounted cash flow approach, which reflects the probability and timing of future potential payments. This fair value measurement is based on significant inputs

that are not observable in the market and thus represents a level three liability within the fair value hierarchy. The resulting probability-weighted cash flows were discounted using a discount rate based on a market participant assumption. See Note 4 for post-acquisition changes in fair value. The purchase price allocation resulted in the following amounts being allocated to the assets acquired and liabilities assumed at the acquisition date based upon their respective fair values summarized below (in millions):

	Fair Value at October 19, 2015 (as adjusted)
Working capital[1]	$ 7
Property, plant and equipment	2
Other non-current assets	1
Technology platform intangible asset[2]	232
Debt obligations	(14)
Non-current deferred tax liabilities	(72)
Total identifiable net assets	156
Goodwill	107
Total net assets acquired	$ 263

[1] Includes cash and cash equivalents, available-for-sale marketable securities, other current assets, accounts payable and accrued expenses and other current liabilities.
[2] Technology platform related to Quanticel's proprietary technology platform for the single-cell genomic analysis of human cancer.

The fair values of current and other non-current assets, property, plant and equipment, current liabilities and debt were determined to approximate their book values.

The fair value of the technology platform intangible asset is equal to the present value of the after-tax cash flows attributable to the intangible asset, which was calculated based on the multi-period excess earnings method of the income approach. The multi-period excess earnings method of the income approach included estimating probability adjusted annual after-tax net cash flows through the cycle of development and commercialization of potential products generated by the technology platform then discounting the resulting probability adjusted net post-tax cash flows using a discount rate commensurate with the risk of our overall business operations to arrive at the net present value.

The excess of purchase price over the fair value amounts assigned to the identifiable assets acquired and liabilities assumed represents the goodwill amount resulting from the acquisition. The goodwill recorded as part of the acquisition is largely attributable to the deferred tax consequences of the finite-lived technology platform intangible asset recorded for financial statement purposes, as well as intangible assets that do not qualify for separate recognition at the time of the acquisition. We do not expect any portion of this goodwill to be deductible for tax purposes. Goodwill attributable to the acquisition has been recorded as a non-current asset in our Consolidated Balance Sheets and is not amortized, but is subject to review for impairment annually.

3. Earnings Per Share

(Amounts in millions, except per share)

	2017	2016	2015

Net income	$2,940	$1,999	$1,602
Weighted-average shares:			
Basic	779.2	777.2	792.2
Effect of dilutive securities:			
Options, RSUs, PSUs, warrants and other	29.5	26.1	32.7
Diluted	808.7	803.3	824.9
Net income per share:			
Basic	$3.77	$2.57	$2.02
Diluted	$3.64	$2.49	$1.94

The total number of potential shares of common stock excluded from the diluted earnings per share computation because their inclusion would have been anti-dilutive was 24.5 million in 2017, 23.8 million in 2016 and 14.1 million in 2015.

Share Repurchase Program: During the period of April 2009 through December 2017, our Board of Directors approved repurchases of up to an aggregate of $20.5 billion of our common stock.

As part of the management of our share repurchase program, we may, from time to time, sell put options on our common stock with strike prices that we believe represent an attractive price to purchase our shares. If the trading price of our shares exceeds the strike price of the put option at the time the option expires, we will have economically reduced the cost of our share repurchase program by the amount of the premium we received from the sale of the put option. If the trading price of our stock is below the strike price of the put option at the time the option expires, we would purchase the shares covered by the option at the strike price of the put option. During 2017, we did not sell any put options on our common stock. During 2016 and 2015, we recorded net gains of $8 million, and net losses of $10 million, respectively, from selling put options on our common stock on the Consolidated Statements of Income in Other income (expense), net. As of December 31, 2017, we had no outstanding put options.

We repurchased 36.7 million shares of common stock under the program from all sources during 2017 at a total cost of $3.9 billion. As of December 31, 2017, we had a remaining open-ended repurchase authorization of approximately $822 million.

4. Financial Instruments and Fair Value Measurement

The table below presents information about assets and liabilities that are measured at fair value on a recurring basis as of December 31, 2017 and 2016, and the valuation techniques we utilized to determine such fair value.

- Level 1 inputs utilize quoted prices (unadjusted) in active markets for identical assets or liabilities. Our level 1 assets consist of marketable equity securities. Our level 1 liability relates to our publicly traded CVRs. See Note 18 for a description of the CVRs.

- Level 2 inputs utilize observable quoted prices for similar assets and liabilities in active markets and observable quoted prices for identical or similar assets in markets that are not very active. Our level 2 assets consist primarily of U.S. Treasury securities, U.S. government-sponsored agency securities, U.S. government-sponsored agency MBS, global corporate debt securities, asset backed securities, ultra short income fund investments, time deposits and repurchase agreements with original maturities of greater than three months, foreign currency forward contracts, purchased foreign currency options and interest rate swap contracts. Our level 2 liabilities relate to written foreign currency options, foreign currency forward contracts and interest rate swap contracts.

- Level 3 inputs utilize unobservable inputs and include valuations of assets or liabilities for which there is little, if any, market activity. We do not have any level 3 assets. Our level 3 liabilities consist of contingent consideration related to undeveloped product rights and technology platforms resulting from the acquisitions of Gloucester Pharmaceuticals, Inc. (Gloucester), Nogra Pharma Limited (Nogra), Avila Therapeutics, Inc. (Avila) and Quanticel.

Our contingent consideration obligations are recorded at their estimated fair values and we revalue these obligations each reporting period until the related contingencies are resolved. The fair value measurements are estimated using probability-weighted discounted cash flow approaches that are based on significant unobservable inputs related to product candidates acquired in business combinations and are reviewed quarterly. These inputs include, as applicable, estimated probabilities and timing of achieving specified development and regulatory milestones, estimated annual sales and the discount rate used to calculate the present value of estimated future payments. Significant changes which increase or decrease the probabilities of achieving the related development and regulatory events, shorten or lengthen the time required to achieve such events, or increase or decrease estimated annual sales would result in corresponding increases or decreases in the fair values of these obligations. Changes in the fair value of contingent consideration

obligations are recognized in Acquisition related (gains) charges and restructuring, net in the Consolidated Statements of Income. The fair value of our contingent consideration as of December 31, 2017 and December 31, 2016 was calculated using the following significant unobservable inputs:

Inputs	Ranges (weighted average) utilized as of:	
	December 31, 2017	December 31, 2016
Discount rate	2.7 to 12.0% (3.5%)	1.5% to 12.0% (8.6%)
Probability of payment	0% to 20% (4%)	0% to 95% (42%)
Projected year of payment for development and regulatory milestones	2020 to 2029 (2024)	2017 to 2029 (2019)
Projected year of payment for sales-based milestones and other amounts calculated as a percentage of annual sales	2024 to 2030 (2028)	2019 to 2033 (2024)

CELGENE CORPORATION AND SUBSIDIARIES
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The maximum remaining potential payments related to the contingent consideration from the acquisitions of Gloucester, Avila and Quanticel are estimated to be $120 million, $475 million and $276 million, respectively, and $1.8 billion plus other amounts calculated as a percentage of annual sales pursuant to the license agreement with Nogra.

	Balance at December 31, 2017	Quoted Price in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Assets:				
Available-for-sale securities	$ 5,029	$ 1,810	$ 3,219	$ —
Purchased currency options	36	—	36	—
Total assets	$ 5,065	$ 1,810	$ 3,255	$ —
Liabilities:				
Contingent value rights	$ (42)	$ (42)	$ —	$ —
Forward currency contracts	(42)	—	(42)	—
Interest rate swaps	(7)	—	(7)	—
Written currency options	(172)	—	(172)	—
Other acquisition related contingent consideration	(80)	—	—	(80)
Total liabilities	$ (343)	$ (42)	$ (221)	$ (80)

	Balance at December 31, 2016	Quoted Price in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Assets:				
Available-for-sale securities	$ 1,800	$ 891	$ 909	$ —
Forward currency contracts	379	—	379	—
Purchased currency options	140	—	140	—
Interest rate swaps	31	—	31	—
Total assets	$ 2,350	$ 891	$ 1,459	$ —
Liabilities:				
Contingent value rights	$ (44)	$ (44)	$ —	$ —
Written currency options	(54)	—	(54)	—
Other acquisition related contingent consideration	(1,490)	—	—	(1,490)
Total liabilities	$ (1,588)	$ (44)	$ (54)	$ (1,490)

There were no security transfers between levels 1, 2 and 3 during the years ended December 31, 2017 and 2016. The following tables represent a roll-forward of the fair value of level 3 instruments:

	Year Ended December 31, 2017				
Liabilities:	Gloucester	Nogra	Avila	Quanticel	Total

Balance as of December 31, 2016	$(21)	$(1,346)	$(8)	$(115)	$(1,490)
Net change in fair value	(1)	1,340	5	4	1,348
Settlements, including transfers to Accrued expenses and other current liabilities	—	—	—	62	62
Balance as of December 31, 2017	$(22)	$(6)	$(3)	$(49)	$(80)

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	Year Ended December 31, 2016				
Liabilities:	Gloucester	Nogra	Avila	Quanticel	Total
Balance as of December 31, 2015	$(19)	$(1,239)	$(97)	$ (167)	$(1,522)
Amounts acquired or issued, including measurement period adjustments	—	—	—	11	11
Net change in fair value	(2)	(107)	89	(9)	(29)
Settlements, including transfers to Accrued expenses and other current liabilities	—	—	—	50	50
Balance as of December 31, 2016	$(21)	$(1,346)	$(8)	$ (115)	$(1,490)

Discontinuance of Certain GED-0301 Phase III Trials: On October 19, 2017, we announced our decision to discontinue the GED-0301 phase III REVOLVE (CD-002) trial in Crohn's disease (CD) and the SUSTAIN (CD-004) extension trial (the Trials). At that time, we concluded we would record a significant impairment of our GED-0301 IPR&D asset, incur wind-down costs associated with discontinuing the Trials and certain development activities, and record a benefit related to the significant reduction of GED-0301 contingent consideration liabilities. At the date GED-0301 was acquired by Celgene, a phase II trial of GED-0301 in patients with active CD had been completed and a multi-year clinical program designed to support global registrations of GED-0301 in CD was planned, while other indications were not as advanced. As such, substantially all of the IPR&D asset and contingent consideration liabilities were attributed to the development and commercialization of GED-0301 for the treatment of CD. As a result of the discontinuance of the Trials, the Company recorded a net pre-tax charge to earnings of approximately $411 million during the fourth quarter of 2017. The net pre-tax charge was comprised of the following:

- An impairment charge relating to the entire GED-0301 IPR&D asset of approximately $1,620 million;
- Other one-time charges of approximately $188 million that will require cash payments primarily related to wind-down costs associated with discontinuing the Trials and certain development activities; and
- A reduction in contingent consideration liabilities of approximately $1,397 million related to GED-0301.

5. Derivative Instruments and Hedging Activities

During the third quarter of 2017, we adopted ASU 2017-12. Among other provisions, the new standard required modifications to existing presentation and disclosure requirements on a prospective basis. As such, certain disclosures for the fiscal year ended December 31, 2016 below conform to the disclosure requirements prior to the adoption of ASU 2017-12. See Note 1 for additional information related to the adoption of ASU 2017-12.

Our revenue and earnings, cash flows and fair values of assets and liabilities can be impacted by fluctuations in foreign exchange rates and interest rates. We actively manage the impact of foreign exchange rate and interest rate movements through operational means and through the use of various financial instruments, including derivative instruments such as foreign currency option contracts, foreign currency forward contracts, treasury rate lock agreements and interest rate swap contracts. In instances where these financial instruments are accounted for as cash flow hedges or fair value hedges we may from time to time terminate the hedging relationship. If a hedging relationship is terminated we generally either settle the instrument or enter into an offsetting instrument.

Foreign Currency Risk Management

We maintain a foreign exchange exposure management program to mitigate the impact of volatility in foreign exchange rates on future foreign currency cash flows, translation of foreign earnings and changes in the fair value of assets and liabilities denominated in foreign currencies.

Through our revenue hedging program, we endeavor to reduce the impact of possible unfavorable changes in foreign exchange rates on our future U.S. Dollar cash flows that are derived from foreign currency denominated sales. To achieve this objective, we hedge a portion of our forecasted foreign currency denominated sales that are expected to occur in the foreseeable future, typically within the next three years, with a maximum of five years. We manage our anticipated transaction exposure principally with foreign currency forward contracts, a combination of foreign currency put and call options, and occasionally purchased foreign currency put options.

Foreign Currency Forward Contracts: We use foreign currency forward contracts to hedge specific forecasted transactions denominated in foreign currencies, manage exchange rate volatility in the translation of foreign earnings, and reduce exposures to foreign currency fluctuations of certain assets and liabilities denominated in foreign currencies.

We manage a portfolio of foreign currency forward contracts to protect against changes in anticipated foreign currency cash flows resulting from changes in foreign currency exchange rates, primarily associated with non-functional currency denominated revenues and expenses of foreign subsidiaries. The foreign currency forward hedging contracts outstanding as of December 31, 2017 and December 31, 2016 had settlement dates within 20 months and 31 months, respectively. The spot rate components of these foreign currency forward contracts are designated as cash flow hedges and any unrealized gains or losses are reported in other comprehensive income (OCI) and reclassified to the Consolidated Statements of Income in the same periods during which the underlying hedged transactions affect earnings. If a hedging relationship is terminated with respect to a foreign currency forward contract, accumulated gains or losses associated with the contract remain in OCI until the hedged forecasted transaction occurs and are reclassified to operations in the same periods during which the underlying hedged transactions affect earnings. Prior to the adoption of ASU 2017-12, the forward point components of these foreign currency forward contracts were excluded from assessing effectiveness of the hedging relationship and all fair value adjustments of forward point amounts were recorded on the Consolidated Statements of Income in Other income (expense), net. Upon adoption of ASU 2017-12, we recognize in earnings the initial value of the forward point components on a straight-line basis over the life of the derivative instrument within the same line item in the Consolidated Statements of Income that is used to present the earnings effect of the hedged item. See Note 1 for additional information related to the adoption of ASU 2017-12.

Foreign currency forward contracts entered into to hedge forecasted revenue and expenses were as follows as of December 31, 2017 and December 31, 2016:

	Notional Amount	
Foreign Currency:	2017	2016
Australian Dollar	$61	$49
British Pound	97	199
Canadian Dollar	227	193
Euro	954	1,812
Japanese Yen	356	597
Total	$1,695	$2,850

We consider the impact of our own and the counterparties' credit risk on the fair value of the contracts as well as the ability of each party to execute its obligations under the contract on an ongoing basis. As of December 31, 2017, credit risk did not materially change the fair value of our foreign currency forward contracts.

We also manage a portfolio of foreign currency contracts to reduce exposures to foreign currency fluctuations of certain recognized assets and liabilities denominated in foreign currencies and, from time to time, we enter into foreign currency contracts to manage exposure related to translation of foreign earnings. These foreign currency forward contracts have not been designated as hedges and, accordingly, any changes in their fair value are recognized on the Consolidated Statements of Income in Other (expense), net in the current period. The aggregate notional amount of the foreign currency forward non-designated hedging contracts outstanding as of December 31, 2017 and December 31, 2016 were $885 million and $934 million, respectively.

Foreign Currency Option Contracts: From time to time, we may hedge a portion of our future foreign currency exposure by utilizing a strategy that involves both a purchased local currency put option and a written local currency call option that are accounted for as hedges of future sales denominated in that local currency. Specifically, we sell (or write) a local currency call option and purchase a local currency put option with the same expiration dates and local

currency notional amounts but with different strike prices. This combination of transactions is generally referred to as a “collar.” The expiration dates and notional amounts correspond to the amount and timing of forecasted foreign currency sales. The foreign currency option contracts outstanding as of December 31, 2017 and December 31, 2016 had settlement dates within 36 months and 48 months, respectively. If the U.S. Dollar weakens relative to the currency of the hedged anticipated sales, the purchased put option value reduces to zero and we benefit from the increase in the U.S. Dollar equivalent value of our anticipated foreign currency cash flows; however, this benefit would be capped at the strike level of the written call, which forms the upper end of the collar. The premium collected from the sale of the call option is equal to the premium paid for the purchased put option, resulting in a net zero cost for each collar.

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NOTES TO CONSOLIDATED FINANCIAL STATEMENTS – (Continued)

Outstanding foreign currency option contracts entered into to hedge forecasted revenue were as follows as of December 31, 2017 and December 31, 2016:

	Notional Amount[1]	
	2017	2016
Foreign currency option contracts designated as hedging activity:		
Purchased Put	$3,319	$1,790
Written Call	3,739	2,009

[1] U.S. Dollar notional amounts are calculated as the hedged local currency amount multiplied by the strike value of the foreign currency option. The local currency notional amounts of our purchased put and written call that are designated as hedging activities are equal to each other.

We also have entered into foreign currency put option contracts to hedge forecasted revenue which were not part of a collar strategy. Such put option contracts had a notional value of $258 million and $387 million as of December 31, 2017 and December 31, 2016, respectively, and settlement dates within 12 months and 24 months, respectively.

Interest Rate Risk Management

Forward Starting Interest Rate Swaps and Treasury Rate Locks: In anticipation of issuing fixed-rate debt, we may use forward starting interest rate swaps (forward starting swaps) or treasury rate lock agreements (treasury rate locks) that are designated as cash flow hedges to hedge against changes in interest rates that could impact expected future issuances of debt. To the extent these hedges of cash flows related to anticipated debt are effective, any realized or unrealized gains or losses on the forward starting swaps or treasury rate locks are reported in OCI and are recognized in income over the life of the anticipated fixed-rate notes.

We have entered into swap contracts that were designated as hedges of certain of our fixed rate notes in 2017 and 2016 and also terminated the hedging relationship by settling certain of those swap contracts during 2017. During 2017, we settled $500 million notional amount of certain swap contracts, and then subsequently entered into new $500 million notional amount swap contracts. We terminated the hedging relationship on those certain outstanding swap contracts amounting to $500 million notional amount by settling such swap contracts. The net settlement and termination of those swap contracts resulted in a net loss of approximately $4 million. See Note 11 for additional details related to reductions of current and future interest expense. Additionally, we re-designated $500 million 10-year notional amount forward starting swaps to certain of our 30-year outstanding fixed rate notes, resulting in a gain of approximately $29 million. In addition, in 2017, we entered into and then subsequently settled, $500 million notional treasury locks on 30-year debt, resulting in a loss of approximately $2 million.

We had outstanding forward starting swaps with effective dates in 2017 and 2018 and maturing in ten years that were designated as cash flow hedges with notional amounts as shown in the table below:

	Notional Amount	
	2017	2016
Forward starting interest rate swap contracts:		
Forward starting swaps with effective dates in 2017	$—	$500
Forward starting swaps with effective dates in 2018	—	500

Interest Rate Swap Contracts: From time to time we hedge the fair value of certain debt obligations through the use of interest rate swap contracts. The interest rate swap contracts are designated hedges of the fair value changes in the notes attributable to changes in benchmark interest rates. Gains or losses resulting from changes in fair value of the underlying debt attributable to the hedged benchmark interest rate risk are recorded on the Consolidated Statement of Income within Interest (expense) with an associated offset to the carrying value of the notes recorded on the

Consolidated Balance Sheet. Since the specific terms and notional amount of the swap are intended to match those of the debt being hedged all changes in fair value of the swap are recorded on the Consolidated Statement of Income within Interest (expense) with an associated offset to the derivative asset or liability on the Consolidated Balance Sheet. Consequently, there is no net impact recorded in income. Any net interest payments made or received on interest rate swap contracts are recognized as interest expense on the Consolidated Statement of Income. If a hedging relationship is terminated for an interest rate swap contract, accumulated gains or losses associated with the contract are measured and recorded as a reduction or increase of current and future interest expense associated with the previously hedged debt obligations.

CELGENE CORPORATION AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS – (Continued)

The following table summarizes the notional amounts of our outstanding interest rate swap contracts as of December 31, 2017 and December 31, 2016:

	Notional Amount	
	2017	2016
Interest rate swap contracts entered into as fair value hedges of the following fixed-rate senior notes:		
3.875% senior notes due 2025	$200	$200
3.450% senior notes due 2027	250	—
Total	$450	$200

We have entered into swap contracts that were designated as hedges of certain of our fixed rate notes in 2017 and 2016 and also terminated the hedging relationship by settling certain of those swap contracts during 2017 and 2016. In 2017, we terminated the hedging relationship on certain outstanding swap contracts amounting to $200 million notional amount by settling such swap contracts. In July 2016, we terminated the hedging relationship on all of our then outstanding swap contracts, amounting to $3.6 billion notional amount, by settling such swap contracts. The settlement of swap contracts resulted in the receipt of net proceeds of $3 million and $196 million during the years ended December 31, 2017 and 2016, respectively, which are accounted for as a reduction of current and future interest expense associated with these notes. See Note 11 for additional details related to reductions of current and future interest expense.

The following table summarizes the fair value and presentation in the Consolidated Balance Sheets for derivative instruments as of December 31, 2017 and 2016:

Instrument	Balance Sheet Location	December 31, 2017 Fair Value Asset Derivatives	Liability Derivatives
Derivatives designated as hedging instruments:			
Foreign exchange contracts[1]	Other current assets	$ 5	$ 1
	Accrued expense and other current liabilities	30	79
	Other non-current assets	1	—
	Other non-current liabilities	36	159
Interest rate swap agreements	Other current assets	3	—
	Other non-current liabilities	—	11
Derivatives not designated as hedging instruments:			
Foreign exchange contracts[1]	Other current assets	8	1
	Accrued expenses and other current liabilities	4	22
Interest rate swap agreements	Other current assets	2	2
	Other non-current assets	4	3
Total		$ 93	$ 278

[1] Derivative instruments in this category are subject to master netting arrangements and are presented on a net basis on the Consolidated Balance Sheets in accordance with ASC 210-20.

CELGENE CORPORATION AND SUBSIDIARIES
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Instrument	Balance Sheet Location	December 31, 2016 Fair Value Asset Derivatives	Liability Derivatives
Derivatives designated as hedging instruments:			
Foreign exchange contracts[1]	Other current assets	$ 317	$ 10
	Other non-current assets	178	71
Interest rate swap agreements	Other current assets	1	—
	Other non-current assets	38	7
	Other non-current liabilities	—	2
Derivatives not designated as hedging instruments:			
Foreign exchange contracts[1]	Other current assets	57	4
	Accrued expenses and other current liabilities	—	2
Interest rate swap agreements	Other current assets	2	2
	Other non-current assets	3	2
Total		$ 596	$ 100

[1] Derivative instruments in this category are subject to master netting arrangements and are presented on a net basis in the Consolidated Balance Sheets in accordance with ASC 210-20.

As of December 31, 2017 and December 31, 2016, the following amounts were recorded on the Consolidated Balance Sheet related to cumulative basis adjustments for fair value hedges:

Consolidated Balance Sheet Classification in Which the Hedged Item Is Included	Carrying Amount of the Hedged Liability		Cumulative Amount of Fair Value Hedging Adjustment Included in the Carrying Amount of the Hedged Liability	
	December 31, 2017[1]	December 31, 2016[1]	December 31, 2017[2]	December 31, 2016[2]
Current portion of long-term debt, net of discount	$ —	$ 501	$ —	$ 1
Long-term debt, net of discount	7,270	6,703	128	163

(1) The current portion of long-term debt, net of discount includes $501 million of carrying value with discontinued hedging relationships as of December 31, 2016. The long-term debt, net of discount includes approximately $3.8 billion and $4.2 billion of carrying value with discontinued hedging relationships as of December 31, 2017 and December 31, 2016, respectively.

(2) The current portion of long-term debt, net of discount includes $1 million of hedging adjustments on discontinued hedging relationships as of December 31, 2016. The long-term debt, net of discount includes $139 million and $172 million of hedging adjustment on discontinued hedging relationships on long-term debt as of December 31, 2017 and December 31, 2016, respectively.

The following tables summarizes the effect of derivative instruments designated as cash-flow hedging instruments in Accumulated OCI for the years ended December 31, 2017 and 2016:

	2017				
Instrument	Amount of Gain/(Loss) Recognized in OCI on Derivative[2]	Classification of Gain/(Loss) Reclassified from Accumulated OCI[1] into Income	Amount of Gain/(Loss) Reclassified from Accumulated OCI into Income	Classification of Gain/(Loss) Recognized in Income Related to Amount Excluded from Effectiveness Testing	Amount of Gain/(Loss) Recognized in Income on Derivative Related to Amount Excluded from Effectiveness Testing
Foreign exchange contracts	$(419)	Net product sales	$ 184	Net product sales	$ (3)
Treasury rate lock agreements	(2)	Interest (expense)	(5)	N/A	
Forward starting interest rate swaps	(13)	Interest (expense)	(1)	N/A	

[1] Net losses of $76 million are expected to be reclassified from Accumulated OCI into income in the next 12 months.

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2 For the year ended December 31, 2017, the straight-line amortization of the initial value of the amount excluded from the assessment of hedge effectiveness for our foreign exchange contracts recognized in OCI was a loss of $15 million of which $18 million related to the cumulative effect adjustment related to the adoption of ASU 2017-12. There were no excluded components for out treasury rate lock and interest rate swap agreements.

	2016				
	(Effective Portion)			(Ineffective Portion and Amount Excluded From Effectiveness Testing)	
Instrument	Amount of Gain/(Loss) Recognized in OCI on Derivative	Classification of Gain/(Loss) Reclassified from Accumulated OCI into Income	Amount of Gain/(Loss) Reclassified from Accumulated OCI into Income	Classification of Gain/(Loss) Recognized in Income on Derivative	Amount of Gain/(Loss) Recognized in Income on Derivative
Foreign exchange contracts	$109	Net product sales	$ 307	Other income, net	$ 19 (1)
Treasury rate lock agreements	$—	Interest expense	$ (5)	Other income, net	$ —
Forward starting interest rate swaps	$36	Interest expense	$ (2)	Other income, net	$ —

1 The amount of net gains recognized in income represents $17 million of gains related to amounts excluded from the assessment of hedge effectiveness (fair value adjustments of forward point amounts) and $2 million in gains related to the ineffective portion of the hedging relationships.

The following table summarizes the effect of derivative instruments designated as fair value hedging instruments on the Consolidated Statements of Income for the years ended December 31, 2017 and 2016:

Instrument	Classification of Gain Recognized in Income on Derivative	Amount of Gain Recognized in Income on Derivative	
		2017 [1]	2016 [1]
Interest rate swaps	Interest (expense)	35	$ 45

1 The amounts include a benefit of $35 million and $20 million relating to the amortization of the cumulative amount of fair value hedging adjustments included in the carrying amount of the hedged liability for discontinued hedging relationships for the years ending December 31, 2017 and December 31, 2016, respectively.

The following table summarizes the effect of derivative instruments not designated as hedging instruments on the Consolidated Statements of Income for the years ended December 31, 2017 and 2016:

Instrument	Classification of (Loss) Gain Recognized in Income on Derivative	Classification of (Loss) Gain Recognized in Income on Derivative	
		2017	2016

Foreign exchange contracts	Other income (expense), net	$ (52)	$ 21
Put options sold	Other income (expense), net	—	8

The impact of gains and losses on foreign exchange contracts not designated as hedging instruments related to changes in the fair value of assets and liabilities denominated in foreign currencies are generally offset by net foreign exchange gains and losses, which are also included on the Consolidated Statements of Income in Other income (expense), net for all periods presented. When we enter into foreign exchange contracts not designated as hedging instruments to mitigate the impact of exchange rate volatility in the translation of foreign earnings, gains and losses will generally be offset by fluctuations in the U.S. Dollar translated amounts of each Income Statement account in current and/or future periods.

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	Classification and Amount of Gain or (Loss) Recognized in Income on Fair Value and Cash Flow Hedging Relationships 2017		
	Net product sales	Interest (expense)	Other income (expense), net
Total amounts of income and expense line items presented in the Consolidated Statements of Income in which the effects of fair value or cash flow hedges are recorded	$12,973	$ (522)	$ 24
The effects of fair value and cash flow hedging:			
Gain (loss) on fair value hedging relationships			
Interest rate swap agreements:			
Hedged items	—	2	—
Derivatives designated as hedging instruments [1]	—	35	—
Gain (loss) on cash flow hedging relationships			
Foreign exchange contracts:			
Amount of gain or (loss) reclassified from AOCI into income	184	—	—
Amount excluded from effectiveness testing recognized using a systematic and rational amortization approach / changes in fair value	15	—	—
Reclassification adjustment for excluded component (loss) gain	(18)	—	—
Treasury rate lock agreements:			
Amount of gain or (loss) reclassified from AOCI into income	—	(5)	—
Interest rate swap agreements:			
Amount of gain or (loss) reclassified from AOCI into income	—	(1)	—

[1] The amounts include a benefit of $35 million relating to the amortization of the cumulative amount of fair value hedging adjustments included in the carrying amount of the hedged liability for discontinued hedging relationships for the year ended December 31, 2017.

6. Cash, Cash Equivalents and Marketable Securities Available-for-Sale

Time deposits, repurchase agreements, and commercial paper instruments with original maturities less than three months and money market funds are included in Cash and cash equivalents. As of December 31, 2017, the carrying value of our time deposits and repurchase agreements was $1.2 billion, commercial paper instruments was $35 million, and money market funds was $4.5 billion, all of which are included in Cash and cash equivalents. As of December 31, 2016, the carrying value of our time deposits and repurchase agreements was $2.8 billion, commercial paper instruments was $65 million, and money market funds was $1.6 billion, all of which were included in Cash and cash equivalents. The carrying values approximated fair value as of December 31, 2017 and December 31, 2016.

The amortized cost, gross unrealized holding gains, gross unrealized holding losses and estimated fair value of available-for-sale securities by major security type and class of security as of December 31, 2017 and 2016 were as follows:

December 31, 2017	Amortized Cost	Gross Unrealized Gain	Gross Unrealized Loss	Estimated Fair Value
U.S. Treasury securities	$ 445	$ —	$ (3)	$ 442
U.S. government-sponsored agency securities	42	—	—	42
U.S. government-sponsored agency MBS	17	—	—	17
Corporate debt - global	2,080	—	(5)	2,075
Asset backed securities	203	—	(1)	202
Ultra short income fund	352	—	—	352
Time deposits[(1)] and Repurchase agreements[(1)]	89	—	—	89
Marketable equity securities	935	881	(6)	1,810
Total available-for-sale marketable securities	$ 4,163	$ 881	$ (15)	$ 5,029

CELGENE CORPORATION AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS – (Continued)

December 31, 2016	Amortized Cost	Gross Unrealized Gain	Gross Unrealized Loss	Estimated Fair Value
U.S. Treasury securities	$ 121	$ —	$ (1)	$ 120
U.S. government-sponsored agency MBS	31	—	—	31
Corporate debt - global	378	—	(1)	377
Asset backed securities	17	—	—	17
Time deposits[1]	364	—	—	364
Marketable equity securities	672	238	(19)	891
Total available-for-sale marketable securities	$ 1,583	$ 238	$ (21)	$ 1,800

[1] Have original maturities of greater than three months.

U.S. Treasury securities include government debt instruments issued by the U.S. Department of the Treasury. U.S. government-sponsored agency securities include general unsecured obligations either issued directly by or guaranteed by U.S. government sponsored enterprises. U.S. government-sponsored agency MBS include mortgage-backed securities issued by the Federal National Mortgage Association, the Federal Home Loan Mortgage Corporation and the Government National Mortgage Association. Corporate debt-global includes obligations issued by investment-grade corporations, including some issues that have been guaranteed by governments and government agencies. Asset backed securities consist of triple-A rated securities with cash flows collateralized by credit card receivables and auto loans. Ultra short income fund includes investments in certificates of deposit, repurchase agreements, commercial paper and corporate notes. Time deposits and repurchase agreements in the tables above have original maturities greater than three months. Our repurchase agreements are collateralized by U.S. government securities, cash, bonds, commercial paper and bank certificates of deposit. As of December 31, 2017, all of our time deposits and repurchase agreements had original maturities less than one year. Marketable equity securities consist of investments in publicly traded equity securities.

During the fourth quarter of 2016, we recorded an expense of $272 million to reclassify the unrealized loss in OCI related to our holding of Juno Therapeutics, Inc. (Juno) common shares due to a decline in the underlying fair value of the securities, which we concluded to be other-than-temporary. The adjustment reflects Juno’s share price as of December 31, 2016 and is included on the Consolidated Statement of Income in Other income (expense), net.

The fair value of all available-for-sale securities, which have been in an unrealized loss position for less than and longer than 12 months as of December 31, 2017, was as follows:

	Less than 12 months		12 months or longer		Total	
December 31, 2017	Estimated Fair Value	Gross Unrealized Loss	Estimated Fair Value	Gross Unrealized Loss	Estimated Fair Value	Gross Unrealized Loss
U.S. Treasury securities	$411	$ (3)	$31	$ —	$442	$ (3)
U.S. government-sponsored agency securities	42	—	—	—	42	—
U.S. government-sponsored agency MBS	2	—	14	—	16	—
Corporate debt - global	1,391	(5)	22	—	1,413	(5)
Asset backed securities	175	—	4	(1)	179	(1)
Marketable equity securities	16	(6)	—	—	16	(6)
Total	$2,037	$ (14)	$71	$ (1)	$2,108	$ (15)

We believe that the remaining decline in fair value of securities held as of December 31, 2017 below their cost is temporary and intend to retain our investment in these securities for a sufficient period of time to allow for recovery in the market value of these investments.

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Duration periods of available-for-sale debt securities as of December 31, 2017 were as follows:

	Amortized Cost	Fair Value
Duration of one year or less	$ 1,869	$1,868
Duration of one through three years	1,241	1,233
Duration of three through five years	29	29
Total	$ 3,139	$3,130

7. Inventory

A summary of inventories by major category as of December 31, 2017 and 2016 follows:

	2017	2016
Raw materials	$289	$274
Work in process	89	87
Finished goods	163	137
Total	$541	$498

8. Property, Plant and Equipment

Property, plant and equipment as of December 31, 2017 and 2016 consisted of the following:

	2017	2016
Land	$77	$77
Buildings	525	443
Building and operating equipment	54	45
Leasehold improvements	153	150
Machinery and equipment	310	281
Furniture and fixtures	64	60
Computer equipment and software	496	442
Construction in progress	224	149
Subtotal	1,903	1,647
Less: accumulated depreciation and amortization	833	717
Total	$1,070	$930

9. Other Financial Information

Other current assets as of December 31, 2017 and 2016 consisted of the following:

	2017	2016
Income tax receivable	$—	$43
Other receivables	80	29
Derivative assets	14	361
Other prepaid taxes	102	119
Prepaid income taxes	—	95
Prepaid maintenance and software licenses	42	39
Other	150	93
Total	$388	$779

CELGENE CORPORATION AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS – (Continued)

Accrued expenses and other current liabilities as of December 31, 2017 and 2016 consisted of the following:

	2017	2016
Rebates, distributor chargebacks and distributor services	$814	$561
Compensation	358	414
Clinical trial costs and grants	622	342
Litigation-related loss contingency (see Note 18)	—	199
Interest	173	168
Sales, use, value added, and other taxes	59	101
Contingent consideration (see Note 4)	—	47
Milestones payable	62	—
Other	435	283
Total	$2,523	$2,115

Other non-current liabilities as of December 31, 2017 and 2016 consisted of the following:

	2017	2016
Contingent consideration (see Note 4)	$80	$1,443
Deferred compensation and long-term incentives	240	215
Contingent value rights (see Notes 4 and 18)	42	45
Derivative contracts	134	1
Other	48	67
Total	$544	$1,771

10. Intangible Assets and Goodwill

Intangible Assets: Our finite lived intangible assets primarily consist of developed product rights and technology obtained from the Pharmion Corp. (Pharmion), Gloucester, Abraxis BioScience, Inc. (Abraxis), Avila and Quanticel acquisitions. Our indefinite lived intangible assets as of December 31, 2016 consist of acquired IPR&D product rights from the Receptos, Nogra and Gloucester acquisitions and Receptos and Gloucester as of December 31, 2017. See Note 4 for details related to the impairment of our acquired Nogra IPR&D product rights asset as it relates to the discontinuation of certain GED-0301 phase III trials.

Intangible assets outstanding as of December 31, 2017 and December 31, 2016 are summarized as follows:

December 31, 2017	Gross Carrying Value	Accumulated Amortization	Intangible Assets, Net
Amortizable intangible assets:			
Acquired developed product rights	$3,406	$ (1,939)	$ 1,467
Technology	483	(410)	73
Licenses	66	(30)	36
Other	43	(34)	9
	3,998	(2,413)	1,585
Non-amortized intangible assets:			
Acquired IPR&D product rights	6,851	—	6,851
Total intangible assets	$10,849	$ (2,413)	$ 8,436

CELGENE CORPORATION AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS – (Continued)

December 31, 2016	Gross Carrying Value	Accumulated Amortization	Intangible Assets, Net
Amortizable intangible assets:			
Acquired developed product rights	$ 3,406	$ (1,694)	$ 1,712
Technology	483	(326)	157
Licenses	66	(26)	40
Other	43	(31)	12
	3,998	(2,077)	1,921
Non-amortized intangible assets:			
Acquired IPR&D product rights	8,471	—	8,471
Total intangible assets	$ 12,469	$ (2,077)	$ 10,392

Amortization expense was $336 million, $466 million and $285 million for the years ended December 31, 2017, 2016 and 2015, respectively. Amortization expense decreased in 2017 compared to 2016, primarily related to the prior year accelerated amortization expense and impairment charge to write down the technology platform asset obtained in the acquisition of Avila. Assuming no changes in the gross carrying amount of finite lived intangible assets, the future annual amortization expense related to finite lived intangible assets is expected to be approximately $252 million in 2018, $155 million in 2019, $154 million in 2020, $152 million in 2021 and $151 million in 2022.

Goodwill: There was no change in the carrying value of the Company's goodwill from December 31, 2016 to December 31, 2017.

11. Debt

Short-Term Borrowings and Current Portion of Long-Term Debt: We had no outstanding short-term borrowings as of December 31, 2017 and 2016. The current portion of long-term debt outstanding as of December 31, 2017 and 2016 includes:

	2017	2016
1.900% senior notes due 2017	$ —	$ 501

Long-Term Debt: Our outstanding senior notes with maturity dates in excess of one year after December 31, 2017 have an aggregate principal amount of $15.850 billion with varying maturity dates and interest rates. The carrying values of the long-term portion of these senior notes as of December 31, 2017 and 2016 are summarized below:

	2017	2016
2.125% senior notes due 2018	$ —	$ 998
2.300% senior notes due 2018	—	402
2.250% senior notes due 2019	505	509
2.875% senior notes due 2020	1,495	1,493
3.950% senior notes due 2020	514	518
2.250% senior notes due 2021	497	—
3.250% senior notes due 2022	1,044	1,054
3.550% senior notes due 2022	994	994
2.750% senior notes due 2023	746	—
4.000% senior notes due 2023	737	744
3.625% senior notes due 2024	1,001	1,001
3.875% senior notes due 2025	2,478	2,475

3.450% senior notes due 2027	991	—
5.700% senior notes due 2040	247	247
5.250% senior notes due 2043	393	393
4.625% senior notes due 2044	987	987
5.000% senior notes due 2045	1,975	1,974
4.350% senior notes due 2047	1,234	—
Total long-term debt	$15,838	$13,789

As of December 31, 2017 and 2016, the fair value of our outstanding Senior Notes was $16.6 billion and $14.6 billion, respectively, and represented a level 2 measurement within the fair value measurement hierarchy.

Debt Issuance: In November 2017, we issued an additional $750 million principal amount of 2.750% senior notes due 2023 (2023 Notes), $1.000 billion principal amount of 3.450% senior notes due 2027 (2027 Notes) and $1.250 billion principal amount of 4.350% senior notes due 2047 (2047 Notes). The 2023 Notes, 2027 Notes and 2047 Notes were issued at 99.944%, 99.848% and 99.733% of par, respectively and the discount is being amortized as additional interest expense over the period from issuance through maturity. Aggregate offering costs of approximately $23 million have been recorded as a direct deduction from the carrying amount of the 2023 Notes, 2027 Notes and 2047 Notes on our Consolidated Balance Sheets. The offering costs are being amortized as additional interest expense using the effective interest rate method over the period from issuance through maturity. Interest on the 2023 Notes is payable semi-annually in arrears on February 15 and August 15 of each year, beginning on February 15, 2018 and the principal is due in full at the maturity date. Interest on the 2027 Notes and 2047 Notes is payable semi-annually in arrears on May 15 and November15 of each year, beginning on May 15, 2018 and the principal is due in full at the maturity date. The 2023 Notes, 2027 Notes and 2047 Notes may be redeemed at our option, in whole or in part, at any time at a redemption price equaling accrued and unpaid interest plus the greater of 100% of the principal amount of the notes to be redeemed or the sum of the present values of the remaining schedule payments of interest and principal discounted to the date of redemption on a semi-annual basis plus 12.5 basis points for the 2023 Notes, 20 basis points for the 2027 Notes and 25 basis points for the 2047 Notes. If we experience a change of control, we will be required to offer to repurchase the 2023 Notes, 2027 Notes and 2047 Notes at a purchase price equal to 101% of the principal amount plus accrued and unpaid interest. We are subject to covenants which limit our ability to pledge properties as security under borrowing arrangements and limit our ability to perform sale and leaseback transactions involving our property.

In August 2017, we issued an additional $500 million principal amount of 2.250% senior notes due 2021 (2021 Notes). The 2021 Notes were issued at 99.706% of par, and the discount is being amortized as additional interest expense over the period from issuance through maturity. Offering costs of approximately $2 million have been recorded as a direct deduction from the carrying amount of the 2021 Notes on our Consolidated Balance Sheets. The offering costs are being amortized as additional interest expense using the effective interest rate method over the period from issuance through maturity. Interest on the 2021 Notes is payable semi-annually in arrears on February 15 and August 15 of each year, beginning on February 15, 2018 and the principal on the 2021 Notes is due in full at the maturity date. The 2021 Notes may be redeemed at our option, in whole or in part, at any time at a redemption price equaling accrued and unpaid interest plus the greater of 100% of the principal amount of the 2021 Notes to be redeemed or the sum of the present values of the remaining schedule payments of interest and principal discounted to the date of redemption on a semi-annual basis plus 15 basis points. If we experience a change of control accompanied by a downgrade of the debt to below investment grade, we will be required to offer to repurchase the 2021 Notes at a purchase price equal to 101% of the principal amount plus accrued and unpaid interest. We are subject to covenants which limit our ability to pledge properties as security under borrowing arrangements and limit our ability to perform sale and leaseback transactions involving our property.

Debt Redemption: On November 9, 2017, we announced the redemption of all of the outstanding $1.000 billion aggregate principal amount of 2.125% senior notes and $400 million aggregate principal amount of 2.300% senior notes, each maturing in August 2018. On December 11, 2017, we paid cash of approximately $1.4 billion, including accrued interest of $10 million, to complete the redemption resulting in a loss on extinguishment of debt of $4 million, which was recorded in Other income (expense), net in the Consolidated Statement of Income during the fourth quarter of 2017. The charge is comprised of the make-whole-premium and write-off of unamortized premium, discount and debt issuance costs related to the redeemed notes.

Debt Repayment: In August 2017, we repaid the 1.900% senior notes with a principal amount of $500 million upon maturity.

From time to time, we have used treasury rate locks and forward starting interest rate swap contracts to hedge against changes in interest rates in anticipation of issuing fixed-rate notes. As of December 31, 2017 and 2016 a balance of $31 million and $61 million in losses remained in accumulated OCI related to settlements of these derivative instruments and will be recognized as interest expense over the life of the notes.

As of December 31, 2017 and 2016, we were party to pay-floating, receive-fixed interest rate swap contracts designated as fair value hedges of fixed-rate notes as described in Note 5. Our swap contracts outstanding as of December 31, 2017 effectively convert the hedged portion of our fixed-rate notes to floating rates. From time to time we terminate the hedging relationship on certain of our swap contracts by settling the contracts or by entering into offsetting contracts. Any net proceeds received or paid in these settlements are accounted for as a reduction or increase of current and future interest expense associated with the previously hedged notes. As of December 31, 2017 and 2016, we had balances of $139 million and $173 million, respectively, of unamortized gains recorded as a component of our debt as a result of past swap contract settlements, including $3 million and $196 million related to the settlement of swap contracts during 2017 and 2016, respectively. See Note 5 for additional details related to interest rate swap contract activity.

Commercial Paper: In April 2016, our Board of Directors authorized an increase in the maximum amount of commercial paper issuable to $2.0 billion. As of both December 31, 2017 and 2016, we had available capacity to issue up to $2.0 billion of Commercial Paper and there were no borrowings under the Program.

Senior Unsecured Credit Facility: We maintain a senior unsecured revolving credit facility (Credit Facility) that provides revolving credit in the aggregate amount of $2.0 billion, which was increased from $1.75 billion in April 2016. During the second quarter of 2017, we amended our Credit Facility to extend the expiration date to April 17, 2022. Amounts may be borrowed in U.S. dollars for general corporate purposes. The Credit Facility currently serves as backup liquidity for our Commercial Paper borrowings. As of both December 31, 2017 and 2016, there were no outstanding borrowings against the Credit Facility. The Credit Facility contains affirmative and negative covenants including certain customary financial covenants. We were in compliance with all financial covenants as of December 31, 2017.

12. Stockholders' Equity

Preferred Stock: Our Board of Directors is authorized to issue, at any time, without further stockholder approval, up to 5.0 million shares of preferred stock, and to determine the price, rights, privileges, and preferences of such shares.

Common Stock: As of December 31, 2017, we were authorized to issue up to 1.150 billion shares of common stock of which shares of common stock issued totaled 971.7 million.

Treasury Stock: During the period of April 2009 through December 2017, our Board of Directors has approved repurchases of up to an aggregate $20.5 billion of our common stock. We repurchased $3.9 billion, $2.2 billion, and $3.3 billion of treasury stock under the program in 2017, 2016 and 2015, respectively, excluding transaction fees. As of December 31, 2017, an aggregate 204.9 million common shares were repurchased under the program at an average price of $96.03 per common share and total cost of $19.7 billion.

Other: When employee awards of RSUs vest and are settled net in order to fulfill minimum statutory tax withholding requirements, the shares withheld are reflected as treasury stock.

A summary of changes in common stock issued and treasury stock is presented below (in millions of shares):

	Common Stock	Common Stock in Treasury
Balances as of December 31, 2014	924.8	(124.6)
Exercise of stock options and conversion of restricted stock units	15.3	(1.2)
Issuance of common stock for employee benefit plans	—	0.4
Shares repurchased under share repurchase program	—	(28.1)
Balances as of December 31, 2015	940.1	(153.5)
Exercise of stock options and conversion of restricted stock units	14.0	(1.0)
Issuance of common stock for employee benefit plans	—	0.4
Shares repurchased under share repurchase program	—	(21.4)
Balances as of December 31, 2016	954.1	(175.5)
Exercise of stock options and conversion of restricted stock units	17.6	(0.6)
Issuance of common stock for employee benefit plans	—	0.4
Shares repurchased under share repurchase program	—	(36.7)

Balances as of December 31, 2017	971.7	(212.4)

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13. Accumulated Other Comprehensive Income

The components of other comprehensive income (loss) consist of changes in pension liability, changes in net unrealized gains (losses) on marketable securities classified as available-for-sale, net unrealized gains (losses) related to cash flow hedges, the amortization of the excluded component related to cash flow hedges and changes in foreign currency translation adjustments.

The accumulated balances related to each component of other comprehensive income (loss), net of tax, are summarized as follows:

	Pension Liability Adjustment	Net Unrealized Gains (Losses) On Available-for-Sale Marketable Securities	Net Unrealized Gains (Losses) Related to Cash Flow Hedges	Amortization of Excluded Component Related to Cash Flow Hedges (See Note 1)	Foreign Currency Translation Adjustments	Accumulated Other Comprehensive Income (Loss)
Balances as of December 31, 2015	$ (14)	$ 272	$ 586	$ —	$ (76)	$ 768
Other comprehensive (loss) income before reclassifications, net of tax	(24)	(360)	132	—	(26)	(278)
Reclassified losses (gains) from accumulated other comprehensive income (loss), net of tax	—	232	(303)	—	—	(71)
Net current-period other comprehensive (loss), net of tax	(24)	(128)	(171)	—	(26)	(349)
Balances as of December 31, 2016	$ (38)	$ 144	$ 415	$ —	$ (102)	$ 419
Cumulative effect adjustment for the adoption of ASU 2017-12 (See Note 1)	—	—	(12)	(18)	—	(30)
Other comprehensive income (loss) before reclassifications, net of tax	16	395	(428)	(15)	70	38
Reclassified losses (gains) from accumulated other comprehensive income (loss), net of tax	—	23	(181)	18	—	(140)
Net current-period other comprehensive income (loss), net of tax	16	418	(609)	3	70	(102)
Balances as of December 31, 2017	$ (22)	$ 562	$ (206)	$ (15)	$ (32)	$ 287

Accumulated Other Comprehensive Income (Loss) Components	Affected Line Item in the Consolidated Statements of Income	Gains (Losses) Reclassified Out of Accumulated Other Comprehensive Income (Loss) Years Ended December 31, 2017	2016	2015

Gains (losses) related to cash-flow hedges:				
Foreign exchange contracts	Net product sales	$184	$307	$354
Treasury rate lock agreements	Interest (expense)	(5)	(5)	(4)
Interest rate swap agreements	Interest (expense)	(1)	(2)	(1)
	Income tax provision	3	3	2
Amortization of excluded component	Net product sales	(18)	—	—
Gains (losses) on available-for-sale marketable securities:				
Realized gain (loss) on sales of marketable securities	Interest and investment income, net	(37)	(358)	(23)
	Income tax provision	14	126	8
Total reclassification, net of tax		$140	$71	$336

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14. Share-Based Compensation

We have a stockholder-approved stock incentive plan, the Celgene Corporation 2017 Stock Incentive Plan (formerly the 2008 Stock Incentive Plan) (Plan) that provides for the granting of options, RSUs, PSUs and other share-based awards to our employees, officers and non-employee directors. The Management Compensation and Development Committee of the Board of Directors (Compensation Committee) may determine the type, amount and terms, including vesting, of any awards made under the Plan.

On June 14, 2017, our stockholders approved an amendment of the Plan, which included the following key modifications: adoption of an aggregate share reserve of approximately 275.3 million shares of Common Stock, which includes 10.0 million new shares of Common Stock; increase the maximum individual payment under performance-based cash awards for 3 years performance periods to $15 million; provide that stock options and stock appreciation rights granted under the Plan may receive or retain dividends or dividend equivalents unless the underlying common stock subject to such award vests or are no longer subject to forfeiture restrictions; provide that, in the event of a change in control, allow for accelerated vesting or lapse of restrictions; provide that, if any performance-based award is subject to vesting after an involuntary termination of employment within the two-year period following a change in control, any vesting of such award shall be determined based on the higher of (A) Committee’s determination and certification of the extent to which the applicable performance goals have been achieved, and (B) the deemed achievement of all relevant performance goals at the “target” level prorated based on service during the performance period prior to the change in control. The term of the Plan is through April 18, 2027.

With respect to options granted under the Plan, the exercise price may not be less than the market closing price of the common stock on the date of grant. In general, options granted under the Plan vest over periods ranging from immediate vesting to four-year vesting and expire ten years from the date of grant, subject to earlier expiration in case of termination of employment unless the participant meets the retirement provision under which the option would have a maximum of three additional years to vest. The vesting period for options granted under the Plan is subject to certain acceleration provisions if a change in control, as defined in the Plan, occurs. Plan participants may elect to exercise options at any time during the option term. However, any shares so purchased which have not vested as of the date of exercise shall be subject to forfeiture, which will lapse in accordance with the established vesting time period.

We issue PSUs to certain executive officers that are payable in shares of our common stock at the end of a three-year performance measurement period. The number of shares to be issued at the end of the measurement period will vary, based on performance, from 0% to 200% of the target number of PSUs granted, depending on the achievement of specified performance and market targets for non-GAAP revenue (37.5% weighting), non-GAAP earnings per share (37.5% weighting) and relative total shareholder return (25% weighting). All shares delivered upon PSU vesting are restricted from trading for one year and one day from the vesting date.

The grant date fair value for the portion of the PSUs related to non-GAAP revenue and non-GAAP earnings per share was estimated using the fair market value of our common stock on the grant date. The grant date fair value for the portion of the PSUs related to relative total shareholder return was estimated using the Monte Carlo valuation model.

Shares of common stock available for future share-based grants under all plans were 36.6 million at December 31, 2017.

The following table summarizes the components of share-based compensation expense in the Consolidated Statements of Income for the years ended December 31, 2017, 2016 and 2015:

	2017	2016	2015

Cost of goods sold	$29	$33	$32
Research and development	268	253	251
Selling, general and administrative	347	320	294
Total share-based compensation expense	644	606	577
Tax benefit related to share-based compensation expense	180	167	161
Reduction in net income	$464	$439	$416

The tax benefit related to share-based compensation expense above excludes excess tax benefits of $290 million, $189 million, and $301 million from share-based compensation awards that vested or were exercised during the years ended December 31, 2017, 2016 and 2015, respectively. See Note 1 for additional information related to the adoption of ASU 2016-09.

Included in share-based compensation expense for the years ended December 31, 2017, 2016 and 2015 was compensation expense related to non-qualified stock options of $347 million, $357 million and $346 million, respectively. Net proceeds received from

share-based compensation arrangements for the years ended December 31, 2017, 2016 and 2015 were $685 million, $359 million and $252 million, respectively. Prior to the adoption of ASU 2016-09, we did not recognize a deferred tax asset for excess tax benefits that had not been realized and had applied the tax law method as our accounting policy regarding the ordering of tax benefits to determine whether an excess tax benefit has been realized.

Stock Options: As of December 31, 2017, there was $553 million of total unrecognized compensation cost related to stock options granted under the plans. That cost will be recognized over an expected remaining weighted-average period of 2.2 years.

The weighted-average grant date fair value of the stock options granted during the years ended December 31, 2017, 2016 and 2015 was $32.42 per share, $32.49 per share and $38.83 per share, respectively. We estimated the fair value of options granted using a Black-Scholes option pricing model with the following assumptions:

	2017	2016	2015
Risk-free interest rate	1.70% - 2.22%	1.03% - 2.08%	1.17% - 1.72%
Expected volatility	24% - 30%	29% - 35%	31% - 38%
Weighted average expected volatility	27%	32%	34%
Expected term (years)	5.03 - 5.06	5.04 - 5.06	5.02 - 5.04
Expected dividend yield	0%	0%	0%

The risk-free interest rate is based on the U.S. Treasury zero-coupon curve. Expected volatility of stock option awards is estimated based on the implied volatility of our publicly traded options with settlement dates of six months. The use of implied volatility was based upon the availability of actively traded options on our common stock and the assessment that implied volatility is more representative of future stock price trends than historical volatility. The expected term of an employee share option is the period of time for which the option is expected to be outstanding. We made a determination of expected term by analyzing employees' historical exercise experience from its history of grants and exercises in our option database and management estimates. Forfeiture rates are estimated based on historical data.

The following table summarizes all stock option activity for the year ended December 31, 2017:

	Options (in Millions)	Weighted Average Exercise Price Per Option	Weighted Average Remaining Contractual Term (Years)	Aggregate Intrinsic Value (in Millions)
Outstanding as of December 31, 2016	73.8	$ 70.62	6.2	$ 3,388
Changes during the Year:				
Granted	11.5	118.80		
Exercised	(15.6)	49.49		
Forfeited	(1.8)	108.00		
Expired	(0.1)	97.59		
Outstanding as of December 31, 2017	67.8	$ 82.53	6.1	$ 1,823
Vested as of December 31, 2017 or expected to vest in the future	66.9	$ 82.07	6.0	$ 1,822
Vested as of December 31, 2017	41.1	$ 63.58	4.7	$ 1,754

The total fair value of shares vested during the years ended December 31, 2017, 2016 and 2015 was $346 million, $335 million and $267 million, respectively. The total intrinsic value of stock options exercised during the years ended December 31, 2017, 2016 and 2015 was $1.2 billion, $747 million and $994 million, respectively. We primarily

utilize newly issued shares to satisfy the exercise of stock options.

Restricted Stock Units: We issue RSUs, under our equity program in order to provide an effective incentive award with a strong retention component. Equity awards may, at the option of employee participants, be divided between stock options and RSUs. The employee may choose between alternate Company defined mixes of stock options and RSUs, with the number of options to be granted reduced by four for every one RSU to be granted.

Information regarding the Company's RSUs for the year ended December 31, 2017 is as follows (shares in millions):

Nonvested RSUs	Share Equivalent	Weighted Average Grant Date Fair Value
Nonvested as of December 31, 2016	7.1	$ 103.00
Changes during the period:		
Granted	3.1	113.23
Vested	(2.0)	91.27
Forfeited	(0.5)	109.15
Nonvested as of December 31, 2017	7.7	$ 109.55

As of December 31, 2017, there was $422 million of total unrecognized compensation cost related to non-vested RSU awards. That cost is expected to be recognized over a weighted-average period of 1.6 years. The Company primarily utilizes newly issued shares to satisfy the vesting of RSUs.

Performance-Based Restricted Stock Units: We grant performance-based restricted stock units that vest contingent upon the achievement of pre-determined performance-based milestones that are either related to product development or the achievement of specified performance and market targets, including non-GAAP revenue, non-GAAP earnings per share and relative total shareholder return. The following table summarizes the Company's performance-based restricted stock unit activity for the year ended December 31, 2017 (shares in thousands):

Nonvested Performance-Based RSUs	Share Equivalent	Weighted Average Grant Date Fair Value
Nonvested as of December 31, 2016	463	$ 107.38
Changes during the period:		
Granted	169	123.86
Vested	(38)	87.92
Forfeited	(36)	109.61
Non-vested as of December 31, 2017	558	$ 116.27

As of December 31, 2017, there was $25 million of total unrecognized compensation cost related to non-vested awards of performance-based RSUs that is expected to be recognized over a weighted-average period of 1.3 years.

15. Employee Benefit Plans

We sponsor an employee savings and retirement plan, which qualifies under Section 401(k) of the Internal Revenue Code, as amended (the Code) for our U.S. employees. Our contributions to the U.S. savings plan are discretionary and have historically been made in the form of our common stock (see Note 12). Such contributions are based on specified percentages of employee contributions up to 6% of eligible compensation or a maximum permitted by law. Total expense for contributions to the U.S. savings plans were $34 million, $40 million and $35 million in 2017, 2016 and 2015, respectively.

We also sponsor defined contribution plans in certain foreign locations. Participation in these plans is subject to the local laws that are in effect for each country and may include statutorily imposed minimum contributions. We also maintain defined benefit plans in certain foreign locations for which the obligations and the net periodic pension costs were determined not to be material as of and for the year ended December 31, 2017.

In 2000, our Board of Directors approved a deferred compensation plan. The plan was frozen effective as of December 31, 2004, and no additional contributions or deferrals can be made to that plan. Accrued benefits under the frozen plan will continue to be governed by the terms under the tax laws in effect prior to the enactment of American Jobs Creation Act of 2004, Section 409A (Section 409A).

In February 2005, our Board of Directors adopted the Celgene Corporation 2005 Deferred Compensation Plan, effective as of January 1, 2005, and amended the plan in February 2008. This plan operates as our ongoing deferred compensation plan and is intended to comply with Section 409A. Eligible participants, which include certain top-level executives as specified by the plan, can elect to defer up to an amended 90% of the participant's base salary, 100% of cash bonuses and equity compensation allowed under Section 409A. Company contributions to the deferred compensation plan represent a match to certain participants' deferrals

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up to a specified percentage, which currently ranges from 10% to 20%, depending on the employee's position as specified in the plan, of the participant's base salary. Expenses related to our contributions to the deferred compensation plans in 2017, 2016 and 2015, were not material. The Company's matches are fully vested upon contribution. All other Company contributions to the plan do not vest until the specified requirements are met. As of December 31, 2017 and 2016, we had a deferred compensation liability included in other non-current liabilities in the Consolidated Balance Sheets of approximately $156 million and $125 million, respectively, which included the participant's elected deferral of salaries and bonuses, the Company's matching contribution and earnings on deferred amounts as of that date. The plan provides various alternatives for the measurement of earnings on the amounts participants defer under the plan. The measurement alternatives are based on returns of a variety of funds that offer plan participants the option to spread their risk across a diverse group of investments.

We have established a Long-Term Incentive Plan, or LTIP, designed to provide key officers and executives with performance-based incentive opportunities contingent upon achievement of pre-established corporate performance objectives covering a three-year period. As of December 31, 2017, we had recorded liabilities for three separate three-year performance cycles running concurrently and ending December 31, 2017, 2018 and 2019. Performance measures for each of the performance cycles are based on the following components: 37.5% on non-GAAP earnings per share (as defined in the LTIP); 37.5% on total non-GAAP revenue (as defined in the LTIP); and 25% on relative total shareholder return, which is a measurement of our stock price performance during the applicable three-year period compared with a group of other companies in the biopharmaceutical industry.

Threshold, target and maximum cash payout levels are calculated as a percentage between 0% to 200% of each participant’s base salary at the time the LTIP was approved by the Compensation Committee. Such awards are payable in cash or common stock or a mixture of cash and common stock, which will be determined by the Compensation Committee at the time of award delivery. Share-based payout levels are calculated using the cash-based threshold, target and maximum levels, divided by the average closing price of Celgene stock for the 30 trading days prior to the commencement of each performance cycle. Therefore, final share-based award values are reflective of the stock price at the end of the measurement period. The Compensation Committee may determine that payments made in common stock are restricted from trading for a period of time. The estimated payout value for the three-year performance cycle ended December 31, 2017 is $7 million, which is included in Accrued expenses and other current liabilities as of December 31, 2017, and the maximum potential cash-based payout, assuming maximum objectives are achieved for performance cycles ending in 2018, 2019 and 2020 are $13 million, $14 million and $12 million, respectively. The reduction in the maximum potential cash-based payout for cycles ending after 2016 reflect a shift in the mix of compensation components for certain senior executives, including performance-based equity compensation in lieu of LTIP participation. We accrue the long-term incentive liability over each three-year cycle. Prior to the end of a three-year cycle, the accrual is based on an estimate of our level of achievement during the cycle. Upon a change in control, participants will be entitled to an immediate payment equal to their target award or, if higher, an award based on actual performance through the date of the change in control. For the years ended December 31, 2017, 2016 and 2015, we recognized expense related to the LTIP of $5 million, $13 million and $25 million, respectively.

16. Income Taxes

In December 2017, the President signed U.S. tax reform legislation (2017 Tax Act), which includes a broad range of provisions, many of which significantly differ from those contained in previous U.S. tax law. Changes in tax law are accounted for in the period of enactment. As such, the 2017 consolidated financial statements reflect the immediate tax effect of the 2017 Tax Act, which was enacted on December 22, 2017 (Enactment Date). The 2017 Tax Act contains several key provisions including, among other things:

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- A one-time tax on the mandatory deemed repatriation of post-1986 untaxed foreign earnings and profits (E&P), referred to as the toll charge;
- Reduction in the Corporate tax rate from 35% to 21% for tax years beginning after December 31, 2017;
- Introduction of a new U.S. tax on certain off-shore earnings referred to as Global Intangible Low-Taxed Income (GILTI) at an effective tax rate of 10.5% for tax years beginning after December 31, 2017 (increasing to 13.125% for tax years beginning after December 31, 2025) with a partial offset by foreign tax credits; and
- Introduction of a territorial tax system beginning in 2018 by providing a 100% dividends received deduction on certain qualified dividends from foreign subsidiaries.

During the fourth quarter of 2017, we recorded an income tax expense of $1,269 million, which was comprised of the following:

- An income tax expense of $1,890 million for the one-time deemed repatriation of E&P. In accordance with the 2017 Tax Act, the toll charge liability may be paid over eight years. As such, we have recorded $1,732 million and $150 million in non-current and current income tax liability on an undiscounted basis, respectively, as of December 31, 2017; and

- An income tax benefit of $621 million, primarily for the remeasurement of our deferred tax assets and liabilities at the enacted tax rate of 21%.

The net charge recorded was based on currently available information and interpretations of applying the provisions of the 2017 Tax Act as of the time of filing this Annual Report on Form 10-K. In accordance with authoritative guidance issued by the Securities and Exchange Commission (SEC), the income tax effect for certain aspects of the 2017 Tax Act represent provisional amounts for which our accounting is incomplete but a reasonable estimate could be determined and recorded during the fourth quarter of 2017. The guidance provides for a measurement period, up to one year from the Enactment Date, in which provisional amounts may be adjusted when additional information is obtained, prepared or analyzed about facts and circumstances, that existed as of the Enactment Date, if known, which would have affected the amounts that were initially recorded as provisional amounts. Adjustments to provisional amounts identified during the measurement period should be recorded as an income tax expense or benefit in the period the adjustment is determined.

We continue to evaluate the impacts of the 2017 Tax Act and consider the amounts recorded to be provisional, except for the one-time impact of the change in tax rate on our deferred tax assets and liabilities as of December 31, 2017 for which our accounting is complete. In addition, we are still evaluating the GILTI provisions of the 2017 Tax Act and its impact, if any, on our consolidated financial statements as of December 31, 2017. The FASB allows companies to adopt an accounting policy to either recognize deferred taxes for GILTI or treat such as a tax cost in the year incurred. We have not yet determined our accounting policy because determining the impact of the GILTI provisions requires analysis of our existing legal entity structure, the reversal of our U.S. GAAP and U.S. tax basis differences in the assets and liabilities of our foreign subsidiaries, and our ability to offset any tax with foreign tax credits. As such, we did not record a deferred income tax expense or benefit related to the GILTI provisions in our Consolidated Statement of Income for the year ended December 31, 2017 and we will finalize this during the measurement period.

The Company recorded a provisional amount for its toll charge, which represents its reasonable estimate of the liability due for the mandatory deemed repatriation of its post-1986 untaxed foreign E&P. Determining the provisional toll charge liability required a significant effort based on a number of factors including:

- Analyzing our accumulated untaxed foreign E&P since 1986 including historical practices and assertions made in determining such;
- Determining the composition, including intercompany receivables and payables of specified foreign corporations, of our post-1986 untaxed foreign E&P that is held in cash or liquid assets and other assets at several measurement dates, as a different tax rate is applied to each when determining the toll charge liability; and
- Assessing the potential impact of existing uncertain tax positions in determining our accumulated undistributed E&P.

For the aforementioned factors as well as the proximity of the enactment of the 2017 Tax Act to our year-end, we had limited time to understand the 2017 Tax Act and its various interpretations (including any additional guidance issued through the time of filing this Annual Report on Form 10-K), to assess how to apply the new law to our specific facts and circumstances and determine the toll charge. These factors also contributed to the tax effects recorded being provisional amounts. In addition, we made certain assumptions in determining the provisional toll charge that may result in adjustments when we finalize our analysis and accounting for the 2017 Tax Act including, but not limited to, the following:

- Finalize our analysis of our post-1986 untaxed foreign E&P;
- Finalize our analysis as to the amounts and nature of, among other items, our intercompany transactions and balances as of December 31, 2017, 2016 and 2015 to determine the appropriate composition of our post-1986 untaxed E&P as

either cash / liquid assets or other assets; and

- Finalize our analysis of the impacts of the Tax Act on our accounting for the GILTI provisions.

Certain income tax effects of applying the 2017 Tax Act represent provisional amounts for which our analysis is incomplete but a reasonable estimate could be determined and recorded during the fourth quarter of 2017. Our actual results may materially differ from our current estimate due to, among other things, further guidance that may be issued by U.S. tax authorities or regulatory bodies including the SEC and the FASB to interpret the 2017 Tax Act. We will continue to analyze the 2017 Tax Act and any additional guidance that may be issued so we can finalize the full effects of applying the new legislation on our financial statements in the measurement period.

CELGENE CORPORATION AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS – (Continued)

Income before income taxes is as follows:

	2017	2016	2015
U.S.	$445	$735	$525
Non-U.S.	3,869	1,637	1,498
Income before income taxes	$4,314	$2,372	$2,023

For the years ended December 31, 2017, 2016 and 2015, U.S. income before income taxes reflects charges related to share-based compensation, upfront collaboration payments, asset impairments, acquisitions and interest expense which in the aggregate, increased from 2015 to 2017. Many of these charges are not deductible for U.S. income tax purposes. Non-U.S. income before income taxes reflects the results of our commercial, research and manufacturing operations outside the U.S.

The provision (benefit) for taxes on income is as follows:

	2017	2016	2015
United States:			
Taxes currently payable:			
Federal	$2,545	$569	$321
State and local	52	43	63
Deferred income taxes	(1,331)	(343)	(29)
Total U.S. tax provision	1,266	269	355
International:			
Taxes currently payable	107	106	71
Deferred income taxes	1	(2)	(5)
Total international tax provision	108	104	66
Total provision	$1,374	$373	$421

Amounts are reflected in the preceding tables based on the location of the taxing authorities.

Deferred taxes arise because of different treatment between financial statement accounting and tax accounting, known as temporary differences. We record the tax effect on these temporary differences as deferred tax assets (generally items that can be used as a tax deduction or credit in future periods) or deferred tax liabilities (generally items for which we received a tax deduction but have not yet recorded in the Consolidated Statements of Income and the tax effects of acquisition related temporary differences). We evaluate the likelihood of the realization of deferred tax assets and record a valuation allowance if it is more likely than not that all or a portion of the asset will not be realized. We consider many factors when assessing the likelihood of future realization of deferred tax assets, including our recent cumulative earnings experience by taxing jurisdiction, expectations of future taxable income, the carryforward periods available to us for tax reporting purposes, tax planning strategies and other relevant factors. Significant judgment is required in making this assessment. As of December 31, 2017 and 2016, it was more likely than not that we would realize our deferred tax assets, net of valuation allowances. The $134 million increase in the valuation allowance from 2016 to 2017 relates primarily to certain state and foreign net operating loss (NOL) carryforwards. As a result of the 2017 Tax Act, we recorded an income tax benefit of $621 million primarily related to the remeasurement of our deferred tax liabilities and assets at December 31, 2017.
Many of our operations are conducted outside the United States. As a result of the 2017 Tax Act and the toll charge, we expect to have access to our offshore earnings as of December 31, 2017 with minimal to no additional U.S. tax impact. Therefore, we no longer consider these earnings to be permanently reinvested offshore. In prior years, we recorded U.S. deferred tax liabilities of $317 million for certain offshore earnings that were expected to be remitted to our domestic operations. These deferred tax liabilities reduced the income tax expense recorded in the fourth quarter

of 2017 for the toll charge. The remaining amounts earned overseas were expected to be permanently reinvested outside of the United States, and therefore, no accrual for U.S. taxes was provided. We continue to evaluate our assertions on any remaining outside basis differences in our foreign subsidiaries as of December 31, 2017 and have not completed our analysis. In accordance with authoritative guidance issued by the SEC, we expect to finalize our accounting related to the toll charge and any remaining outside basis differences in our foreign subsidiaries during later periods as we complete our analysis, computations and assertions.

CELGENE CORPORATION AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS – (Continued)

As of December 31, 2017 and 2016 the tax effects of temporary differences that give rise to deferred tax assets and liabilities were as follows:

	2017		2016	
	Assets	Liabilities	Assets	Liabilities
NOL carryforwards	$249	$—	$133	$—
Tax credit carryforwards	11	—	14	—
Share-based compensation	317	—	412	—
Other assets and liabilities	38	(52)	60	(10)
Intangible assets	333	(2,008)	808	(1,013)
Accrued and other expenses	278	—	263	—
Unremitted earnings	—	—	—	(317)
Unrealized (gains) losses on securities	—	(193)	—	(69)
Subtotal	1,226	(2,253)	1,690	(1,409)
Valuation allowance	(277)	—	(143)	—
Total deferred taxes	$949	$(2,253)	$1,547	$(1,409)
Net deferred tax asset (liability)		$(1,304)	$138	

As of December 31, 2017 and 2016, deferred tax assets and liabilities were classified on our Consolidated Balance Sheets as follows:

	2017	2016
Other non-current assets	$23	$138
Deferred income tax liabilities	(1,327)	—
Net deferred tax asset (liability)	$(1,304)	$138

Reconciliation of the U.S. statutory income tax rate to the Company's effective tax rate is as follows:

Percentages	2017	2016	2015
U.S. statutory rate	35.0 %	35.0 %	35.0 %
Foreign tax rate differences	(28.8)%	(21.1)%	(21.0)%
State taxes, net of federal benefit	0.6 %	0.8 %	1.2 %
Change in valuation allowance	0.8 %	0.5 %	2.0 %
Acquisition and collaboration related differences	2.1 %	(0.7)%	4.5 %
Changes in uncertain tax positions	0.1 %	(0.4)%	(0.5)%
Stock compensation	(6.7)%	— %	— %
2017 Tax Act	29.4 %	— %	— %
Other	(0.7)%	1.6 %	(0.4)%
Effective income tax rate	31.8 %	15.7 %	20.8 %

Our reconciliation of the U.S. statutory income tax rate to our effective tax rate includes foreign tax rate differences from our foreign operations which are subject to income taxes at different rates than the United States. The benefit related to foreign tax rate differences primarily results from our commercial operations in Switzerland, which include significant research and development and manufacturing for worldwide markets. We operated under an income tax agreement in Switzerland through 2015 that provided an exemption from most Swiss income taxes on our operations in Switzerland. Beginning in 2016, we have been operating under a new agreement with the Swiss tax authorities which reflects a reorganization and expansion of our Swiss operations, and results in similar tax benefits through the end of 2024. The difference between the maximum statutory Swiss income tax rate (approximately 15.6% in 2017, 15.6% in 2016 and 17.0% in 2015) and our Swiss income tax rate under the tax agreements resulted in a reduction in our 2017, 2016 and 2015 effective tax rates of 14.8, 20.5 and 25.7 percentage points, respectively. The increase in the

tax benefit from foreign tax rate differences was primarily due to an increase in pre-tax earnings from foreign tax jurisdictions.

The impact of acquisition and collaboration related differences on our effective tax rate was higher in 2017 and 2015 compared to 2016 primarily due to a non-recurring tax benefit related to a loss on our investment in Avila in 2016. The increase in tax benefits

from stock compensation related to excess tax benefits from employee stock compensation upon adoption of ASU 2016-09. The reconciliation also includes the effect of changes in uncertain tax positions, which include the effect of settlements, expirations of statutes of limitations, and other changes in prior year tax positions.

As of December 31, 2017, we had U.S. federal NOL carryforwards of approximately $200 million and state NOL carryforwards of approximately $1.1 billion that will expire in the years 2018 through 2037. We also have U.S. federal and state research and experimentation credit carryforwards of approximately $12 million that will expire in the years 2020 through 2034. Deferred tax assets for most of our U.S. federal and state carryforwards and all of our foreign carryforwards are subject to a full valuation allowance. Prior to the adoption of ASU 2016-09, excess tax benefits related to share-based compensation deductions incurred after December 31, 2005 were required to be recognized in the period in which the tax deduction was realized through a reduction of income taxes payable. As a result, we had not recorded deferred tax assets for these share-based compensation deductions included in our NOL carryforwards and research and experimentation credit carryforwards. ASU 2016-09 was effective for us on January 1, 2017. Among other provisions, the new standard requires that excess tax benefits and tax deficiencies that arise upon vesting or exercise of share-based payments be recognized as income tax benefits and expenses in the income tax provision. Previously, such amounts were recorded to additional paid-in-capital. This aspect of the new guidance was required to be adopted prospectively, and accordingly, the income tax provision for the year ended December 31, 2017 includes $290 million of excess tax benefits arising from share-based compensation awards that vested or were exercised during the period. In addition, at January 1, 2017, the Company recorded a cumulative-effect adjustment to Retained earnings, with a corresponding increase to net deferred tax assets, in the amount of $17 million related to previously unrecognized excess tax benefits.

During the third quarter of 2017, we completed an updated analysis of our current and prior year estimates of our U.S. research and development and orphan drug tax credits. The analysis resulted in additional net income tax benefits of approximately $65 million including $55 million related to prior year estimated tax credits, which were recorded on our Consolidated Statements of Income within Income tax provision. The effect of the change in estimate increased net income by approximately $65 million. On a per share basis, this increased both of the Company’s basic and diluted income per share by $0.08.

We realized excess tax benefits related to share-based compensation in 2016 and 2015 for income tax purposes an increased additional paid-in capital in the amount of approximately $185 million and $302 million, respectively. We have recorded deferred income tax expense in 2017 of $227 million and deferred income tax benefits in 2016 and 2015 of $61 million and $107 million, respectively, primarily related net unrealized gains/losses on securities, as a component of accumulated other comprehensive income.

In 2015, we acquired all of the outstanding common stock of Receptos. The acquisition was accounted for using the acquisition method of accounting, and we recorded a deferred tax liability of $2.5 billion related to the acquisition. Upon integration of the acquired assets into our offshore research, manufacturing, and commercial operations, the deferred tax liability was reclassified to a non-current tax liability which represented an estimate of income tax that may have been incurred in the future upon successful development of the acquired IPR&D into a commercially viable product. Upon enactment of the 2017 Tax Act, the non-current tax liability was reclassified to a deferred tax liability and remeasured for the enacted change in tax rates that are expected to apply when the temporary difference reverses.

Our tax returns are under routine examination in many taxing jurisdictions. The scope of these examinations includes, but is not limited to, the review of our taxable presence in a jurisdiction, our deduction of certain items, our claims for research and development tax credits, our compliance with transfer pricing rules and regulations and the inclusion or exclusion of amounts from our tax returns as filed. Our U.S. federal income tax returns have been audited by the IRS

through the year ended December 31, 2008. Tax returns for the years ended December 31, 2009, 2010, and 2011 are currently under examination by the IRS. We are also subject to audits by various state and foreign taxing authorities, including, but not limited to, most U.S. states and major European and Asian countries where we have operations.

We regularly reevaluate our tax positions and the associated interest and penalties, if applicable, resulting from audits of federal, state and foreign income tax filings, as well as changes in tax law (including regulations, administrative pronouncements, judicial precedents, etc.) that would reduce the technical merits of the position to below more likely than not. We believe that our accruals for tax liabilities are adequate for all open years. Many factors are considered in making these evaluations, including past history, recent interpretations of tax law and the specifics of each matter. Because tax regulations are subject to interpretation and tax litigation is inherently uncertain, these evaluations can involve a series of complex judgments about future events and can rely heavily on estimates and assumptions. We apply a variety of methodologies in making these estimates and assumptions, which include studies performed by independent economists, advice from industry and subject matter experts, evaluation of public actions taken by the IRS and other taxing authorities, as well as our industry experience. These evaluations are based on estimates and assumptions that have been deemed reasonable by management. However, if management's estimates are not representative of actual outcomes, our results of operations could be materially impacted.

Unrecognized tax benefits, generally represented by liabilities on the consolidated balance sheet and all subject to tax examinations, arise when the estimated benefit recorded in the financial statements differs from the amounts taken or expected to be taken in a tax return because of the uncertainties described above. A reconciliation of the beginning and ending amount of unrecognized tax benefits is as follows:

	2017	2016
Balance at beginning of year	$414	$326
Increases related to prior year tax positions	67	—
Decreases related to prior year tax positions	—	(11)
Increases related to current year tax positions	426	108
Settlements	—	—
Lapses of statutes of limitations	(11)	(9)
Balance at end of year	$896	$414

These unrecognized tax benefits relate primarily to issues common among multinational corporations. If recognized, unrecognized tax benefits of approximately $826 million would have a net impact on the effective tax rate. We account for interest and penalties related to uncertain tax positions as part of our provision for income taxes. Accrued interest as of December 31, 2017 and 2016 is approximately $60 million and $40 million, respectively.

We have recorded changes in the liability for unrecognized tax benefits related to income tax audits, new information, and expirations of statutes of limitations in various taxing jurisdictions. The liability for unrecognized tax benefits is expected to increase in the next twelve months relating to operations occurring in that period. Any settlements of examinations with taxing authorities or expirations of statutes of limitations would likely result in a decrease in our liability for unrecognized tax benefits and a corresponding increase in taxes paid or payable and/or a decrease in income tax expense. It is reasonably possible that the amount of the liability for unrecognized tax benefits could change by a significant amount during the next twelve-month period as a result of settlements or expirations of statutes of limitations. Finalizing examinations with the relevant taxing authorities can include formal administrative and legal proceedings and, as a result, it is difficult to estimate the timing and range of possible change related to the Company's unrecognized tax benefits. An estimate of the range of the possible change cannot be made until issues are further developed or examinations close. Our estimates of tax benefits and potential tax benefits may not be representative of actual outcomes, and variation from such estimates could materially affect our financial statements in the period of settlement or when the statutes of limitations expire.

17. Collaboration Agreements

We enter into collaborative arrangements for the research and development, license, manufacture and/or commercialization of products and/or product candidates. In addition, we also acquire products, product candidates and research and development technology rights and establish research and development collaborations with third parties to enhance our strategic position within our industry by strengthening and diversifying our research and development capabilities, product pipeline and marketed product base. These arrangements may include non-refundable, upfront payments, payments by us for options to acquire rights to products and product candidates and other rights, as well as contingent obligations by us for potential development, regulatory and commercial performance milestone payments, cost sharing arrangements, royalty payments, profit sharing and equity investments (including equity investments in the event of an initial public offering of equity by our partners). The activities under these collaboration agreements are performed with no guarantee of either technological or commercial success. Although we do not consider any individual alliance to be material, certain of the more notable alliances are described below. Summarized financial information for each of our alliances is presented in tabular format after the alliance description:

Acceleron Pharma (Acceleron):

We have worldwide strategic collaboration agreements with Acceleron for the joint development and commercialization of sotatercept (ACE-011) and luspatercept (ACE-536). Luspatercept is currently in phase III studies for beta-thalassemia and myelodysplastic syndromes (MDS).

On January 1, 2013, we became responsible for the payment of all development costs related to sotatercept and luspatercept and have recognized development expenses as research and development expense as they were incurred.

With respect to the sotatercept program, Acceleron is eligible to receive up to $367 million in development, regulatory approval and sales-based milestones and up to an additional $348 million for each of three specific discovery stage programs. We also

CELGENE CORPORATION AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS – (Continued)

agreed to co-promote the developed products in North America. Acceleron will receive tiered royalties on worldwide net sales upon the commercialization of a development compound.

With respect to the luspatercept program, we have an exclusive, worldwide, royalty-bearing license to luspatercept and future Acceleron products for the treatment of anemia. We also agreed to co-promote the products in the United States, Canada and Mexico. Acceleron is eligible to receive development, regulatory approval and sales-based milestones of up to $218 million for luspatercept and up to an additional $171 million for the first discovery stage program, $149 million for the second discovery stage program and $125 million for each additional discovery stage program thereafter. Acceleron will receive tiered royalties on worldwide net sales upon the commercialization of a development compound.

The sotatercept and luspatercept agreements may be terminated by us, at our sole discretion, at any time or by either party, among other things, upon a material breach by the other party.

In September 2017, we amended and restated the collaboration agreement with Acceleron for the joint development and commercialization of sotatercept. Under the amended and restated collaboration agreement, Acceleron has the right to fund and conduct all research and development activities for sotatercept in the pulmonary hypertension field. Should sotatercept be approved for an indication in the pulmonary hypertension field, Acceleron will be responsible for global commercialization and Celgene will be eligible to receive royalties on global net sales in that field. The original collaboration deal terms will remain in place with respect to development and commercialization outside of the pulmonary hypertension field.

Summarized financial information related to Acceleron is presented below:

	Year ended December 31,					As of December 31,[1]		
	Research and Development Expense							
	Upfront Fees	Milestones	Extension/ Termination of Agreements	Amortization of Prepaid Research and Development	Equity Investments Made During Period	Intangible Asset Balance	Equity Investment Balance	Percentage of Outstanding Equity
2017	$ —	$ —	$ —	$ —	$ 28	$ —	$ 261	13.6 %
2016	—	15	—	—	32	—	138	14.1 %
2015	—	—	—	—	—			
2014 and prior	70	45	—	—	93			

[1] Year-end balance and percentage of outstanding equity are presented for the current and prior year.

Agios Pharmaceuticals, Inc. (Agios):

During 2010, we entered into a discovery and development collaboration and license agreement with Agios (2010 Collaboration Agreement) that focused on cancer metabolism targets and the discovery, development and commercialization of associated therapeutics.

With respect to each product that we choose to license, Agios could receive up to approximately $120 million upon achievement of certain milestones and other payments plus royalties on worldwide sales, and Agios may also participate in the development and commercialization of certain products in the United States.

In June 2014, we exercised our option to license AG-221 (enasidenib), now IDHIFA®, from Agios on an exclusive worldwide basis, with Agios retaining the right to conduct a portion of commercialization activities for enasidenib in

the United States. Enasidenib is currently in a phase III study in patients that present an isocitrate dehydrogenase-2 (IDH2) mutation in relapsed refractory acute myeloid leukemia (rrAML). A New Drug Application (NDA) was submitted to the U.S. Food and Drug Administration (FDA) in the fourth quarter of 2016 based on phase I/II data generated in the rrAML population. IDHIFA® was approved in August 2017 for the treatment of adult patients with relapsed or refractory acute myeloid leukemia with an isocitrate dehydrogenase (IDH2) detected by and FDA-approved companion diagnostic.

In January 2015, we exercised our option to an exclusive license from Agios to AG-120, an orally available, selective inhibitor of the mutated isocitrate dehydrogenase-1 (IDH1) protein for the treatment of patients with cancers that harbor an IDH1 mutation, outside the United States, with Agios retaining the right to conduct development and commercialization within the United States. In May 2016, we agreed to return to Agios the AG-120 lead development candidate. As a result, Agios obtained global rights to AG-120 and the IDH1 program. Neither Agios nor Celgene have any continuing financial obligation, including royalties or milestone payments, to the other concerning AG-120 or the IDH1 program.

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NOTES TO CONSOLIDATED FINANCIAL STATEMENTS – (Continued)

In April 2015, we and Agios entered into a new joint worldwide development and profit share collaboration for AG-881. AG-881 is a small molecule that has shown in preclinical studies to fully penetrate the blood brain barrier and inhibit IDH1 and IDH2 mutant cancer cells. Under the terms of the AG-881 collaboration, Agios is eligible to receive contingent payments of up to $70 million based on the attainment of specified regulatory goals. We and Agios will jointly collaborate on the worldwide development program for AG-881, sharing development costs equally. The two companies will share profits equally, with Celgene recording commercial sales worldwide. Agios will lead commercialization in the U.S. with both companies sharing equally in field-based commercial activities, and we will lead commercialization ex-U.S. with Agios providing one third of field-based commercial activities in the major European Union (EU) markets.

In May 2016, we and one of our subsidiaries entered into a new global collaboration agreement with Agios (2016 Collaboration Agreement), focused on the research and development of immunotherapies against certain metabolic targets that exert their antitumor efficacy primarily via the immune system. In addition to new programs identified under the 2016 Collaboration Agreement, we and Agios have also agreed that all future development and commercialization of two programs that were conducted under the 2010 Collaboration Agreement will now be governed by the 2016 Collaboration Agreement.

During the term of the 2016 Collaboration Agreement, Agios plans to conduct research programs focused on discovering compounds that are active against metabolic targets in the immuno-oncology (IO) field. The initial four-year term will expire in May 2020. We may extend the term for up to two additional one-year terms or in specified cases, up to four additional years.

Under the 2016 Collaboration Agreement, Agios has granted us exclusive options to obtain development and commercialization rights for each program that we have designated for further development. We may exercise each such option beginning on the designation of a development candidate for such program (or on the designation of such program as a continuation program) and ending on the earlier of the end of a specified period after Agios has furnished us with specified information for such program, or January 1, 2030. Programs that have applications in the inflammation or autoimmune (I&I) field that may result from the 2016 Collaboration Agreement will also be subject to the exclusive options described above.

Summarized financial information related to Agios is presented below:

	Year ended December 31,					As of December 31,[1]		
	Research and Development Expense							
	Upfront Fees	Milestones	Extension/ Termination of Agreements	Amortization of Prepaid Research and Development	Equity Investments Made During Period	Intangible Asset Balance	Equity Investment Balance	Percentage of Outstanding Equity
2017	$ 8	$ —	$ —	$ —	$ 31	$ —	$ 335	12.0 %
2016	200	25	—	1	—	—	219	12.4 %
2015	9	—	—	—	—			
2014 and prior	121	—	60	—	89			

[1] Year-end balance and percentage of outstanding equity are presented for the current and prior year.

AstraZeneca PLC (AstraZeneca):

In April 2015, we entered into a strategic collaboration agreement with MedImmune Limited (MedImmune), a subsidiary of AstraZeneca, to develop and commercialize durvalumab, a novel anti-PD-L1 monoclonal antibody, for

hematologic malignancies. The agreement provides for a negotiation period to expand the agreement for other immuno-therapeutics. We lead clinical development across all new clinical trials within the collaboration and are responsible for all costs associated with such trials until December 31, 2016, after which we will be responsible for 75 percent of those costs. We also will be responsible for the global commercialization of approved durvalumab indications in hematology, and will receive royalty rates starting at 70 percent of worldwide sales from all uses in hematology. Royalty rates will decrease gradually to 50 percent over a period of 4 years after the start of commercial sales. The agreement may be terminated at our discretion upon nine months' prior written notice to MedImmune, and by either party upon material breach of the other party, subject to cure periods. The agreement, if not terminated sooner, expires upon the expiration of all applicable royalty terms under such agreement.

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Summarized financial information related to AstraZeneca is presented below:

	Year ended December 31,					As of December 31,		
	Research and Development Expense							
	Upfront Fees	Milestones	Extension/ Termination of Agreements	Amortization of Prepaid Research and Development	Equity Investments Made During Period	Intangible Asset Balance	Equity Investment Balance	Percentage of Outstanding Equity
2017	$ —	$ —	$ —	$ —	$ —	$ —	n/a	n/a
2016	—	—	—	—	—	—	n/a	n/a
2015	450	—	—	—	—			

BeiGene, Ltd. (BeiGene):

On July 5, 2017, we entered into a strategic collaboration to develop and commercialize BeiGene's investigational anti-programmed cell death protein-1 (PD-1) inhibitor, BGB-A317, for patients with solid tumor cancers in the United States, Europe, Japan and the rest of the world outside of Asia. BeiGene will retain exclusive rights for the development and commercialization of BGB-A317 for hematological malignancies globally and for solid tumors in Asia (with the exception of Japan). BeiGene acquired our commercial operations in China and gained an exclusive license to commercialize our approved therapies in China - ABRAXANE®, REVLIMID® and VIDAZA®. See Note 2 for additional details related to the divestiture of Celgene China. In addition, BeiGene was granted licensing rights in China to CC-122, under the same terms and conditions as our approved commercial products. CC-122 is a next generation CELMoD® agent currently in development by us for relapsed / refractory multiple myeloma, lymphoma and hepatocellular carcinoma. This transaction closed on August 31, 2017.

The license arrangement will expire in its entirety on the later of (a) expiration of the last valid claim that covers the composition of matter or method of use of the last licensed product, (b) expiration of regulatory exclusivity for the last licensed product or (c) twelve years after the first commercial sale of the last licensed product.

The license agreement may be terminated by us, at our sole discretion, or by either party, among other things upon material breach by the other party. The supply arrangement has an initial term of ten years, which can be extended upon the mutual agreement of both parties.

Summarized financial information related to BeiGene is presented below:

	Year ended December 31,					As of December 31,[1]		
	Research and Development Expense							
	Upfront Fees	Milestones	Extension/ Termination of Agreements	Amortization of Prepaid Research and Development	Equity Investments Made During Period	Intangible Asset Balance	Equity Investment Balance	Percentage of Outstanding Equity
2017	$ 268	$ —	$ —	$ —	$ 174	$ —	$ 246	5.5 %

[1] Year-end balance and percentage of outstanding equity are presented for the current year.

bluebird bio, Inc. (bluebird)

In June 2015, we amended and restated the March 2013 collaboration agreement with bluebird. The amended and restated collaboration focuses on the discovery, development and commercialization of novel disease-altering gene therapy product candidates targeting BCMA. BCMA is a cell surface protein that is expressed in normal plasma cells

and in most multiple myeloma cells, but is absent from other normal tissues. The collaboration applies gene therapy technology to modify a patient's own T cells, known as chimeric antigen receptor (CAR) T cells, to target and destroy cancer cells that express BCMA. We have an option to license any anti-BCMA products resulting from the collaboration after the completion of a phase I clinical study by bluebird.

Under the amended and restated collaboration agreement bluebird developed the lead anti-BCMA product candidate (bb2121) through a phase I clinical study and will develop next-generation anti-BCMA product candidates. The payment was recorded as prepaid research and development on the balance sheet and is being recognized as expense as development work is performed. Upon exercising our option to license a product and achievement of certain milestones, we may be obligated to pay up to $230 million per licensed product in aggregate potential option fees and clinical and regulatory milestone payments. bluebird also has the option to participate in the development and commercialization of any licensed products resulting from the collaboration through a 50/50 co-development and profit share in the United States in exchange for a reduction of milestone payments. Royalties would also be paid to bluebird in regions where there is no profit share, including in the United States, if bluebird declines to

CELGENE CORPORATION AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS – (Continued)

exercise their co-development and profit sharing rights. In February 2016, we exercised our option to license bb2121. In December 2017, bluebird notified us of their intention to enter into a 50/50 co-development and profit share in the United States for bb2121.

We have the ability to terminate the collaboration at our discretion upon 90 days written notice to bluebird. If a product is optioned, the parties will enter into a pre-negotiated license agreement and potentially a co-development agreement should bluebird exercise its option to participate in the development and commercialization in the United States. The license agreement, if not terminated sooner, would expire upon the expiration of all applicable royalty terms under the agreement with respect to the particular product, and the co-development agreement, if not terminated sooner, would expire when the product is no longer being developed or commercialized in the United States. Upon the expiration of a particular license agreement, we will have a fully paid-up, royalty-free license to use bluebird intellectual property to manufacture, market, use and sell such licensed product. As of December 31, 2017, we have entered into two such license agreements with bluebird for bb2121 and bb21217.

Summarized financial information related to bluebird is presented below:

	Year ended December 31,					As of December 31,[1]		
	Research and Development Expense							
	Upfront Fees	Milestones	Extension/ Termination of Agreements	Amortization of Prepaid Research and Development	Equity Investments Made During Period	Intangible Asset Balance	Equity Investment Balance	Percentage of Outstanding Equity
2017	$ 15	$ —	$ —	$ 8	$ 37	$ 4	$ 171	1.9 %
2016	10	—	—	8	50	12	41	1.6 %
2015	—	—	—	5	—			
2014 and prior	75	—	—	—	—			

[1] Year-end balance and percentage of outstanding equity are presented for the current year.

FORMA Therapeutics Holdings LLC (FORMA):

In April 2013, we entered into a collaboration agreement with FORMA to discover, develop and commercialize drug candidates to regulate protein homeostasis targets. Protein homeostasis, which is important in oncology, neurodegenerative and other disorders, involves a tightly regulated network of pathways controlling the biogenesis, folding, transport and degradation of proteins.

The collaboration enables us to evaluate selected targets and lead assets in protein homeostasis pathways during the pre-clinical phase. Based on such evaluation, we have the right to obtain exclusive licenses with respect to the development and commercialization of multiple drug candidates outside of the United States, in exchange for research and early development payments of up to approximately $200 million to FORMA. Under the terms of the collaboration agreement, FORMA is incentivized to advance the full complement of drug candidates through phase I, while Celgene is responsible for all further global clinical development for each licensed candidate. FORMA is eligible to receive up to an additional $315 million in potential payments based upon development, regulatory and sales objectives for the first ex-U.S. license. FORMA is also eligible to receive potential payments for successive licenses, which escalate for productivity, increasing up to a maximum of an additional $430 million per program. In addition, FORMA will receive royalties on ex-U.S. sales and additional payments if multiple drug candidates reach defined cumulative sales objectives. The collaboration agreement includes provisions for Celgene to obtain rights with respect to development and commercialization of drug candidates inside the United States in exchange for additional payments.

Under the collaboration, the parties perform initial research and development for a term of four years. If, during such research term, a drug candidate meets certain criteria, then the parties enter into a pre-negotiated license agreement and the collaboration continues until all license agreements have expired and all applicable royalty terms under the collaboration with respect to the particular products have expired. Each license agreement, if not terminated sooner, expires upon the expiration of all applicable royalty terms under such agreement. Upon the expiration of each license agreement, we will have an exclusive, fully-paid, royalty-free license to use the applicable FORMA intellectual property to manufacture, market, use and sell the product developed under such agreement outside of the United States. As of December 31, 2017, we have entered into seven such license agreements with FORMA.

On March 21, 2014, we entered into a second collaboration arrangement with FORMA (March 2014 Collaboration), pursuant to which FORMA granted us an option to license the rights to select current and future FORMA drug candidates during a term of three and one-half years. In addition, with respect to each licensed drug candidate, we have the obligation to pay designated amounts when certain development, regulatory and sales milestone events occur, with such amounts being variable and contingent on various factors. With respect to each licensed drug candidate, we will assume responsibility for all global development activities and costs after completion of phase I clinical trials. FORMA will retain U.S. rights to all such licensed assets, including responsibility

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NOTES TO CONSOLIDATED FINANCIAL STATEMENTS – (Continued)

for manufacturing and commercialization. As of December 31, 2017, we have entered into two such license agreements with FORMA under the second collaboration. Under this collaboration arrangement, we also have an option to enter into up to two additional collaborations for additional payments totaling approximately $375 million.

During July 2017, we entered into the first of the two additional collaborations. FORMA granted us an option to license the worldwide rights (except the U.S.) to select current and future drug candidates for the next two years and three months (or through October 1, 2019). In addition, with respect to each licensed drug candidate, we have the same rights and obligations as under the March 2014 Collaboration.

If we exercise our option to enter into an additional collaboration pursuant to the March 2014 Collaboration, we will receive an exclusive option to acquire FORMA, including the U.S. rights to all licensed drug candidates, and worldwide rights to other wholly-owned assets within FORMA at that time.

Summarized financial information related to FORMA is presented below:

	Year ended December 31,					As of December 31,		
	Research and Development Expense							
	Upfront Fees	Milestones	Extension/ Termination of Agreements	Amortization of Prepaid Research and Development	Equity Investments Made During Period	Intangible Asset Balance	Equity Investment Balance	Percentage of Outstanding Equity
2017	$246	$ 25	$ —	$ —	$ —	$ —	n/a	n/a
2016	71	—	—	—	—	—	n/a	n/a
2015	59	—	—	—	—			
2014 and prior	278	—	—	—	—			

Jounce Therapeutics, Inc. (Jounce):

In July 2016, we entered into a collaboration agreement with Jounce for the development and commercialization of immunotherapies for cancer, including Jounce's lead product candidate, JTX-2011, targeting ICOS (the Inducible T cell CO-Stimulator), up to four early stage programs to be selected from a defined pool of B cell, T regulatory cell and tumor-associated macrophage targets emerging from Jounce's research platform, and a Jounce checkpoint immuno-oncology program. Under the terms of the collaboration agreement Jounce is eligible to receive regulatory, development and net sales milestone payments.

We have the right to opt into the collaboration programs at defined stages of development. Following opt-in, the parties will share U.S. profits and losses on the collaboration programs as follows: (a) Jounce will retain a 60 percent U.S. profit share of JTX-2011, with 40 percent allocated to us; (b) Jounce will retain a 25 percent U.S. profit share on the first additional program, with 75 percent allocated to us; and (c) the parties will equally share U.S. profits on up to three additional programs. Also, following opt-in to each of the foregoing programs, we will receive exclusive ex-U.S. commercialization rights with respect to such program, Jounce will be eligible to receive tiered royalties on sales outside the United States, and development costs will be shared by the parties in a manner that is commensurate with their respective product rights under such program. The parties will equally share global profits from the checkpoint program.

The collaboration agreement has an initial term of 4 years, which may be extended up to three additional years. If the parties enter into any pre-negotiated license or co-commercialization agreement during the initial term, the collaboration agreement will continue until all such license and co-commercialization agreements have expired. The collaboration agreement may be terminated at our discretion upon 120 days prior written notice to Jounce and by either party upon material breach of the other party, subject to cure periods.

Summarized financial information related to Jounce is presented below:

	Year ended December 31,					As of December 31,[1]		
	Research and Development Expense							
	Upfront Fees	Milestones	Extension/ Termination of Agreements	Amortization of Prepaid Research and Development	Equity Investments Made During Period	Intangible Asset Balance	Equity Investment Balance	Percentage of Outstanding Equity
2017	$ —	$ —	$ —	$ —	$ 10	$ —	$ 44	10.7 %
2016	238	—	—	—	24	—	24	11.4 %

[1] Year-end balance and percentage of outstanding equity are presented for the current and prior year.

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Juno Therapeutics, Inc. (Juno):

In June 2015, we announced a collaboration and investment agreement with Juno for the development and commercialization of immunotherapies for cancer and autoimmune diseases. The collaboration and investment agreement became effective on July 31, 2015. Under the terms of the agreement, we have the option to be the commercialization partner for Juno's oncology and cell therapy auto-immune product candidates, including Juno's CD19 and CD22 directed CAR T cell product candidates. For Juno-originated programs co-developed under the collaboration, (a) Juno will be responsible for research and development in North America and will retain commercialization rights in those territories, (b) we will be responsible for development and commercialization in the rest of the world, and will pay Juno a royalty on sales in those territories, and (c) we have certain co-promotion options for global profit sharing arrangements under which the parties will share worldwide expenses and profits equally, except in China.

Juno will have the option to enter into co-development and co-commercialization arrangements on certain Celgene-originated development candidates that target T cells. For any such Celgene-originated programs co-developed under the collaboration, (a) the parties will share global costs and profits, with 70 percent allocated to us and 30 percent allocated to Juno, and (b) we will lead global development and commercialization, subject to a Juno co-promote option in the US and certain EU territories.

Upon closing, we made a $1.0 billion payment to Juno, of which $575 million was recorded to research and development expense as a collaboration-related upfront expense and the balance of the payment was recorded as an equity investment in Marketable securities available-for-sale.

The collaboration agreement has an initial term of 10 years. If the parties enter into any pre-negotiated license or co-commercialization agreement during the initial term, the collaboration agreement will continue until all such license and co-commercialization agreements have expired. The collaboration agreement may be terminated at our discretion upon 120 days prior written notice to Juno and by either party upon material breach of the other party, subject to cure periods. In April 2016, we exercised our option to develop and commercialize Juno's CD19 program outside North America and China and entered into a pre-negotiated license agreement with Juno with respect to such program.

On January 21, 2018, we entered into a merger agreement with Juno under which we will pay $87 per share in cash, or approximately $9.0 billion net of cash and marketable securities acquired and Juno shares already owned by us (approximately 9.7%of outstanding shares). See Note 21 of Notes to Consolidated Financial Statements contained in this Annual Report on Form 10-K for additional information relating to the proposed acquisition.

Summarized financial information related to Juno is presented below:

	Year ended December 31,					As of December 31,[1]		
	Research and Development Expense							
	Upfront Fees	Milestones	Extension/ Termination of Agreements	Amortization of Prepaid Research and Development	Equity Investments Made During Period	Intangible Asset Balance	Equity Investment Balance[2]	Percentage of Outstanding Equity
2017	$ —	$ —	$ —	$ —	$ 33	$ —	$ 508	9.7 %
2016	50	—	—	—	41	—	194	9.7 %
2015	575	—	—	—	425			

[1] Year-end balance and percentage of outstanding equity are presented for the current and prior year.

[2] See Note 6 for additional information relating to our equity investment balance in Juno.

Lycera Corp. (Lycera):

In June 2015, we entered into a collaboration and option agreement with Lycera. Under the agreement, the parties will support the development of Lycera's portfolio of immune modulator assets, including (1) oral agonists that target ROR , a master control switch of immune system activation, for the potential treatment of a broad range of cancers, and (2) LYC-30937, an oral gut-directed ATPase modulator currently in phase II clinical studies. In addition, we have an exclusive right to acquire Lycera at a later date at a purchase price based upon future independent company valuations.

Lycera has developed orally bioavailable ROR agonists that have demonstrated single agent therapeutic activity in multiple animal models of cancer. Ex-vivo treatment with ROR agonist compounds has been shown to enhance the therapeutic benefit of adoptive T-cell therapy by improving both immune cell persistence and activation. Development of LYC-30937 is focused on the treatment

of inflammatory bowel disease, with the goal of delivering significant disease improvement without global immune suppression. Under the collaboration, Lycera will continue to advance its other programs.

Under the terms of the agreement, we received an exclusive option to license Lycera’s portfolio of ex-vivo ROR agonist compounds, an equity interest and an exclusive right to acquire Lycera. If we exercise the acquisition right, Lycera shareholders will also be eligible to receive future success-based milestone payments of up to $190 million.

The agreement has an initial term of three years and may be terminated earlier at our discretion upon six months’ prior written notice to Lycera and by either party upon material breach of the other party, subject to cure periods. In December 2015, we entered into a license agreement with Lycera, under which Lycera granted to us an exclusive license for Lycera’s portfolio of novel ex vivo ROR   agonist compounds.

In April 2017, we entered into a license agreement with Lycera, under which Lycera granted to us an exclusive license to Lycera’s ROR   antagonist compounds. Lycera is eligible to receive development and regulatory milestones, as well as tiered royalties based on annual net sales of licensed products.

Summarized financial information related to Lycera is presented below:

	Year ended December 31,					As of December 31,[1]		
	Research and Development Expense							
	Upfront Fees	Milestones	Extension/ Termination of Agreements	Amortization of Prepaid Research and Development	Equity Investments Made During Period	Intangible Asset Balance	Equity Investment Balance[2]	Percentage of Outstanding Equity
2017	$ 14	$ —	$ —	$ —	$ 3	$ 3	$ 13	10.0 %
2016	—	—	—	—	—	3	10	8.0 %
2015	87	—	—	—	10			

[1] Year-end balance and percentage of outstanding equity are presented for the current and prior year.

NantBioScience, Inc. (NantBioScience):

In January 2014, we entered into a collaboration agreement with NantBioScience, an entity controlled by Dr. Patrick Soon-Shiong in which Celgene contributed $75 million of cash, the rights to the future royalty stream based on net sales of certain products of Active Biomaterials, LLC, another entity controlled by Dr. Patrick Soon-Shiong, and licenses to two nab® product candidates. In return, Celgene received a 14 percent preferred equity ownership in NantBioScience, an option to license a certain number of product candidates developed by NantBioScience, including the two nab® product candidates that Celgene is licensing to NantBioScience, and the parent company of NantBioScience assumed, and agreed to pay and satisfy when due, our obligation to pay The Chan Soon-Shiong Institute for Advanced Health (CSS Institute) $50 million in contingent, matching contributions. The transaction became effective in March 2014. Unless Celgene terminates the collaboration earlier, in Celgene’s sole discretion upon 30 days written notice, the collaboration will continue until the earliest to occur of: (a) Celgene licensing four NantBioScience product candidates; (b) NantBioScience presenting data packages for ten product candidates; and (c) the date which is 10 years after the effective date. Regardless of any termination of the collaboration, the 14 percent preferred equity ownership in NantBioScience and the assumption of the $50 million in contingent, matching contributions by the parent company of NantBioScience remain in effect.

Summarized financial information related to NantBioScience is presented below:

Year ended December 31,	As of December 31,[1]

	Research and Development Expense							
	Upfront Fees	Milestones	Extension/ Termination of Agreements	Amortization of Prepaid Research and Development	Equity Investments Made During Period	Intangible Asset Balance	Equity Investment Balance[2]	Percentage of Outstanding Equity
2017	$ —	$ —	$ —	$ —	$ —	$ —	$ 90	12.9 %
2016	—	—	—	—	—	—	90	12.9 %
2015	—	—	—	—	—			
2014 [2]	50	—	—	—	90			

[1] Year-end balance and percentage of outstanding equity are presented for the current and prior year.
[2] $25 million of expense related to the settlement of contingent matching contributions was also recognized in 2014 at the inception of the collaboration agreement with NantBioScience and included in Selling, general and administrative expense.

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CELGENE CORPORATION AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS – (Continued)

Nurix, Inc. (Nurix):

In September 2015, we entered into a strategic collaboration agreement with Nurix for the discovery, development and commercialization of novel small molecule therapeutics in oncology and inflammation and immunology. Nurix will work exclusively with us in these therapeutic areas to advance new therapies that function through the ubiquitin proteasome system (UPS) to modulate protein homeostasis, a fundamental cellular process controlling protein levels.

Under the terms of the collaboration, we received an option to license future programs and received an 11% equity interest in Nurix. The option term for each of these programs is the earlier of either (a) 45 days after the delivery of a phase I data package, or (b) four years, which period we may extend twice for the payment of additional fees. During the term, Nurix may focus on investigating E3 ubiquitin ligases and E2 conjugating enzymes to identify the most promising drug discovery programs for use in oncology or inflammation and immunology therapeutic applications. Nurix will control and is responsible for all drug discovery and development activities through the end of phase I clinical trials.

We may opt to license global development and commercialization rights to a program in exchange for an option fee, potential clinical, regulatory and sales milestone payments totaling up to $405 million, as well as future tiered single-digit to low double-digit royalties on global sales. We would also have worldwide rights to collaboration products, with the exception of certain collaboration products for which Nurix would retain U.S. development and commercialization rights. These rights include the opportunity for the companies to co-develop and co-commercialize up to two programs in the U.S., sharing profits and losses equally, and we would retain ex-US rights, in exchange for an option fee, milestone payments and royalties on ex-U.S. sales on a program-by-program basis. For candidates not optioned by us under the collaboration, Nurix would retain worldwide right.

Summarized financial information related to Nurix is presented below:

	Year ended December 31,					As of December 31,[1]		
	Research and Development Expense							
	Upfront Fees	Milestones	Extension/ Termination of Agreements	Amortization of Prepaid Research and Development	Equity Investments Made During Period	Intangible Asset Balance	Equity Investment Balance[2]	Percentage of Outstanding Equity
2017	$ —	$ —	$ —	$ —	$ —	$ —	$ 17	10.3 %
2016	—	—	—	—	—	—	17	10.5 %
2015	150	—	—	—	17			

[1] Year-end balance and percentage of outstanding equity are presented for the current and prior year.

OncoMed Pharmaceuticals, Inc. (OncoMed):

On December 2, 2013, we entered into a collaboration agreement to jointly develop and commercialize up to six anti-cancer stem cell (CSC) product candidates from OncoMed's biologics pipeline. OncoMed will control and conduct initial clinical studies. The research term ended on December 2, 2017, and we will have an option to license worldwide rights to up to six novel anti-CSC therapeutic candidates commencing upon the completion of enrollment of patients in a phase I trial (and with respect to demcizumab, a phase II trial) and ending 60 days after delivery by OncoMed of the applicable data package for each therapeutic candidate, subject to certain extensions.

The current collaboration includes up to three phase Ia, preclinical- or discovery-stage biologics programs: OncoMed's anti-DLL4/VEGF bispecific antibody and up to two additional biologics programs targeting either the RSPO-LGR

CSC pathway or another CSC pathway. We have exclusive options on these programs during or after completion of certain phase I clinical trials to be conducted by OncoMed, which if exercised, contain U.S. profit sharing and co-commercialization terms, plus one-third OncoMed and two-thirds Celgene global development cost-sharing and royalties outside the profit-sharing territory.

The collaboration agreement also includes option exercise payments and payments for achievement of development, regulatory and commercial milestones, paid on a per-program basis. For the anti-DLL4/VEGF bispecific antibody program, contingent payments could total up to $505 million. For the other two programs, each program is eligible for up to approximately $440 million of contingent payments.

The collaboration agreement may be terminated by us on a program-by-program basis upon 120 days prior written notice before exercise of that program option, and after such program option exercise, by either party for material breach by the other party. With certain exceptions, the collaboration agreement expires upon the later of (a) the last-to-expire option term and (b) if one or more options are exercised, the termination or expiration of the last to expire agreement with respect to such exercised option.

CELGENE CORPORATION AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS – (Continued)

Summarized financial information related to OncoMed is presented below:

	Year ended December 31,					As of December 31,[1]		
	Research and Development Expense							
	Upfront Fees	Milestones	Extension/ Termination of Agreements	Amortization of Prepaid Research and Development	Equity Investments Made During Period	Intangible Asset Balance	Equity Investment Balance	Percentage of Outstanding Equity
2017	$ —	$ —	$ —	$ —	$ —	$ —	$ 12	7.8 %
2016	—	—	—	—	15	—	23	8.0 %
2015	3	70	—	—	—			
2014 and prior	158	—	—	—	22			

[1] Year-end balance and percentage of outstanding equity are presented for the current and prior year.

Sutro Biopharma, Inc. (Sutro):

In December 2012, we entered into a collaboration and license agreement with Sutro for the development of an antibody drug conjugate (ADC) and a bispecific antibody construct (BAC). Sutro controls and conducts initial development activities. We have the right to select one ADC among a number of different sequence-payload combinations and positional variants, and one BAC. Sutro is obligated to provide adequate quantities of any selected ADC and selected BAC to allow us to conduct all necessary preclinical studies, including toxicology and pharmacokinetics studies. Under the terms of the 2012 agreement, Celgene received an equity investment and other rights. This agreement terminated in August 2017.

In September 2014, we entered into a second collaboration and license agreement with Sutro to jointly develop up to six prioritized anti-cancer BACs and/or ADCs directed primarily to immune-oncology targets. Sutro will control and conduct initial development activities. We have the right to advance any BAC and/or ADC to investigational new drug (IND)-enabling studies or to designate it as a development candidate, and in either case, we would then have the sole right and responsibility for development activities, although Sutro would still have certain limited manufacturing and supply obligations.

Under the terms of the 2014 agreement, Celgene received an equity investment that increased our ownership to approximately 15%, rights with respect to manufacturing and supply of BAC and ADC development candidates, and an option to acquire all of the outstanding equity of Sutro based on a pre-specified valuation procedure. The option is exercisable beginning September 2016 and expires upon the termination of the research term (as extended).

We have the right to obtain access to Sutro's proprietary protein expression platform to use in conjunction with our intellectual property. Additionally, we have the right to have Sutro evaluate the performance of certain monospecific ADCs directed against up to five non-natural amino acid targets, and reengineer, express, and provide antibodies which incorporate a single non-natural amino acid sequence in a number of preferred locations.

The research term of the collaboration and license agreement is three years, with an extension available for an additional one-and-a-half years for a payment of an additional fee. We have worldwide commercialization rights for development candidates in which at least one binding domain is directed to a certain undisclosed target, plus the first development candidate which does not include at least one binding domain directed to that certain undisclosed target but which achieves IND clearance in the U.S. For all other development candidates, Sutro has U.S. rights, while we have all ex-U.S. rights.

Under the terms of the 2014 agreement, Sutro is eligible to receive research and manufacturing milestones of up to $75 million, clinical development and regulatory approval milestones of up to $275 million for each compound selected under the collaboration if approved in multiple indications, as well as tiered royalties based on annual net sales of licensed products.

The collaboration and license agreement may be terminated by us at our discretion on a program-by-program basis upon 120 days prior written notice, or by either party for material breach, intellectual property challenge, or bankruptcy by the other party. With certain exceptions, the collaboration and license agreement expires in its entirety upon the expiration of all applicable royalty terms under the Agreement.

In August 2017, we amended and restated the September 2014 collaboration agreement with Sutro. Under the amended and restated collaboration, the option to acquire Sutro has been terminated and we received the right to advance a second BAC and/or ADC to IND-enabling studies or to designate it as a development candidate. To acquire worldwide rights to the second program to reach IND status, Celgene must make a specified payment to Sutro. Sutro continues to be entitled to development and regulatory milestone payments and royalties.

CELGENE CORPORATION AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS – (Continued)

Summarized financial information related to Sutro is presented below:

	Year ended December 31, Research and Development Expense					As of December 31,[1]		
	Upfront Fees	Milestones	Extension/ Termination of Agreements	Amortization of Prepaid Research and Development	Equity Investments Made During Period	Intangible Asset Balance	Equity Investment Balance	Percentage of Outstanding Equity
2017	$ —	$ 10	$ 13	$ 4	$ —	$ —	$ 18	15.4 %
2016	—	35	—	17	—	6	18	15.4 %
2015	—	—	—	5	—			
2014 and prior	99	—	—	3	18			

[1] Year-end balance and percentage of outstanding equity are presented for the current and prior year.

Other Collaboration Arrangements in 2017:

In addition to the collaboration arrangements described above, we entered into a number of collaborative arrangements during 2017 that include the potential for future milestone payments of up to an aggregate $230 million related to the attainment of specified developmental, regulatory and sales milestones over a period of several years. Our obligation to fund these efforts is contingent upon our continued involvement in the programs and/or the lack of any adverse events which could cause the discontinuance of the programs.

Summarized financial information related to our other collaboration arrangements is presented below:

	Year ended December 31, Research and Development Expense					As of December 31,[1]		
	Upfront Fees	Milestones	Extension/ Termination of Agreements	Amortization of Prepaid Research and Development	Equity Investments Made During Period	Intangible Asset Balance	Equity Investment Balance	Percentage of Outstanding Equity
2017	$215	$ —	$ 7	$ —	$ 7	$5	$ 91	n/a
2016	247	1	9	—	8	1	80	n/a
2015	70	8	18	21	65			

[1] Year-end balance is presented for the current and prior year.

18. Commitments and Contingencies

Contingent Value Rights: In connection with the acquisition of Abraxis in 2010, CVRs were issued under a Contingent Value Rights Agreement, or CVR Agreement, entered into between Celgene and American Stock Transfer & Trust Company, LLC, as trustee. The CVRs are registered for trading on the NASDAQ Global Market under the symbol "CELGZ." The fair value of the liability of the Company related to payments under the CVR Agreement are subject to fluctuation based on trading prices for the publicly traded CVRs. Subsequent to the Abraxis acquisition date, we measured the contingent consideration represented by the CVRs at fair value with changes in fair value recognized in operating earnings. The fair value of our liability related to the CVRs was $42 million and $45 million as of December 31, 2017 and 2016, respectively, which was recorded in Other non-current liabilities on our Consolidated Balance Sheets.

For each full one-year period ending December 31 during the term of the CVR Agreement, which we refer to as a net sales measuring period, each holder of a CVR is entitled to receive a pro rata portion, based on the number of CVRs then outstanding, of net sales related payments, calculated as follows:

- 2.5% of the net sales of ABRAXANE® and the Abraxis pipeline products that exceed $1.0 billion but are less than or equal to $2.0 billion for such period, plus
- an additional amount equal to 5% of the net sales of ABRAXANE® and the Abraxis pipeline products that exceed $2.0 billion but are less than or equal to $3.0 billion for such period, plus
- an additional amount equal to 10% of the net sales of ABRAXANE® and the Abraxis pipeline products that exceed $3.0 billion for such period.

No payments will be due under the CVR Agreement with respect to net sales of ABRAXANE® and the Abraxis pipeline products after December 31, 2025, which we refer to as the net sales payment termination date, unless net sales for the net sales measuring period ending on December 31, 2025 are equal to or greater than $1.0 billion, in which case the net sales payment termination

date will be extended until the last day of the first net sales measuring period subsequent to December 31, 2025 during which net sales of ABRAXANE® and the Abraxis pipeline products are less than $1.0 billion or, if earlier, December 31, 2030.

In addition to the above, each holder of a CVR was entitled to receive a pro rata portion of two potential contingent milestone payments. The first contingent milestone payment was not achieved, as the October 2012 FDA approval of ABRAXANE® for use in the treatment of NSCLC did not result in the use of a marketing label that included a progression-free survival claim. The second contingent milestone payment was achieved upon the FDA approval of ABRAXANE® for use in the treatment of pancreatic cancer permitting us to market with a label that included an overall survival claim. This approval resulted in a subsequent payment of $300 million to CVR holders in October 2013.

Leases: We lease offices and research facilities under various operating lease agreements in the United States and international markets. We also lease automobiles and certain equipment in these same markets. As of December 31, 2017, the non-cancelable lease terms for the operating leases expire at various dates between 2018 and 2025 and include renewal options. In general, the Company is also required to reimburse the lessors for real estate taxes, insurance, utilities, maintenance and other operating costs associated with the leases.

Future minimum lease payments under non-cancelable operating leases as of December 31, 2017 are:

	Operating Leases
2018	$ 56
2019	48
2020	41
2021	31
2022	26
Thereafter	33
Total minimum lease payments	$ 235

Total rental expense under operating leases was approximately $69 million in 2017, $70 million in 2016 and $66 million in 2015.

Lines of Credit: We maintain lines of credit with several banks to support our hedging programs and to facilitate the issuance of bank letters of credit and guarantees on behalf of our subsidiaries. Lines of credit supporting our hedging programs as of December 31, 2017 allowed us to enter into derivative contracts with settlement dates through 2020. As of December 31, 2017, we have entered into derivative contracts with net notional amounts totaling $10.3 billion. Lines of credit facilitating the issuance of bank letters of credit and guarantees as of December 31, 2017 allowed us to have letters of credit and guarantees issued on behalf of our subsidiaries totaling $224 million.

Other Commitments: Our obligations related to product supply contracts totaled $748 million at December 31, 2017. In addition, we have committed to invest an aggregate $47 million in investment funds, which are callable at any time.

2017 Tax Act: During the fourth quarter of 2017, we recorded an income tax expense of $1,890 million which represents the toll charge liability for the deemed repatriation of earnings and profits. We have elected to pay the toll charge in installments over eight years, or through 2025, however, the liability is not discounted on our financial statements. As such, we have recorded $1,732 million and $150 million as a non-current and current income tax liability, respectively, as of December 31, 2017. See Note 16 for additional information related to the 2017 Tax Act.

Collaboration Arrangements: We have entered into certain research and development collaboration agreements, as identified in Note 17 above, with third parties that include the funding of certain development, manufacturing and commercialization efforts with the potential for future milestone and royalty payments upon the achievement of pre-established developmental, regulatory and/or commercial targets. Our obligation to fund these efforts is contingent upon continued involvement in the programs and/or the lack of any adverse events which could cause the discontinuance of the programs. Due to the nature of these arrangements, the future potential payments are inherently uncertain, and accordingly no amounts have been recorded for the potential future achievement of these targets in our accompanying Consolidated Balance Sheets as of December 31, 2017 and 2016.

Contingencies: We believe we maintain insurance coverage adequate for our current needs. Our operations are subject to environmental laws and regulations, which impose limitations on the discharge of pollutants into the air and water and establish standards for the treatment, storage and disposal of solid and hazardous wastes. We review the effects of such laws and regulations

on our operations and modify our operations as appropriate. We believe we are in substantial compliance with all applicable environmental laws and regulations.

We have ongoing customs, duties and VAT examinations in various countries that have yet to be settled. Based on our knowledge of the claims and facts and circumstances to date, none of these matters, individually or in the aggregate, are deemed to be material to our financial condition.

Legal Proceedings:

Like many companies in our industry, we have from time to time received inquiries and subpoenas and other types of information requests from government authorities and others and we have been subject to claims and other actions related to our business activities. While the ultimate outcome of investigations, inquiries, information requests and legal proceedings is difficult to predict, adverse resolutions or settlements of those matters may result in, among other things, modification of our business practices, product recalls, costs and significant payments, which may have a material adverse effect on our results of operations, cash flows or financial condition.

Pending patent proceedings include challenges to the scope, validity and/or enforceability of our patents relating to certain of our products, uses of products or processes. Further, as certain of our products mature or they near the end of their regulatory exclusivity periods, it is more likely that we will receive challenges to our patents, and in some jurisdictions we have received such challenges. We are also subject, from time to time, to claims of third parties that we infringe their patents covering products or processes. Although we believe we have substantial defenses to these challenges and claims, there can be no assurance as to the outcome of these matters and an adverse decision in these proceedings could result in one or more of the following: (i) a loss of patent protection, which could lead to a significant reduction of sales that could materially affect our future results of operations, cash flows or financial condition (ii) our inability to continue to engage in certain activities, and (iii) significant liabilities, including payment of damages, royalties and/or license fees to any such third party.

Among the principal matters pending are the following:

Patent-Related Proceedings:

REVLIMID®: In 2012, our European patent EP 1 667 682 (the ’682 patent) relating to certain polymorphic forms of lenalidomide expiring in 2024 was opposed in a proceeding before the European Patent Office (EPO) by Generics (UK) Ltd. and Teva Pharmaceutical Industries Ltd. On July 21, 2015, the EPO determined that the ’682 patent was not valid. Celgene appealed the EPO ruling to the EPO Board of Appeal, thereby staying any revocation of the patent until the appeal is finally adjudicated. No appeal hearing date has been set.

In 2010, Celgene’s European patent EP 1 505 973 (the ’973 patent) relating to certain uses of lenalidomide expiring in 2023 was opposed in a proceeding before the EPO by Synthon B.V. and an anonymous party. On February 25, 2013, the EPO determined that the ’973 patent was not valid. Celgene appealed the EPO ruling to the EPO Board of Appeal, which appeal was withdrawn on November 28, 2017. Accordingly, there will be no further action in this case.

We believe that our patent portfolio for lenalidomide in Europe, including the composition of matter patent which expires in 2022, is strong. Notwithstanding the withdrawal of the appeal relating to the ’973 patent, in the event that we do not prevail on the appeal relating to the ’682 patent, we still expect that we will have protection in the EU for lenalidomide through at least 2022.

We received a letter dated June 26, 2017 from Accord Healthcare Ltd. (Accord) notifying us of Accord’s filing of three individual lawsuits against us in the United Kingdom (UK) seeking to commence patent revocation proceedings originally for three UK patents (which was amended later to include a recently-granted, related divisional patent for a total of four challenged UK patents). The patents named in the lawsuit, which was filed in the High Court of Justice in London, are EP (UK) 0925294 and its associated SPC (the ’294 patent), EP (UK) 1505973 (the ’973 patent); EP (UK) 2915533 (the ’533 patent) and EP (UK) 1 667 682 (the ’682 patent), all claiming aspects of REVLIMID®. The Court has set separate trial dates for each patent. The ’294 patent trial will begin between October 1-5, 2018; the ’973 and ’533 (combined) patents have been abandoned; and the ’682 patent trial will begin on November 26, 2018. These proceedings are limited to the patents granted in the UK. We intend to vigorously defend our intellectual property rights in these matters.

We received a Notice of Allegation dated June 13, 2017 from Dr. Reddy’s Laboratories Ltd. (DRL) notifying us of the filing of DRL’s Abbreviated New Drug Submission (ANDS) with Canada’s Minister of Health, with respect to Canadian Letters Patent Nos. 2,261,762; 2,476,983; 2,477,301; 2,537,092; 2,687,924; 2,687,927; 2,688,694; 2,688,695; 2,688,708; 2,688,709; 2,741,412;

and 2,741,575. DRL is seeking to manufacture and market a generic version of 2.5mg, 5mg, 10mg, 15mg, 20mg, and 25mg REVLIMID® (lenalidomide) capsules in Canada.

We commenced a court proceeding in the Federal Court of Canada on July 27, 2017, seeking an Order prohibiting the Minister of Health from granting marketing approval to DRL until expiry of these patents. We received a further Notice of Allegation dated September 20, 2017 from DRL relating to the same submission, but also referencing 2.5mg capsules. DRL's Notice of Allegation contains invalidity allegations relating to Canadian Letters Patent Nos. 2,537,092; 2,687,924; 2,687,927; 2,688,694; 2,688,695; 2,688,708; 2,688,709; 2,741,412; and 2,741,575. We commenced a court proceeding on November 2, 2017, seeking an order prohibiting the Minister of Health from granting marketing approval to DRL until expiry of these patents. The hearing for both applications is scheduled for September 23-24, 2019 and September 30 - October 3, 2019, respectively.

We received a Notice Letter dated September 9, 2016 from DRL notifying us of DRL's Abbreviated New Drug Application (ANDA) which contains Paragraph IV certifications against U.S. Patent Nos. 7,456,800; 7,855,217; 7,968,569; 8,530,498; 8,648,095; 9,101,621; and 9,101,622 that are listed in the FDA list of Approved Drug Products with Therapeutic Equivalence Evaluations, commonly referred to as the Orange Book (Orange Book) for REVLIMID®. DRL is seeking to manufacture and market a generic version of 2.5mg, 5mg, 10mg, 15mg, 20mg, and 25mg REVLIMID® (lenalidomide) capsules in the United States.

In response to the Notice Letter, we timely filed an infringement action against DRL in the United States District Court for the District of New Jersey on October 20, 2016. As a result of the filing of our action, the FDA cannot grant final approval of DRL's ANDA until the earlier of (i) a final decision that each of the patents is invalid, unenforceable, and/or not infringed; or (ii) March 10, 2019. On November 18, 2016, DRL filed an answer and counterclaims asserting that the patents-in-suit are invalid and/or not infringed. On December 27, 2016, we filed a reply to DRL's counterclaims. Fact discovery is set to close on May 31, 2018. The Court has not yet entered a schedule for expert discovery or trial. We subsequently received an additional Notice Letter from DRL dated June 8, 2017 notifying us of additional Paragraph IV certifications against U.S. Patent Nos. 7,189,740; 8,404,717; and 9,056,120 that are listed in the Orange Book for REVLIMID®. In response to the Notice Letter, we timely filed an infringement action against DRL in the United States District Court for the District of New Jersey on July 20, 2017. As a result of the filing of our action, the FDA cannot grant final approval of DRL's ANDA until the earlier of (i) a final decision that each of the patents is invalid, unenforceable, and/or not infringed; or (ii) December 9, 2019. On October 3, 2017, DRL filed an answer and counterclaims asserting that each of the patents are invalid and/or not infringed. We filed our reply to DRL's counterclaims on November 15, 2017. Fact discovery is set to close on March 15, 2019. The Court has not yet entered a schedule for expert discovery or trial.

We received a Notice Letter dated February 27, 2017 from Zydus Pharmaceuticals (USA) Inc. (Zydus) notifying us of Zydus' ANDA which contains Paragraph IV certifications against U.S. Patent Nos. 7,456,800; 7,855,217; 7,968,569; 8,530,498; 8,648,095; 9,101,621; and 9,101,622 that are listed in the Orange Book for REVLIMID®. Zydus is seeking to manufacture and market a generic version of 2.5 mg, 5 mg, 10 mg, 15 mg, 20 mg, and 25mg REVLIMID® (lenalidomide) capsules in the United States.

In response to the Notice Letter, we timely filed an infringement action against Zydus in the United States District Court for the District of New Jersey on April 12, 2017. As a result of the filing of our action, the FDA cannot grant final approval of Zydus' ANDA at least until the earlier of (i) a final decision that each of the patents is invalid, unenforceable, and/or not infringed; or (ii) August 28, 2019. On August 7, 2017, Zydus filed an answer and counterclaims asserting that each of the patents are invalid and/or not infringed. On September 11, 2017, we filed a reply to Zydus's counterclaims. Fact discovery is set to close on March 15, 2019. The Court has yet to enter a schedule

for expert discovery and trial.

We received a Notice Letter dated June 30, 2017 from Cipla LTD, India (Cipla) notifying us of Cipla's ANDA which contains Paragraph IV certifications against U.S. Patent Nos. 7,456,800; 7,855,217; 7,968,569; 8,530,498; 8,648,095; 9,101,621; and 9,101,622 that are listed in the Orange Book for REVLIMID®. Cipla is seeking to manufacture and market a generic version of 5mg, 10mg, 15mg, 20mg, and 25mg REVLIMID® (lenalidomide) capsules in the United States.

In response to the Notice Letter, on August 15, 2017, we timely filed an infringement action against Cipla in the United States District Court for the District of New Jersey. As a result of the filing of our action, the FDA cannot grant final approval of Cipla's ANDA until the earlier of (i) a final decision that each of the patents is invalid, unenforceable, and/or not infringed; or (ii) January 5, 2020. On October 13, 2017, DRL filed an answer and counterclaims asserting that each of the patents are invalid and/or not infringed. We filed our reply to Cipla's counterclaims on November 17, 2017. Fact discovery is set to close on March 15, 2019. The Court has yet to enter a schedule for expert discovery and trial.

We received a Notice Letter dated July 24, 2017 from Lotus Pharmaceutical Co., Inc. (Lotus) notifying us of Lotus's ANDA which contains Paragraph IV certifications against U.S. Patent Nos. 5,635,517; 6,315,720; 6,561,977; 6,755,784; 7,189,740; 7,456,800; 7,855,217; 7,968,569; 8,315,886; 8,404,717; 8,530,498; 8,626,531; 8,648,095; 9,056,120; 9,101,621; and 9,101,622 that are listed

in the Orange Book for REVLIMID®. Lotus is seeking to manufacture and market a generic version of 2.5mg, 5mg, 10mg, 15mg, 20mg, and 25mg REVLIMID® (lenalidomide) capsules in the United States.

In response to the Notice Letter, we timely filed an infringement action against Lotus in the United States District Court for the District of New Jersey on September 6, 2017. As a result of the filing of our action, the FDA cannot grant final approval of Lotus's ANDA until the earlier of (i) a final decision that each of the patents is invalid, unenforceable, and/or not infringed; or (ii) January 25, 2020. On October 5, 2017, Lotus filed an answer and counterclaims asserting that each of the patents are invalid and/or not infringed. We filed our reply to Lotus's counterclaims on November 9, 2017. Fact discovery is set to close on March 15, 2019. The Court has yet to enter a schedule for expert discovery and trial.

We received a Notice Letter dated November 28, 2017 from Apotex Inc. ("Apotex") notifying us of Apotex's ANDA, which contains Paragraph IV certifications against U.S. Patent Nos. 6,315,720; 6,561,977; 6,755,784; 7,456,800; 7,468,363; 7,855,217; 8,315,886; 8,626,531; and 8,741,929 that are listed in the Orange Book for REVLIMID®. Apotex is seeking to manufacture and market a generic version of 2.5mg, 5mg, 10mg, 15mg, 20mg, and 25mg REVLIMID® (lenalidomide) capsules in the United States.

In response to the Notice Letter, we timely filed an infringement action against Apotex in the United States District Court for the District of New Jersey on January 11, 2018. As a result of the filing of our action, the FDA cannot grant final approval of Apotex's ANDA until at least the earlier of (i) a final decision that each of the patents is invalid, unenforceable, and/or not infringed; or (ii) May 29, 2020. Apotex has not yet responded to the complaint, and the Court has not yet entered a schedule for fact discovery, expert discovery, or trial.

POMALYST®: In July 2015, our European patent EP 2 105 135 (the '135 patent) relating to certain pharmaceutical compositions for treating cancer expiring in 2023 was opposed in a proceeding before the EPO by Generics (UK) Ltd., Accord Healthcare Ltd., Hexal AG, IPS Intellectual Property Services, Synthon B.V., and Actavis Group PTC EHF. On December 19, 2016, the EPO determined that the '135 patent was not valid. Regulatory exclusivity for POMALYST® will expire in Europe in 2023.

We received a Notice Letter dated March 30, 2017 from Teva Pharmaceuticals USA, Inc. (Teva) notifying us of Teva's ANDA submitted to the FDA that contains Paragraph IV certifications against U.S. Patent Nos. 6,316,471; 8,198,262; 8,673,939; 8,735,428; and 8,828,427 that are listed in the Orange Book. Teva is seeking to manufacture and market a generic version of 1 mg, 2 mg, 3 mg, and 4 mg POMALYST® (pomalidomide) capsules in the United States. We later received similar Notice Letters (the Pomalidomide Notice Letters) from six other generic drug manufacturers - Par Pharmaceutical, Inc. (Par); Apotex, Inc. (Apotex); Hetero USA, Inc. (Hetero); Aurobindo Pharma Ltd. (Aurobindo); Mylan Pharmaceuticals Inc. (Mylan); and Breckenridge Pharmaceutical, Inc. (Breckenridge) - relating to these and other POMALYST® patents listed in the Orange Book.

In response to the Pomalidomide Notice Letters, we timely filed an infringement actions in the United States District Court for the District of New Jersey against Teva and Par on May 4, 2017 and against Apotex, Hetero, Aurobindo, Mylan, and Breckenridge on May 11, 2017. As a result of the filing of our actions, the FDA cannot grant final approval of these ANDAs at least until the earlier of (i) a final decision that each of the patents is invalid, unenforceable, and/or not infringed; or (ii) August 8, 2020.

On July 13, 2017, Apotex and Hetero each filed answers and counterclaims asserting that the patents-in-suit are invalid and/or not infringed, and further seeking declaratory judgments of noninfringement and invalidity for additional Celgene patents listed in the Orange Book, namely U.S. Patent Nos. 6,315,720, 6,561,977, 6,755,784,

8,315,886, and 8,626,531. On August 17, 2017, we filed replies to Apotex's and Hetero's counterclaims, as well as counter-counterclaims against Hetero and Apotex asserting infringement of U.S. Patent Nos. 6,315,720, 6,561,977, 6,755,784, 8,315,886, and 8,626,531. On September 6, 2017, Apotex filed a reply to our counter-counterclaims. On September 8, 2017, Hetero filed a reply to our counter-counterclaims.
On July 24, 2017, Par filed an answer, but did not file any counterclaims. On October 17, 2017, we jointly filed a Stipulation with Par requesting dismissal and stating that Par had converted its Paragraph IV certifications to Paragraph III certifications. The court ordered dismissal on October 20, 2017.

On July 31, 2017, Breckenridge filed an answer and counterclaims asserting that each of the patents asserted in the complaint is invalid and/or not infringed. We filed our reply to Breckenridge's counterclaims on September 5, 2017. On December 6, 2017, Breckenridge filed an amended pleading to include counterclaims seeking declaratory judgments of noninfringement and invalidity for additional Celgene patents listed in the Orange Book, namely U.S. Patent Nos. 6,315,720, 6,561,977, 6,755,784, 8,315,886, and 8,626,531. Celgene replied to Breckenridge's amended counterclaims and asserted counter-counterclaims on January 3, 2018.

On August 7, 2017, Teva filed an answer and counterclaims asserting that each of the patents is invalid and/or not infringed. On September 11, 2017, we filed a reply to Teva's counterclaims.

On August 9, 2017, Mylan filed a motion to dismiss the complaint. Celgene opposed Mylan’s motion on September 29, 2017. Mylan filed its reply in support of its motion on October 24, 2017. The Court has not yet set a hearing date for this motion.

On September 15, 2017, Aurobindo filed an answer and counterclaims asserting that each of the patents is invalid and/or not infringed, and further seeking declaratory judgments of noninfringement and invalidity for additional Celgene patents listed in the Orange Book, namely U.S. Patent Nos. 6,315,720, 6,561,977, 6,755,784, 8,315,886, and 8,626,531. We filed our reply to Aurobindo’s counterclaims and counter-counterclaims concerning U.S. Patent Nos. 6,315,720, 6,561,977, 6,755,784, 8,315,886, and 8,626,531 on October 20, 2017. Aurobindo filed its answer to our counter-counterclaims on November 24, 2017.

The Court has not yet entered a date for the close of fact discovery, or any schedule for expert discovery or trial, in any of the cases.

OTEZLA® (Apremilast): In February 2015, Polpharma S.A., Teva Pharmaceuticals, Ltd., Zentiva k.s. and LEK Pharmaceutical d.d. opposed Celgene’s European patent EP 2 276 483 (the ’483 patent), which is directed to certain crystalline forms of apremilast. An oral hearing was held on March 21, 2017 at the EPO, whereby the Opposition Division determined that the '483 patent was not valid. The regulatory exclusivity will expire on January 15, 2025.

THALOMID® (thalidomide): We received a Notice Letter dated December 18, 2014 from Lannett Holdings, Inc. (Lannett) notifying us of Lannett’s ANDA which contains Paragraph IV certifications against U.S. Patent Nos. 5,629,327; 6,045,501; 6,315,720; 6,561,976; 6,561,977; 6,755,784; 6,869,399; 6,908,432; 7,141,018; 7,230,012; 7,435,745; 7,874,984; 7,959,566; 8,204,763; 8,315,886; 8,589,188; and 8,626,531 that are listed in the Orange Book for THALOMID® (thalidomide). Lannett is seeking to market a generic version of 50mg, 100mg, 150mg, and 200mg of THALOMID® capsules.

On January 30, 2015, we filed an infringement action against Lannett in the United States District Court for the District of New Jersey. On October 24, 2017, we entered into an agreement with Lannett to settle all outstanding claims in the litigation. We have agreed to provide Lannett with a license to our patents required to manufacture and sell generic thalidomide in the United States beginning on August 1, 2019. Lannett’s ability to market thalidomide in the U.S. will be contingent on obtaining approval of its ANDA. A Stipulation and Order of Dismissal was filed on October 30, 2017.

ABRAXANE® (paclitaxel protein-bound particles for injectable suspension) (albumin bound): We received a Notice Letter dated February 23, 2016 from Actavis LLC (Actavis) notifying us of Actavis’s ANDA which contains Paragraph IV certifications against U.S. Patent Nos. 7,820,788; 7,923,536; 8,138,229; and 8,853,260 that are listed in the Orange Book for ABRAXANE®. We then received a Notice Letter dated October 25, 2016 from Cipla notifying us of Cipla’s ANDA, which contains Paragraph IV certifications against the same four patents for ABRAXANE®. Actavis and Cipla are seeking to manufacture and market a generic version of ABRAXANE® (paclitaxel protein-bound particles for injectable suspension) (albumin bound) 100 mg/vial.

On April 6, 2016, we filed an infringement action against Actavis in the United States District Court for the District of New Jersey. As a result of the filing of our action, the FDA cannot grant final approval of Actavis’s ANDA until the earlier of (i) a final decision that each of the patents is invalid, unenforceable, and/or not infringed; or (ii) August 24, 2018. On May 3, 2016, Actavis filed an answer and counterclaims asserting that the patents-in-suit are invalid and/or not infringed and we filed a reply to Actavis’s counterclaims on June 10, 2016.

In January 2018, we entered into a settlement with Actavis to terminate patent litigation and Inter Partes Review (IPR) challenges between the parties relating to certain patents for ABRAXANE®. As part of the settlement, the parties filed a Consent Judgment with the United States District Court for the District of New Jersey, which was entered on January 26, 2018, enjoining Actavis from marketing generic paclitaxel protein-bound particles for injectable suspension before expiration of the patents-in-suit, except as provided for in the settlement. In the settlement, Celgene has agreed to provide Actavis with a license to Celgene's patents required to manufacture and sell its generic paclitaxel protein-bound particles for injectable suspension product in the United States beginning on March 31, 2022.

On December 7, 2016, we filed an infringement action against Cipla in the United States District Court for the District of New Jersey. As a result of the filing of our action, the FDA cannot grant final approval of Cipla's ANDA until the earlier of (i) a final decision that each of the patents is invalid, unenforceable, and/or not infringed; or (ii) April 25, 2019. On January 20, 2017, Cipla filed an answer and counterclaims asserting that the patents-in-suit are invalid and/or not infringed. Our reply was filed on February 24, 2017. Fact discovery is currently set to close on April 26, 2018 and expert discovery is currently set to close on November 1, 2018. The Court has not yet set a date for trial.

On January 13, 2017, the UK High Court of Justice handed down a ruling after a hearing held on December 20, 2016 in which Celgene argued that the UK Intellectual Property Office improperly rejected our request for an SPC to the ABRAXANE® patent

UK No. 0 961 612 (the ’612 patent). In that ruling, the High Court referred the matter to the Court of Justice for the EU (CJEU). No hearing date has been set at the CJEU. If the CJEU were to find in Celgene’s favor, the ruling would need to be implemented in other jurisdictions in which the proceedings are pending, potentially resulting in the grant of SPCs not only in the UK, but also in other jurisdictions that have previously rejected our initial request including Germany and Ireland. The ’612 patent expired in Europe in September 2017. However, if granted, the SPCs will expire in 2022. Data exclusivity in Europe will expire in January 2019.

Proceedings involving the United States Patent and Trademark Office (USPTO):

Under the America Invents Act (AIA), any person may seek to challenge an issued patent by petitioning the USPTO to institute a post grant review. On April 23, 2015, we were informed that the Coalition for Affordable Drugs VI LLC filed petitions for IPR challenging the validity of Celgene’s patents U.S. 6,045,501 (the ’501 patent) and U.S. 6,315,720 (the ’720 patent) covering certain aspects of our REMS program. On October 27, 2015, the USPTO Patent Trial and Appeal Board (PTAB) instituted IPR proceedings relating to these patents. An oral hearing was held on July 21, 2016; the decisions, rendered on October 26, 2016, held that the ’501 and ’720 patents are invalid, primarily due to obviousness in view of certain publications. On November 25, 2016, we requested a rehearing with respect to certain claims of these patents. On September 8, 2017, the PTAB denied our rehearing request for the ’501 patent, but granted our rehearing request pertaining to a certain claim of the ’720 patent.

We timely appealed to the United States Court of Appeals for the Federal Circuit the PTAB’s determinations regarding certain claims of the ’720 patent and the ’501 patent on November 6, 2017 and on November 9, 2017, respectively. Our opening briefs to that court will be due in late April 2018. The ’501 and ’720 patents remain valid and enforceable pending appeal. We retain other patents covering certain aspects of our REMS program, as well as patents that cover our products that use our REMS system.

On April 4, 2017, Actavis filed petitions for IPRs challenging the validity of our patents U.S. 8,138,229 (the ’229 patent); 7,923,536 (the ’536 patent); 7,820,788 (the ’788 patent); and 8,853,260 (the ’260 patent) covering certain aspects of our ABRAXANE® product. We filed our preliminary response on July 12, 2017. In January 2018, as part of the settlement referenced above, Actavis agreed to terminate its IPR challenges to these patents.

On October 10, 2017, the PTAB instituted IPR proceedings on the ’788, ’536, and ’229 patents, and the trial on those patents is scheduled for July 11, 2018. The ’788, ’536, and ’229 patents remain valid and enforceable pending the conclusion of the IPR, including any rehearing requests or appeals. On October 11, 2017, the PTAB denied institution of an IPR on the ’260 patent, which remains valid and enforceable.

On November 9, 2017, Apotex and Cipla filed petitions for IPRs challenging the validity of the ’229, the ’536 and the ’788 patents. Apotex and Cipla filed requests for joinder as to the instituted IPRs. We opposed the requests for joinder on December 11, 2017. Our preliminary responses to Apotex and Cipla’s petitions are due on February 16, 2018 and February 20, 2018, respectively.

Other Proceedings:

In 2009, we received a Civil Investigative Demand (CID) from the U.S. Federal Trade Commission (FTC) seeking documents and other information relating to requests by manufacturers of generic drugs to purchase our patented REVLIMID® and THALOMID® brand drugs in order for the FTC to evaluate whether there may be reason to believe that we have engaged in unfair methods of competition. In 2010, the State of Connecticut issued a subpoena referring to the same issues raised by the 2009 CID. Also in 2010, we received a second CID from the FTC relating to this

matter. On October 31, 2017, we were notified by the FTC that it had closed its investigation of Celgene.

On April 3, 2014, Mylan filed a lawsuit against us in the United States District Court for the District of New Jersey alleging that we violated various federal and state antitrust and unfair competition laws by allegedly refusing to sell samples of our THALOMID® and REVLIMID® brand drugs so that Mylan can conduct the bioequivalence testing necessary for ANDAs to be submitted to the FDA for approval to market generic versions of these products. Mylan is seeking injunctive relief, damages and declaratory judgment. We filed a motion to dismiss Mylan’s complaint on May 25, 2014. Mylan filed its opposition to our motion to dismiss on June 16, 2014. The Federal Trade Commission filed an amicus curiae brief in opposition to our motion to dismiss on June 17, 2014. On December 22, 2014, the court granted Celgene’s motion to dismiss (i) Mylan’s claims based on Section 1 of the Sherman Act (without prejudice), and (ii) Mylan's related claims arising under the New Jersey Antitrust Act. The court denied our motion to dismiss the remaining claims which primarily relate to Section 2 of the Sherman Act. On January 6, 2015, we filed a motion to certify for interlocutory appeal the order denying our motion to dismiss with respect to the claims relating to Section 2 of the Sherman Act, which appeal was denied by the United State Court of Appeals for the Third Circuit on March 5, 2015. On January 20, 2015, we filed an answer to Mylan’s complaint. Fact discovery closed in June 2016 and expert discovery closed in November 2016. On December 16, 2016, we moved for summary judgment, seeking a ruling that judgment be granted in our favor on all

claims. The motion for summary judgment was argued on December 13, 2017. Thereafter, the court ordered the parties to mediate and administratively stayed the case pending the mediation. No trial date has been set. We intend to vigorously defend against Mylan's claims.

In 2011, the United States Attorney's Office for the Central District of California informed us that they were investigating possible off-label marketing and improper payments to physicians in connection with the sales of THALOMID® and REVLIMID®. In 2012, we learned that two other United States Attorneys' offices (the Northern District of Alabama and the Eastern District of Texas) and various state Attorneys General were conducting related investigations. In February 2014, three civil qui tam actions related to those investigations brought by three former Celgene employees on behalf of the federal and various state governments under the federal false claims act and similar state laws were unsealed after the United States Department of Justice (DOJ) declined to intervene in any of these actions. However, the DOJ retained the right to intervene in these actions at any time.

Additionally, while several states similarly declined to intervene in some of these actions, they also retained the right to intervene in the future. The plaintiffs in the Northern District of Alabama and Eastern District of Texas actions voluntarily dismissed their cases. On April 25, 2014, we filed a motion to dismiss the complaint in the remaining (Central District of California) action, United States of America ex. rel. Beverly Brown v. Celgene Corp., unsealed February 5, 2014 (the Brown Action), which was denied except with respect to certain state claims. We filed our answer to the complaint on August 28, 2014. Fact discovery closed on September 25, 2015. Expert discovery closed on June 30, 2016.

The Relator (the person who brought the lawsuit on behalf of the government) submitted an expert report that, based on certain theories, purported to calculate damages and penalties. On July 25, 2016, we filed a motion to strike the Relator's expert report. The Magistrate Judge granted our motion, striking substantial portions of the report on August 23, 2016, significantly reducing the expert's calculation of damages and penalties. Relator appealed this decision to the District Court Judge.

On August 29, 2016, the parties filed a Joint Stipulation on Defendant Celgene's Motion for Summary Judgment or, In the Alternative, Partial Summary Judgment. On December 28, 2016, the court entered an order granting in part and denying in part Celgene's motion for summary judgment. Specifically, the court dismissed Relator's anti-kickback claims and all claims related to prescriptions submitted to TRICARE, the Veterans Administration and the Tennessee, Texas and Wisconsin Medicaid programs. The court denied Celgene's motion as to all other issues and upheld the District Court's decision to strike substantial portions of Relator's expert report. On January 30, 2017, we filed a Motion for Reconsideration of The Order Partially Denying Summary Judgment Or For Certification For Immediate Appeal And Stay. This motion sought to dispose of the remainder of the Relator's claims. Relator filed her Opposition to our motion on February 6, 2017.

A confidential mediation under Federal Rule of Civil Procedure Rule 408 was held on February 25, 2017. Relator and Celgene participated in the mediation and discussions continued after that date. On March 6, 2017, the Judge ordered that the trial begin on April 25, 2017. Relator and Celgene jointly sought, and obtained, a 90-day continuance of the trial date until July 25, 2017. On June 26, 2017, the court held a status conference, in which it directed the parties to submit any proposed settlement agreement to which Relator, Celgene, and the DOJ had agreed to the court by July 13, 2017 with a motion to approve the settlement. The court stated that it would rule on any motion to approve the settlement on July 25, 2017. As a result, we accrued $315 million related to this matter as a probable and reasonably estimable loss contingency during the second quarter of 2017.

On July 13, 2017, the parties submitted a proposed settlement and motion to approve the settlement to the court. On July 25, 2017, the court accepted the settlement. Under the terms of the settlement, we paid a total of $315 million (including fees and expenses) to resolve the matter with the United States, 28 States, the District of Columbia, the City of Chicago and the Relator. The settlement includes no admission of any wrongdoing by us, and we are not required to enter into a Corporate Integrity Agreement as part of the settlement.

On June 7, 2013, Children's Medical Center Corporation (CMCC) filed a lawsuit against us in the Superior Court of the Commonwealth of Massachusetts alleging that our obligation to pay a 1% royalty on REVLIMID® net sales revenue and a 2.5% royalty on POMALYST®/IMNOVID® net sales under a license agreement entered into in December 2002 extended beyond February 28, 2013 and that our failure to make royalty payments to CMCC subsequent to February 28, 2013 breached the license agreement.

On July 8, 2014, CR Rev Holdings, LLC (CR Rev) filed a complaint against Celgene in the same action. CR Rev alleged that CMCC sold and assigned to CR Rev a substantial portion of the royalty payments owed by Celgene on the sale of REVLIMID®. CR Rev has alleged causes of action with respect to REVLIMID® identical to those alleged by CMCC, and sought unspecified damages and a declaration that the license agreement is still in effect.

On February 2, 2017, we entered into a Settlement Agreement with CMCC and CR Rev resolving the litigation, providing CMCC with a payment of approximately $199 million (see Notes 9 and 18) and providing us with an exclusive, worldwide, royalty free license to certain patent rights. The Settlement Agreement also provides for potential contingent royalty and other payments, which have not been accrued for as we do not believe such payments are probable.

On November 7, 2014, the International Union of Bricklayers and Allied Craft Workers Local 1 Health Fund (IUB) filed a putative class action lawsuit against us in the United States District Court for the District of New Jersey alleging that we violated various antitrust, consumer protection, and unfair competition laws by (a) allegedly securing an exclusive supply contract with Seratec S.A.R.L. so that Barr Laboratories allegedly could not secure its own supply of thalidomide active pharmaceutical ingredient; (b) allegedly refusing to sell samples of our THALOMID® and REVLIMID® brand drugs to various generic manufacturers for the alleged purpose of bioequivalence testing necessary for ANDAs to be submitted to the FDA for approval to market generic versions of these products; and (c) allegedly bringing unjustified patent infringement lawsuits in order to allegedly delay approval for proposed generic versions of THALOMID® and REVLIMID®. IUB, on behalf of itself and a putative class of third party payers, is seeking injunctive relief and damages.

In February 2015, we filed a motion to dismiss IUB’s complaint, and upon the filing of a similar putative class action making similar allegations by the City of Providence (Providence), the parties agreed that the decision in the motion to dismiss IUB’s complaint would apply to the identical claims in Providence’s complaint. In October 2015, the court denied our motion to dismiss on all grounds.

We filed our answers to the IUB and Providence complaints in January 2016. On June 14, 2017, a new complaint was filed by the same counsel representing the plaintiffs in the IUB case, making similar allegations and adding three new plaintiffs - International Union of Operating Engineers Stationary Engineers Local 39 Health and Welfare Trust Fund (Local 39), The Detectives’ Endowment Association, Inc. (DEA) and David Mitchell. Counsel identified the new complaint as related to the IUB and Providence cases and, on August 1, 2017, filed a Consolidated Amended complaint on behalf of IUB, Providence, Local 39, DEA, and Mitchell. On September 28, 2017, the same counsel filed another complaint, which it identified as related to the consolidated case, and which made similar allegations on behalf of an additional asserted class representative: New England Carpenters Health Benefits Fund. The completion of fact discovery and expert discovery in these cases is scheduled for May 17, 2018 and October 29, 2018, respectively. No trial date has been set. We intend to vigorously defend against these claims.

In December 2015, we received a subpoena from the U.S. Attorney’s Office for the District of Massachusetts, and in November 2016, we received a second subpoena related to the same inquiry. The materials requested primarily relate to patient assistance programs, including our support of 501(c)(3) organizations that provide financial assistance to eligible patients. We are cooperating with these requests.

In August 2017, we received an order issued by the Federal Court in Ottawa, Ontario, Canada at the request of the Canadian Competition Bureau, requiring that we provide certain materials and information relating to our risk management program and requests by generic manufacturers to purchase our products in Canada. We are cooperating with this request.

19. Geographic and Product Information

Operations by Geographic Area: Revenues primarily consisted of sales of our primary commercial stage products including REVLIMID®, POMALYST®/IMNOVID®, OTEZLA®, ABRAXANE®, IDHIFA®, VIDAZA®, azacitidine for injection (generic version of VIDAZA®) and THALOMID® (sold as THALOMID® or Thalidomide Celgene® outside of the U.S.). In addition, we earn revenue from other product sales and licensing arrangements.

Revenues	2017	2016	2015
United States	$8,324	$7,010	$5,604
Europe	3,327	3,046	2,624
All other	1,352	1,173	1,028
Total revenues	$13,003	$11,229	$9,256

Long-Lived Assets[1]	2017	2016
United States	$768	$667
Europe	296	251
All other	6	12
Total long lived assets	$1,070	$930

[1] Long-lived assets consist of net property, plant and equipment.

Revenues by Product: Total revenues from external customers by product for the years ended December 31, 2017, 2016 and 2015 were as follows:

	2017	2016	2015
REVLIMID®	$8,187	$6,974	$5,801
POMALYST®/IMNOVID®	1,614	1,311	984
OTEZLA®	1,279	1,017	472
ABRAXANE®	992	973	967
IDHIFA®	20	—	—
VIDAZA®	628	608	591
azacitidine for injection	36	66	84
THALOMID®	132	152	185
ISTODAX®	76	80	69
Other	9	4	8
Total net product sales	12,973	11,185	9,161
Other revenue	30	44	95
Total revenue	$13,003	$11,229	$9,256

Major Customers: We sell our products primarily through wholesale distributors and specialty pharmacies in the United States, which account for a large portion of our total revenues. International sales are primarily made directly to hospitals, clinics and retail chains, many of which are government owned. During the three-year period of 2017, 2016 and 2015, customers that accounted for more than 10% of our total revenue in at least one of those years are summarized below. The percentage of amounts due from these customers compared to total net accounts receivable is also summarized below as of December 31, 2017 and 2016.

	Percent of Total Revenue			Percent of Net Accounts Receivable	
Customer	2017	2016	2015	2017	2016
CVS Health Corp.	12.5 %	12.0 %	10.7 %	9.7 %	7.9 %
McKesson Corp.	12.0 %	10.3 %	8.5 %	9.6 %	9.1 %
AmerisourceBergen Corp.	10.0 %	8.5 %	8.1 %	9.7 %	8.7 %

CELGENE CORPORATION AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS – (Continued)

20. Quarterly Results of Operations (Unaudited)

2017	1Q[3]	2Q[3]	3Q	4Q	Year
Total revenue	$2,962	$3,271	$3,287	$3,483	$13,003
Gross profit[1]	2,839	3,148	3,165	3,360	12,512
Income tax provision[4]	82	77	3	1,212	1,374
Net income (loss)	932	1,101	988	(81)	2,940
Net income (loss) per share:[2]					
Basic	$1.20	$1.41	$1.26	$(0.10)	$3.77
Diluted	$1.15	$1.36	$1.21	$(0.10)	$3.64
Weighted average shares:					
Basic	779.0	780.4	784.1	773.5	779.2
Diluted	811.2	811.7	815.2	773.5	808.7

2016	1Q	2Q	3Q[5]	4Q	Year
Total revenue	$2,512	$2,754	$2,983	$2,980	$11,229
Gross profit[1]	2,389	2,633	2,861	2,864	10,747
Income tax provision	121	97	85	70	373
Net income	801	598	171	429	1,999
Net income per share:[2]					
Basic	$1.03	$0.77	$0.22	$0.55	$2.57
Diluted	$0.99	$0.75	$0.21	$0.53	$2.49
Weighted average shares:					
Basic	780.6	775.6	775.8	776.8	777.2
Diluted	807.7	801.5	801.5	802.2	803.3

1 Gross profit is computed by subtracting cost of goods sold (excluding amortization of acquired intangible assets) from net product sales.

2 The sum of the quarters may not equal the full year due to rounding. In addition, quarterly and full year basic and diluted earnings per share are calculated separately.

3 During the third quarter of 2017, we adopted ASU 2017-12 with an initial application date of January 1, 2017. Prior to the adoption of ASU 2017-12, we recognized all changes in the fair value of the excluded component of a hedge in Other income (expense), net in the Consolidated Statements of Income under a mark-to-market approach. Pursuant to the provisions of ASU 2017-12, we no longer recognize the adjustments to the fair value of the excluded component in Other income (expense), net but we instead recognize the initial value of the excluded component using an amortization approach over the life of the hedging instrument. In accordance with ASU 2017-12, certain provisions were required to be applied on a modified retrospective basis, which requires a cumulative effect adjustment to accumulated other comprehensive income with a corresponding adjustment to retained earnings as of the beginning of the fiscal year of adoption, or January 1, 2017. See Note 1 for additional information related to the adoption of ASU-2017-12. As such, the unaudited quarterly results of operations for the first and second quarter of 2017 have been recast for retrospective application of ASU 2017-12 as follows:

	Three-Month Period Ended March 31, 2017		Three-Month Period Ended June 30, 2017	
	As Reported	As Revised	As Reported	As Revised
Total revenue	$2,960	$2,962	$3,268	$3,271
Other income (expense), net	26	13	(76)	(31)
Income tax provision	84	82	69	77
Net income	941	932	1,061	1,101

Basic net income per common share	1.21	1.20	1.36	1.41
Diluted net income per common share	$1.16	$ 1.15	$1.31	$1.36

4 The Income tax provision in the fourth quarter of 2017 includes income tax expense of approximately $1,269 million as a result of U.S. tax reform legislation, formerly known as the Tax Cuts and Jobs Act (2017 Tax Act), which was enacted on December 22, 2017. See Note 16 contained in this Annual Report on Form 10-K for additional details related to the

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2017 Tax Act. In addition, the income tax provision for 2017 includes $290 million of excess benefits arising from share-based compensation awards that vested or were exercised during 2017 as a result of the adoption of ASU 2016-09, "Compensation - Stock Compensation.

[5] The decrease in Net income in the third quarter of 2016 was primarily due to a $623 million research and development asset acquisition expense associated with the purchase of EngMab.

21. Subsequent Events

Impact Biomedicines, Inc.: On January 7, 2018, we entered into a definitive agreement to acquire Impact, a privately held biotechnology company which is developing fedratinib, a highly selective JAK2 kinase inhibitor, for myelofibrosis and polycythemia vera. Under the terms of the agreement, we will make an upfront cash payment of approximately $1.1 billion. In addition, Impact Biomedicines' shareholders are eligible to receive contingent regulatory approval milestones up to $1.4 billion and contingent commercial milestones up to $4.5 billion based on cumulative sales levels of between $1.0 billion and $5.0 billion. The acquisition is subject to customary closing conditions and applicable waiting period under the Hart Scott Rodino Antitrust Improvements Act. The transaction is expected to close in the first quarter of 2018. The acquisition of Impact is not anticipated to include any significant processes and thus, for accounting purposes, we have preliminary concluded that the acquired assets will not meet the accounting definition of a business. As such, the transaction will be accounted for as a research and development asset acquisition.

Juno Therapeutics, Inc. (Juno): On January 21, 2018, we entered into a merger agreement with Juno under which we will pay $87 per share in cash, or approximately $9.0 billion net of cash and marketable securities acquired and Juno shares already owned by us (approximately 9.7% of outstanding shares), which we anticipate to be accounted for as a business combination. Juno is a publicly held biotechnology company which is developing CAR (chimeric antigen receptor) T and TCR (T cell receptor) therapeutics with a broad, novel portfolio evaluating multiple targets and cancer indications. The acquisition will also add a novel scientific platform and scalable manufacturing capabilities including JCAR017, a CD19-directed CAR T currently in a program for relapsed and/or refractory diffuse large B-Cell lymphoma. The transaction has been approved by the board of directors of Celgene and Juno. We expect to complete the transaction during the first quarter of 2018, subject to customary closing conditions and the expiration of applicable waiting period under the Hart Scott Rodino Antitrust Improvements Act. The transaction is expected to be funded through a combination of existing cash, cash equivalents, marketable securities and new debt.

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

None.

ITEM 9A. CONTROLS AND PROCEDURES

CONCLUSION REGARDING THE EFFECTIVENESS OF DISCLOSURE CONTROLS AND PROCEDURES

As of the end of the period covered by this Annual Report on Form 10-K, we carried out an evaluation, under the supervision and with the participation of our management, including our Chief Executive Officer and Chief Financial Officer, of the effectiveness of the design and operation of our disclosure controls and procedures (as defined in the Exchange Act Rules 13a-15(e) and 15d-15(e)) (the "Exchange Act"). Based on the foregoing evaluation, our Chief Executive Officer and Chief Financial Officer have concluded that our disclosure controls and procedures are effective to ensure that information required to be disclosed by us in the reports that we file or submit under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the rules and forms of the Securities and Exchange Commission and that such information is accumulated and communicated to our management (including our Chief Executive Officer and Chief Financial Officer) to allow timely decisions regarding required disclosures.

CHANGES IN INTERNAL CONTROLS OVER FINANCIAL REPORTING

There were no changes in our internal control over financial reporting during the fiscal quarter ended December 31, 2017 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

MANAGEMENT'S REPORT ON INTERNAL CONTROL OVER FINANCIAL REPORTING

Our management is responsible for establishing and maintaining adequate internal control over financial reporting and for the assessment of the effectiveness of internal control over financial reporting. As defined by the Securities and Exchange Commission, internal control over financial reporting is a process designed by, or under the supervision of, our principal executive and principal financial officers and effected by our Board of Directors, management and other personnel, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of the consolidated financial statements in accordance with U.S. generally accepted accounting principles.

Our 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 our transactions and dispositions of our assets; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of the consolidated financial statements in accordance with generally accepted accounting principles, and that our receipts and expenditures are being made only in accordance with authorizations of our management and directors; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of our assets that could have a material effect on the consolidated 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.

In connection with the preparation of our annual consolidated financial statements, management has undertaken an assessment of the effectiveness of our internal control over financial reporting as of December 31, 2017, based on criteria established in Internal Control-Integrated Framework issued by the Committee of Sponsoring Organizations of

the Treadway Commission in 2013, or the COSO Framework. Management's assessment included an evaluation of the design of our internal control over financial reporting and testing of the operational effectiveness of those controls.

Based on this evaluation, management has concluded that our internal control over financial reporting was effective as of December 31, 2017.

KPMG LLP, the independent registered public accounting firm that audited our consolidated financial statements included in this report, has issued their report on the effectiveness of internal control over financial reporting as of December 31, 2017, a copy of which is included herein.

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Board of Directors and Stockholders
Celgene Corporation:

Opinion on Internal Control Over Financial Reporting

We have audited Celgene Corporation and subsidiaries' (the "Company") internal control over financial reporting as of December 31, 2017, based on criteria established in Internal Control - Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission. In our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2017, based on criteria established in Internal Control - Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) ("PCAOB"), the consolidated balance sheets of the Company as of December 31, 2017 and 2016, the related consolidated statements of income, comprehensive income, cash flows, and stockholders' equity for each of the years in the three-year period ended December 31, 2017, the related notes, and the consolidated financial statement schedule, "Schedule II - Valuation and Qualifying Accounts" (collectively, the "consolidated financial statements"), and our report dated February 7, 2018 expressed an unqualified opinion on those consolidated financial statements.

Basis for Opinion

The Company's management is responsible 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 an opinion on the Company's internal control over financial reporting based on our audit. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. 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 audit also included performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

Definition and Limitations of Internal Control Over Financial Reporting

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 (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (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 company are being made only in accordance with authorizations of management and directors of the company; and (3) 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.

/s/ KPMG LLP

Short Hills, New Jersey

February 7, 2018

ITEM 9B. OTHER INFORMATION

None.

PART III

ITEM 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE

Pursuant to Paragraph G(3) of the General Instructions to Form 10-K, the information required by Part III (Items 10, 11, 12, 13 and 14) is being incorporated by reference herein from our definitive proxy statement (or an amendment to our Annual Report on Form 10-K) to be filed with the SEC within 120 days after the end of the fiscal year ended December 31, 2017 in connection with our 2018 Annual Meeting of Stockholders.

ITEM 11. EXECUTIVE COMPENSATION

See Item 10.

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

See Item 10.

ITEM 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE

See Item 10.

ITEM 14. PRINCIPAL ACCOUNTANT FEES AND SERVICES

See Item 10.

PART IV

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(a) 3. Exhibit Index

The following exhibits are filed with this report or incorporated by reference:

Exhibit No.	Exhibit Description
2.1	Agreement and Plan of Merger dated as of July 14, 2015 among Receptos, Inc., Celgene Corporation and Strix Corporation (incorporated by reference to Exhibit 2.1 to the Company’s Current Report on Form 8-K filed on July 15, 2015).
2.2	Agreement and Plan of Merger, dated as of January 21, 2018, among Celgene Corporation, Blue Magpie Corporation and Juno Therapeutics, Inc. (incorporated by reference to Exhibit 2.1 to the Company’s Current Report on Form 8-K filed January 22, 2018).
3.1	Certificate of Incorporation of the Company, as amended June 18, 2014 (incorporated by reference to Exhibit 3.1 to the Company's Quarterly Report on Form 10-Q filed July 29, 2014).
3.2	Amended and Restated Bylaws of the Company (incorporated by reference to Exhibit 3.1 to the Company’s Current Report on Form 8-K filed December 12, 2016).
4.1	Contingent Value Rights Agreement, dated as of October 15, 2010, between Celgene Corporation and American Stock Transfer & Trust Company, LLC, as trustee, including the Form of CVR Certificate as Annex A (incorporated by reference to Exhibit 4.1 to the Company's Form 8-A12B filed on October 15, 2010).
4.2	Indenture, dated as of October 7, 2010, relating to the 2.450% Senior Notes due 2015, 3.950% Senior Notes due 2020 and 5.700% Senior Notes due 2040, between the Company and The Bank of New York Mellon Trust Company, N.A., as trustee (incorporated by reference to Exhibit 4.1 to the Company's Current Report on Form 8-K filed on October 7, 2010).
4.3	Indenture, dated as of August 9, 2012, relating to the 1.900% Senior Notes due 2017 and 3.250% Senior Notes due 2022, between the Company and The Bank of New York Mellon Trust Company, N.A., as trustee (incorporated by reference to Exhibit 4.1 to the Company's Current Report on Form 8-K filed on August 9, 2012).
4.4	Indenture, dated as of August 6, 2013, relating to the 2.300% Senior Notes due 2018, 4.000% Senior Notes due 2023 and the 5.250% Senior Notes due 2043, between the Company and The Bank of New York Mellon Trust Company, N.A., as trustee (incorporated by reference to Exhibit 4.1 to the Company's Current Report on Form 8-K filed on August 6, 2013).
4.5	Indenture, dated as of May 15, 2014, relating to the 2.250% Senior Notes due 2019, 3.625% Senior Notes due 2024 and the 4.625% Senior Notes due 2044, between the Company and The Bank of New York Mellon Trust Company, N.A., as trustee (incorporated by reference to Exhibit 4.1 to the Company's Current Report on Form 8-K filed on May 15, 2014).
4.6	Indenture, dated as of August 12, 2015, relating to the 2.125% Senior Notes due 2018, 2.875% Senior Notes due 2020, 3.550% Senior Notes due 2022, 3.875% Senior Notes due 2025 and the 5.000% Senior Notes due 2045, between the Company and The Bank of New York Mellon Trust Company, N.A., as trustee (incorporated by

	reference to Exhibit 4.1 to the Company’s Current Report on Form 8-K filed on August 12, 2015).
4.7	Indenture, dated as of November 9, 2017, relating to the 2.750% Senior Notes due 2023, 3.450% Senior Notes due 2027 and the 4.350% Senior Notes due 2047 between the Company and The Bank of New York Mellon Trust Company, N.A., as trustee (incorporated by reference to Exhibit 4.1 to the Company’s Current Report on Form 8-K filed on November 9, 2017).
4.8	Form of 3.950% Senior Notes due 2020 (incorporated by reference to Exhibit 4.3 to the Company's Current Report on Form 8-K filed on October 7, 2010).
4.9	Form of 5.700% Senior Notes due 2040 (incorporated by reference to Exhibit 4.4 to the Company's Current Report on Form 8-K filed on October 7, 2010).
4.10	Form of 1.900% Senior Notes due 2017 (incorporated by reference to Exhibit 4.2 to the Company's Current Report on Form 8-K filed on August 9, 2012).

Exhibit No.	Exhibit Description
4.11	Form of 3.250% Senior Notes due 2022 (incorporated by reference to Exhibit 4.3 to the Company's Current Report on Form 8-K filed on August 9, 2012).
4.12	Form of 2.300% Senior Notes due 2018 (incorporated by reference to Exhibit 4.2 to the Company's Current Report on Form 8-K filed on August 6, 2013).
4.13	Form of 4.000% Senior Notes due 2023 (incorporated by reference to Exhibit 4.3 to the Company's Current Report on Form 8-K filed on August 6, 2013).
4.14	Form of 5.250% Senior Notes due 2043 (incorporated by reference to Exhibit 4.4 to the Company's Current Report on Form 8-K filed on August 6, 2013).
4.15	Form of 2.250% Senior Notes due 2019 (incorporated by reference to Exhibit 4.2 to the Company's Current Report on Form 8-K filed on May 15, 2014).
4.16	Form of 3.625% Senior Notes due 2024 (incorporated by reference to Exhibit 4.3 to the Company's Current Report on Form 8-K filed on May 15, 2014).
4.17	Form of 4.625% Senior Notes due 2044 (incorporated by reference to Exhibit 4.4 to the Company's Current Report on Form 8-K filed on May 15, 2014).
4.18	Form of 2.125% Senior Notes due 2018 (incorporated by reference to Exhibit 4.2 to the Company's Current Report on Form 8-K filed on August 12, 2015).
4.19	Form of 2.875% Senior Notes due 2020 (incorporated by reference to Exhibit 4.3 to the Company's Current Report on Form 8-K filed on August 12, 2015).
4.20	Form of 3.550% Senior Notes due 2022 (incorporated by reference to Exhibit 4.4 to the Company's Current Report on Form 8-K filed on August 12, 2015).
4.21	Form of 3.875% Senior Notes due 2025 (incorporated by reference to Exhibit 4.5 to the Company's Current Report on Form 8-K filed on August 12, 2015).
4.22	Form of 5.000% Senior Notes due 2045 (incorporated by reference to Exhibit 4.6 to the Company's Current Report on Form 8-K filed on August 12, 2015).
4.23	Form of 2.750% Senior Note due 2023 (incorporated by reference to Exhibit 4.2 to the Company’s Current Report on Form 8-K filed on November 9, 2017).
4.24	Form of 3.450% Senior Note due 2027 (incorporated by reference to Exhibit 4.3 to the Company’s Current Report on Form 8-K filed on November 9, 2017).
4.25	Form of 4.350% Senior Note due 2047 (incorporated by reference to Exhibit 4.4 to the Company’s Current Report on Form 8-K filed on November 9, 2017).
10.1+	1992 Long-Term Incentive Plan (incorporated by reference to Exhibit A to the Company's Proxy Statement dated May 30, 1997), as amended by Amendment No. 1 thereto, effective as of June 22, 1999 (incorporated by reference to Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q for the quarter ended September 30, 2002).
10.2+	1995 Non Employee Directors' Incentive Plan (incorporated by reference to Exhibit A to the Company's Proxy Statement, dated May 24, 1999), as amended by Amendment No. 1 thereto, effective as of June 22, 1999 (incorporated by reference to Exhibit 10.2 to the Company's Quarterly Report on Form 10-Q for the quarter ended September 30, 2002), as further amended by Amendment No. 2 thereto, effective as of April 18, 2000 (incorporated by reference to Exhibit 10.3 to the Company's Quarterly Report on Form 10-Q for the quarter ended September 30, 2002), as further amended by Amendment No. 3 thereto, effective as of April 23, 2003 (incorporated by reference to Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q for the quarter ended March 31, 2005), as further amended by Amendment No. 4 thereto, effective as of April 5, 2005 (incorporated by reference to Exhibit 99.2 to the Company's Registration Statement on Form S-8 (No. 333-126296)), as amended by Amendment No. 5 thereto (incorporated by reference to Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q for the quarter ended June 30, 2007), as further amended by Amendment No. 6 thereto (incorporated by reference to Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q for the quarter ended June 30, 2008).

10.3+	Form of Indemnification Agreement between the Company and each officer and director of the Company (incorporated by reference to Exhibit 10.12 to the Company's Annual Report on Form 10-K for the year ended December 31, 1996).
10.4+	Amended and Restated Employment Agreement effective May 1, 2006 between the Company and Robert J. Hugin (incorporated by reference to Exhibit 10.3 to the Company's Quarterly Report on Form 10-Q for the quarter ended March 31, 2006), as amended by Amendment No. 1 thereto, effective as of December 31, 2008 (incorporated by reference to Exhibit 10.8 to the Company's Annual Report on Form 10-K for the year ended December 31, 2008), as further amended by Amendment No. 2 thereto, effective as of June 16, 2010 (incorporated by reference to Exhibit 10.3 to the Company's Current Report on Form 8-K filed on June 18, 2010), as further amended by Amendment No. 3 thereto, effective as of April 16, 2014 (incorporated by reference to Exhibit 10.3 to the Company's Quarterly Report on Form 10-Q filed on May 3, 2016), as further amended by Amendment No. 4 thereto, effective as of March 1, 2016 (incorporated by reference to Exhibit 10.4 to the Company's Quarterly Report on Form 10-Q filed on May 3, 2016).
10.5+	Celgene Corporation 2017 Stock Incentive Plan (Amended and Restated as of April 19, 2017) (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on June 14, 2017).
10.6	Development and License Agreement between the Company and Novartis Pharma AG, dated April 19, 2000 (incorporated by reference to Exhibit 10.21 to the Company's Annual Report on Form 10-K for the year ended December 31, 2000).
10.7	Collaborative Research and License Agreement between the Company and Novartis Pharma AG, dated December 20, 2000 (incorporated by reference to Exhibit 10.22 to the Company's Annual Report on Form 10-K for the year ended December 31, 2000).

Exhibit No.	Exhibit Description
10.8+	Celgene Corporation 2005 Deferred Compensation Plan, effective as of January 1, 2005 (incorporated by reference to Exhibit 10.22 to the Company's Annual Report on Form 10-K for the year ended December 31, 2004), as amended and restated, effective January 1, 2008 (incorporated by reference to Exhibit 10.4 to the Company's Quarterly Report on Form 10-Q for the quarter ended March 31, 2008, filed on May 12, 2008).
10.9	Technical Services Agreement among the Company, Celgene UK Manufacturing II, Limited (f/k/a Penn T Limited), Penn Pharmaceutical Services Limited and Penn Pharmaceutical Holding Limited, dated October 21, 2004 (incorporated by reference to Exhibit 10.33 to the Company's Annual Report on Form 10-K for the year ended December 31, 2004).
10.10†	Distribution Services and Storage Agreement between the Company and Sharp Corporation, dated January 1, 2005 (certain portions of the agreement have been redacted and filed separately with the Securities and Exchange Commission pursuant to a request for confidential treatment, which has been granted) (incorporated by reference to Exhibit 10.53 to the Company's Annual Report on Form 10-K for the year ended December 31, 2005).
10.11	Non-Competition, Non-Solicitation and Confidentiality Agreement between Celgene Corporation and Dr. Patrick Soon-Shiong, dated as of June 30, 2010 (incorporated by reference to Exhibit 10.3 to the Company's Current Report on Form 8-K filed on July 1, 2010).
10.12	Stockholders' Agreement among Celgene Corporation, Dr. Patrick Soon-Shiong, California Capital LP, Patrick Soon-Shiong 2009 GRAT 1, Patrick Soon-Shiong 2009 GRAT 2, Michele B. Soon-Shiong GRAT 1, Michele B. Soon-Shiong GRAT 2, Soon-Shiong Community Property Revocable Trust, California Capital Trust and Michele B. Chan Soon-Shiong, dated as of June 30, 2010 (incorporated by reference to Exhibit 10.4 to the Company's Current Report on Form 8-K filed on July 1, 2010).
10.13+	Letter Agreement between the Company and Jacqualyn A. Fouse, dated August 18, 2010 (incorporated by reference to Exhibit 99.2 to the Company's Current Report on Form 8-K filed on August 27, 2010).
10.14	Second Amended and Restated Credit Agreement among Celgene Corporation, the lender parties named therein, and Citibank, N.A., as administrative agent, dated as of April 17, 2015 (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on April 20, 2015), as amended by FIRST AMENDMENT thereto dated as of July 29, 2015 (incorporated by reference to Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q filed on May 3, 2016), as further amended by AMENDMENT NO. 2 thereto dated as of April 18, 2016 (incorporated by reference to Exhibit 10.2 to the Company's Quarterly Report on Form 10-Q filed on May 3, 2016), as further amended by AMENDMENT NO. 3 dated April 17, 2017 (incorporated by reference to Exhibit 10.2 to the Company’s Quarterly Report on Form 10-Q filed on April 27, 2017).
10.15+	Celgene Corporation Management Incentive Plan (incorporated by reference to Exhibit 10.19 to the Company's Annual Report on Form 10-K for the year ended December 31, 2013).
10.16+	Form of Stock Option Agreement (incorporated by reference to Exhibit 10.16 to the Company’s Annual Report on Form 10-K for the year ended December 31, 2016).
10.17+	Form of Restricted Stock Unit Agreement (incorporated by reference to Exhibit 10.17 to the Company’s Annual Report on Form 10-K for the year ended December 31, 2016).
10.18+	Letter agreement with Mark J. Alles (incorporated by reference to Exhibit 10. 1 to the Company’s Quarterly Report on Form 10-Q for the quarter ended March 31, 2013).
10.19+	Letter agreement with Rupert Vessey (incorporated by reference to Exhibit 10.19 to the Company’s Annual Report on Form 10-K for the year ended December 31, 2016).
10.20†	License Agreement among the Company, Celgene Alpine Investment Company II LLC and Nogra Pharma Limited, dated as of April 23, 2014 (incorporated by reference to Exhibit 10.1 to the Company’s Quarterly Report on Form 10-Q filed July 29, 2014).
10.21+	Letter Agreement between the Company and Peter N. Kellogg, dated May 21, 2014 (incorporated by reference to Exhibit 99.2 to the Company’s Current Report on Form 8-K filed on May 22, 2014).

10.22+	Letter Agreement between the Company and Scott Smith dated April 1, 2017 (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 10-Q filed on April 27, 2017).
10.23+	Form of Performance Stock Unit Agreement (incorporated by reference to Exhibit 10.23 to the Company's Annual Report on Form 10-K for the year ended December 31, 2016).
21.1*	List of Subsidiaries.
23.1*	Consent of KPMG LLP.
24.1*	Power of Attorney
31.1*	Certification by the Company's Chief Executive Officer.
31.2*	Certification by the Company's Chief Financial Officer.
32.1*	Certification by the Company's Chief Executive Officer pursuant to 18 U.S.C. Section 1350.
32.2*	Certification by the Company's Chief Financial Officer pursuant to 18 U.S.C. Section 1350.
101*	The following materials from Celgene Corporation's Annual Report on Form 10-K for the year ended December 31, 2017, formatted in XBRL (Extensible Business Reporting Language): (i) the Consolidated Balance Sheets, (ii) the Consolidated Statements of Income, (iii) the Consolidated Statements of Comprehensive Income, (iv) the Consolidated Statements of Cash Flows, (v) the Consolidated Statements of Stockholders' Equity and (vi) Notes to Consolidated Financial Statements.

*Filed herewith.
† Confidential treatment requested as to certain portions, which portions have been omitted and submitted separately to the Securities and Exchange Commission.
+ Constitutes a management contract or compensatory plan or arrangement.

ITEM 16. FORM 10-K SUMMARY
None.

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 its behalf by the undersigned thereunto duly authorized.

CELGENE CORPORATION

By: /s/ Mark J. Alles
Mark J. Alles
Chief Executive Officer
(principal executive officer)

Date: February 7, 2018

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 capacities and on the dates indicated.

Signature	Title	Date
/s/ Mark J. Alles Mark J. Alles	Chairman of the Board; Chief Executive Officer (principal executive officer)	February 7, 2018
/s/ Peter N. Kellogg Peter N. Kellogg	Chief Financial Officer (principal financial and accounting officer)	February 7, 2018
* Richard W. Barker	Director	February 7, 2018
* Michael W. Bonney	Director	February 7, 2018
* Michael D. Casey	Director	February 7, 2018
* Carrie S. Cox	Director	February 7, 2018
* Michael A. Friedman	Director	February 7, 2018
* Julia A. Haller	Director	February 7, 2018
* Gilla Kaplan	Director	February 7, 2018
* James Loughlin	Director	February 7, 2018
* Ernest Mario	Director	February 7, 2018

*By: /s/ Mark J. Alles
Mark J. Alles
Attorney-in-fact

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Celgene Corporation and Subsidiaries
Schedule II – Valuation and Qualifying Accounts
(In Millions)

Year ended December 31,	Balance at Beginning of Year	Charged to Expense or Sales	Deductions	Balance at End of Year
2017:				
Allowance for doubtful accounts	$ 15	$ (1)	$ (2)	$ 16
Allowance for customer discounts	16	193 [1]	189	20
Subtotal	31	192	187	36
Allowance for sales returns	18	8 [1]	11	15
Total	$ 49	$ 200	$ 198	$ 51
2016:				
Allowance for doubtful accounts	$ 18	$ 1	$ 4	$ 15
Allowance for customer discounts	12	154 [1]	150	16
Subtotal	30	155	154	31
Allowance for sales returns	17	11 [1]	10	18
Total	$ 47	$ 166	$ 164	$ 49
2015:				
Allowance for doubtful accounts	$ 20	$ —	$ 2	$ 18
Allowance for customer discounts	12	111 [1]	111	12
Subtotal	32	111	113	30
Allowance for sales returns	10	16 [1]	9	17
Total	$ 42	$ 127	$ 122	$ 47

[1] Amounts are a reduction from gross sales.