Celanese Corp
Form 10-K
February 10, 2017
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UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

Form 10-K
þ ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
For the fiscal year ended December 31, 2016
OR
o TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
(Commission File Number) 001-32410
CELANESE CORPORATION
(Exact Name of Registrant as Specified in its Charter)

Delaware (State or Other Jurisdiction of Incorporation or Organization)	98-0420726 (I.R.S. Employer Identification No.)
222 West Las Colinas Blvd., Suite 900N Irving, TX (Address of Principal Executive Offices)	75039-5421 (Zip Code)

(972) 443-4000
(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
Series A Common Stock, par value $0.0001 per share	New York Stock Exchange
3.250% Senior Notes due 2019	New York Stock Exchange
1.125% Senior Notes due 2023	New York Stock Exchange

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 þ 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 þ
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 þ No o
Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Website, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (§ 232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes þ 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 the 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. þ
Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See the definitions of "large accelerated filer," "accelerated filer" and "smaller reporting company" in Rule 12b-2 of the Exchange Act. (Check one):

Large accelerated filer þ Accelerated filer o Non-accelerated filer o Smaller reporting company o
(Do not check if a smaller reporting company)
Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Act). Yes o No þ
The aggregate market value of the registrant's Series A Common Stock held by non-affiliates as of June 30, 2016 (the last business day of the registrants' most recently completed second fiscal quarter) was $9,438,643,905.
The number of outstanding shares of the registrant's Series A Common Stock, $0.0001 par value, as of February 6, 2017 was 140,926,576.
DOCUMENTS INCORPORATED BY REFERENCE
Certain portions of the registrant's Definitive Proxy Statement relating to the 2017 annual meeting of stockholders, to be filed with the Securities and Exchange Commission, are incorporated by reference into Part III.

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Special Note Regarding Forward-Looking Statements

Certain statements in this Annual Report on Form 10-K ("Annual Report") or in other materials we have filed or will file with the Securities and Exchange Commission ("SEC"), and incorporated herein by reference, are forward-looking in nature as defined in Section 27A of the Securities Act of 1933, as amended, Section 21E of the Securities Exchange Act of 1934, as amended, and the Private Securities Litigation Reform Act of 1995. You can identify these statements by the fact that they do not relate to matters of a strictly factual or historical nature and generally discuss or relate to forecasts, estimates or other expectations regarding future events. Generally, the words "believe," "expect," "intend," "estimate," "anticipate," "project," "plan," "may," "can," "could," "might," "will" and similar expressions identify forward-looking statements, including statements that relate to such matters as planned and expected capacity increases and utilization rates; anticipated capital spending; environmental matters; legal proceedings; sources of raw materials and exposure to, and effects of hedging of raw material and energy costs and foreign currencies; interest rate fluctuations; global and regional economic, political, business and regulatory conditions; expectations, strategies, and plans for individual assets and products, business segments, as well as for the whole Company; cash requirements and uses of available cash; financing plans; pension expenses and funding; anticipated restructuring, divestiture, and consolidation activities; planned construction or operation of facilities; cost reduction and control efforts and targets and integration of acquired businesses.

Forward-looking statements are not historical facts or guarantees of future performance but instead represent only our beliefs at the time the statements were made regarding future events, which are subject to significant risks, uncertainties, and other factors, many of which are outside of our control and certain of which are listed above. Any or all of the forward-looking statements included in this Annual Report and in any other materials incorporated by reference herein may turn out to be materially inaccurate. This can occur as a result of incorrect assumptions, in some cases based upon internal estimates and analyses of current market conditions and trends, management plans and strategies, economic conditions, or as a consequence of known or unknown risks and uncertainties. Many of the risks and uncertainties mentioned in this Annual Report, such as those discussed in Item 1A. Risk Factors, Item 3. Legal Proceedings and Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations will be important in determining whether these forward-looking statements prove to be accurate. Consequently, neither our stockholders nor any other person should place undue reliance on our forward-looking statements and should recognize that actual results may differ materially from those anticipated by us.

All forward-looking statements made in this Annual Report are made as of the date hereof, and the risk that actual results will differ materially from expectations expressed in this Annual Report will increase with the passage of time. We undertake no obligation, and disclaim any duty, to publicly update or revise any forward-looking statements, whether as a result of new information, future events, changes in our expectations or otherwise. However, we may make further disclosures regarding future events, trends and uncertainties in our subsequent reports on Forms 10-K, 10-Q and 8-K to the extent required under the Exchange Act. The above cautionary discussion of risks, uncertainties and possible inaccurate assumptions relevant to our business includes factors we believe could cause our actual results to differ materially from expected and historical results. Other factors beyond those listed above or in Item 1A. Risk Factors, Item 3. Legal Proceedings and Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations below, including factors unknown to us and factors known to us which we have determined not to be material, could also adversely affect us.

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Item 1. Business

Basis of Presentation

In this Annual Report on Form 10-K, the term "Celanese" refers to Celanese Corporation, a Delaware corporation, and not its subsidiaries. The terms "Company," "we," "our" and "us" refer to Celanese and its subsidiaries on a consolidated basis. The term "Celanese US" refers to the Company's subsidiary, Celanese US Holdings LLC, a Delaware limited liability company, and not its subsidiaries.

Industry

This Annual Report on Form 10-K includes industry data obtained from industry publications and surveys as well as our own internal company surveys. Third-party industry publications, surveys and forecasts generally state that the information contained therein has been obtained from sources believed to be reliable.

Overview

We are a global technology and specialty materials company. We are one of the world's largest producers of acetyl products, which are intermediate chemicals, for nearly all major industries, as well as a leading global producer of high performance engineered polymers that are used in a variety of high-value applications. As a recognized innovator in the chemicals industry, we engineer and manufacture a wide variety of products essential to everyday living. Our broad product portfolio serves a diverse set of end-use applications including paints and coatings, textiles, automotive applications, consumer and medical applications, performance industrial applications, filtration applications, paper and packaging, chemical additives, construction, consumer and industrial adhesives, and food and beverage applications. Our products enjoy leading global positions due to our differentiated business models, large global production capacity, operating efficiencies, proprietary technology and competitive cost structures.

Our large and diverse global customer base primarily consists of major companies in a broad array of industries. We hold geographically balanced global positions and participate in diversified end-use applications. We combine a demonstrated track record of execution, strong performance built on shared principles and objectives, and a clear focus on growth and value creation. Known for operational excellence and execution of our business strategies, we deliver value to customers around the globe with best-in-class technologies and solutions.

Celanese's history began in 1918, the year that its predecessor company, The American Cellulose & Chemical Manufacturing Company, was incorporated. The company, which manufactured cellulose acetate, was founded by Swiss brothers Drs. Camille and Henri Dreyfus. Since that time, the Company has transformed into a leading global technology and specialty materials company. The current Celanese was incorporated in 2004 under the laws of the State of Delaware and is a US-based public company traded on the New York Stock Exchange under the ticker symbol CE.

Headquartered in Irving, Texas, our operations are primarily located in North America, Europe and Asia and consist of 30 global production facilities, and an additional 8 strategic affiliate production facilities. As of December 31, 2016, we employed 7,293 people worldwide.

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Business Segment Overview

We are organized around two complementary cores, Materials Solutions and the Acetyl Chain. Together, these two value drivers share raw materials, technology, integrated systems and research resources to increase efficiency and quickly respond to market needs. The businesses within Materials Solutions drive value through intimate customer relationships, which drives development of value-added applications for these customers. The Acetyl Chain leverages our industry-leading, low-cost technology and global production platforms to serve a broad array of customers and end-use markets around the world.

Within Materials Solutions, we operate principally through two business segments, Advanced Engineered Materials and Consumer Specialties. In Advanced Engineered Materials we leverage our opportunity pipeline to drive growth. In Consumer Specialties we focus on managing our production landscape and productivity. Materials Solutions also includes certain strategic affiliates.

The Acetyl Chain includes our Industrial Specialties and Acetyl Intermediates business segments. Due to our geographic breadth, our net sales are balanced across global regions. See Business Segments below and Note 26 - Segment Information in the accompanying consolidated financial statements for further information.

Business Segments

Advanced Engineered Materials

Products	Major End-Use Applications	Principal Competitors	Key Raw Materials
• Polyoxymethylene ("POM") • Ultra-high molecular weight polyethylene ("UHMW-PE") • Polybutylene terephthalate ("PBT")[1] • Long-fiber reinforced thermoplastics ("LFRT") • Liquid crystal polymers ("LCP") • Thermoplastic elastomers ("TPE") • Nylon • Polypropylene	• Fuel system components • Automotive safety systems • Medical • Industrial • Battery separators • Consumer electronics • Appliances • Filtration equipment • Telecommunications • Low-friction and low-wear grade acetal copolymer	• BASF SE • E. I. du Pont de Nemours and Company • Koninklijke DSM N.V. • SABIC Innovative Plastics • Solvay S.A. Other regional competitors: • Asahi Kasei Corporation • Braskem S.A. • Lanxess AG • Mitsubishi Gas Chemical Company, Inc. • Sumitomo Corporation • Teijin Limited • Toray Industries, Inc.	• Formaldehyde (for POM) • Ethylene (for UHMW-PE and TPE) • Polypropylene (for LFRT) • Fibers (for LFRT) • Acetic anhydride (for LCP) • Propylene (for TPE) • Styrene (for TPE) • Butadiene (for TPE)

(1) We compound PBT.

Overview

Our Advanced Engineered Materials segment includes our engineered materials business and certain strategic affiliates. The engineered materials business leverages our leading project pipeline model to more rapidly commercialize projects. Our unique approach is based on deep customer engagement to develop new projects that are aligned with our skill domains to address critical customer needs and ensure our success and growth.

Our project pipeline model leverages competitive advantages that include our global assets and resources, marketplace presence, broad materials portfolio and differentiated capabilities. Our global assets and resources are represented by our operations, including polymerization, compounding, research and development, and customer technology centers in all regions of the world, including Brazil, China, Germany, Italy, Mexico, South Korea and the US.

Our broad marketplace presence reflects our deep understanding of global and customer trends, including the growing global demand for vehicles, elevated environmental considerations, increased global connectivity, and improved health and wellness. These global trends drive a range of needed customer solutions, such as vehicle lightweighting, precise components, aesthetics

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and appearance, low emissions, heat resistance and low-friction for medical applications, that we are uniquely positioned to address with our materials portfolio.

Our materials portfolio offers differentiated chemical and physical properties that enable them to perform in a variety of conditions. These include enduring a wide range of temperatures, resisting adverse chemical interactions and withstanding deformation. POM, PBT and LFRT are used in a broad range of performance-demanding applications, including fuel system components, automotive safety systems, consumer electronics, appliances, industrial products and medical applications. UHMW-PE is used in battery separators, industrial products, filtration equipment, coatings and medical applications. Primary end uses for LCP are electrical applications or products and consumer electronics. These value-added applications in diverse end uses support the business' global growth objectives.

On December 1, 2016, we acquired 100% of the stock of the Forli, Italy based SO.F.TER. S.p.A., a leading thermoplastic compounder. The acquisition included its comprehensive product portfolio of engineering thermoplastics, including nylon and polypropylene polymers, and TPEs, as well as all of its manufacturing, technology and commercial facilities and customer agreements. TPEs' physical properties, including its toughness and elasticity, creep resistance, impact strength, flexibility at low temperatures, retention of characteristic at higher temperatures and chemical resistance, enable them to be used in automotive, construction, appliances and consumer applications. See Note 4 - Acquisitions, Dispositions and Plant Closures in the accompanying consolidated financial statements for further information.

We also have several differentiated polymer technologies designed for the utility industry, the oil and gas industry, original equipment manufacturers and companies that enhance supply chain efficiency. These include composite technologies for the utility industry that deliver greater reliability, capacity and performance for utility transmission lines.

On February 1, 2017, we signed a definitive agreement to acquire the nylon compounding division of Nilit Group, an independent producer of high performance nylon, resins, fibers and compounds. Subject to closing conditions, we will acquire Nilit Plastics' nylon compounding product portfolio, customer agreements and manufacturing, technology and commercial facilities.

Our differentiator capabilities are highlighted in our intimate and unique customer engagement which allows us to work across the entirety of our customers' value chain. For example, in the automotive industry we work with original equipment manufacturers as well as system and tier suppliers and injection molders in numerous areas, including polymer formulation and functionality, part and structural design, mold design, color development, part testing and part processing. This business segment also includes four strategic affiliates that complement our global reach, improve our ability to capture growth opportunities in emerging economies and positions us as a leading participant in the global specialty polymers industry.

• Key Products

POM. Commonly known as polyacetal in the chemical industry, POM is sold by our engineered materials business under the trademarks Celcon® and Hostaform®. POM is used for diverse end-use applications in the automotive, industrial, consumer and medical industries. These applications include mechanical parts in automotive fuel system components and window lift systems, water handling, conveyor belts, sprinkler systems, drug delivery systems and gears in large and small home appliances.

We continue to innovate and broaden the portfolio of Celcon® and Hostaform® in order to support the industry needs for higher performing polyacetal. We have expanded our portfolio to include products with higher impact resistance and stiffness, low emissions, improved wear resistance and enhanced appearance such as laser marking and metallic effects.

Polyplastics Co., Ltd., our 45%-owned strategic affiliate ("Polyplastics"), and Korea Engineering Plastics Co., Ltd., our 50%-owned strategic affiliate ("KEPCO"), also manufacture POM and other engineering resins in the Asia-Pacific region.

The primary raw material for POM is formaldehyde, which is manufactured from methanol. Raw materials are sourced from internal production and from third parties, generally through long-term contracts.

UHMW-PE. Celanese is the global leader in UHMW-PE products which are sold under the trademark GUR®. They are highly engineered thermoplastics designed for a variety of industrial, consumer and medical applications. Primary applications for the material include lead acid battery separators, heavy machine components, lithium ion separator membranes, and noise and vibration dampening tapes. Several specialty grades are also produced for applications in high performance filtration equipment, ballistic fibers, thermoplastic and elastomeric additives, as well as medical implants.

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Polyesters. Our products include a series of thermoplastic polyesters including Celanex® PBT, Impet® PET (polyethylene terephthalate) and Thermx® PCT (polycyclohexylene-dimethylene terephthalate), as well as Riteflex®, a thermoplastic polyester elastomer. These products are used in a wide variety of automotive, electrical and consumer applications, including ignition system parts, radiator grilles, electrical switches, appliance and sensor housings, light emitting diodes and technical fibers.

LFRT. Celstran® and Factor®, our LFRT products, impart extra strength and stiffness, making them more suitable for larger parts than conventional thermoplastics. These products are used in automotive, transportation and industrial applications, such as instrument panels, consoles and front end modules. LFRTs meet a wide range of end-user requirements and are excellent candidates for metal replacement where they provide the required structural integrity with significant weight reduction, corrosion resistance and the potential to lower manufacturing costs.

LCP. Vectra® and Zenite®, our LCP brands, are primarily used in electrical and electronics applications for precision parts with thin walls and complex shapes and applications requiring heat dissipation. They are also used in high heat cookware applications.

TPE. Forprene®, Sofprene® T, Pibiflex® and Laprene®, our TPE brands, are primarily used in automotive, construction, appliances and consumer applications due to their ability to combine the advantages of both flexible and plastic materials. These materials are selected for their ability to stretch and return to their near original shape creating a longer life and better physical range than other materials.

Nylon. Our nylon products include Nylfor® A (PA 6.6) and Nylfor® B (PA 6) and are used in automotive, appliances, industrial and consumer applications due to their mechanical properties, high impact resistance, resistance to organic solvents, high wear and fatigue resistance even at high temperatures, and easy processing and molding.

Polypropylene. Our polypropylene products include Polifor®, Litepol® and Tecnoprene® and are primarily used in automotive, appliances, electrical and consumer applications due to their high impact and fatigue resistance, exceptional rigidity at high temperatures and an ability to withstand chemical agents.

• Geographic Regions

Net sales by destination for the Advanced Engineered Materials segment by geographic region are as follows:

	Year Ended December 31,					
	2016		2015		2014	
	(In $ millions, except percentages)					
North America	511	35 %	496	37 %	509	35 %
Europe and Africa	564	39 %	526	40 %	617	42 %
Asia-Pacific	332	23 %	266	20 %	284	20 %
South America	37	3 %	38	3 %	49	3 %
Total	1,444	100 %	1,326	100 %	1,459	100 %

• Customers

Advanced Engineered Materials' principal customers are original equipment manufacturers and their suppliers serving the automotive, medical, industrial and consumer industries. By collaborating with our customers, our engineered materials business assists in developing and improving specialized applications and systems and offers customers global solutions. Our engineered materials business has long-standing relationships and multi-year arrangements with many of its major customers and utilizes distribution partners to expand its customer base.

The pricing of products by the Advanced Engineered Materials segment is primarily based on the value of the material we produce and is largely independent of changes in the cost of raw materials. Therefore, in general, margins may expand or contract in response to changes in raw material costs.

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Consumer Specialties

Products	Major End-Use Applications	Principal Competitors	Key Raw Materials
Cellulose derivatives			
• Acetate tow • Acetate flake • Acetate film	• Filtration • Films • Flexible packaging	• Daicel Corporation • Eastman Chemical Company • Mitsubishi Rayon Co., Ltd • Solvay S.A.	• Wood pulp • Acetic acid • Acetic anhydride
Food ingredients			
• Acesulfame potassium ("Ace-K") • Potassium sorbate • Sorbic acid • Sweetener systems	• Beverages • Confections • Baked goods	• Anhui Jinhe Industry Co., Ltd. • Suzhou Hope Technology Co., Ltd. • Ajinomoto Co. Inc. • The NutraSweet Company • Tate & Lyle plc • Daicel Corporation • Nantong Acetic Acid Chemical Co., Ltd.	• Diketene (for Ace-K) For potassium sorbate and sorbic acid: • Acetic acid • Crotonaldehyde • Ethylene • Potassium hydroxide

• Overview

The Consumer Specialties segment includes our cellulose derivatives and food ingredients businesses, which serve consumer-driven applications.

Our cellulose derivatives business is a leading global producer and supplier of acetate tow, acetate flake and acetate film, primarily used in filter products applications. Our near-term focus in cellulose derivatives is to drive productivity initiatives through our business, including managing our own production landscape. We hold an approximately 30% ownership interest in three separate ventures in China that produce acetate flake and acetate tow. China National Tobacco Corporation, a Chinese state-owned tobacco entity, has been our venture partner for three decades and has driven successful growth in our cellulose derivatives business. Our cellulose derivatives business has production sites in Belgium, Mexico, the United Kingdom and the US, along with sites at our three cellulose derivatives ventures in China.

Our food ingredients business is a leading global supplier of Ace-K for the food and beverage industry and is a leading producer of food protection ingredients, such as potassium sorbate and sorbic acid. Similar to engineered materials, we leverage our leading project pipeline process in our food ingredients business in which we have over fifty years of experience in developing and marketing specialty ingredients for the food and beverages industry. Our food ingredients business has a production facility in Germany, with sales and distribution facilities in all major regions of the world.

• Key Products

Acetate tow, acetate flake and acetate film. Acetate tow is a fiber used primarily in cigarette filters. In order to produce acetate tow, we first produce acetate flake by processing wood pulp with acetic acid and acetic anhydride. Wood pulp generally comes from reforested trees and is purchased externally from a variety of sources, and acetic anhydride is an intermediate chemical that we produce from acetic acid in our Acetyl Intermediates segment. Acetate flake is then further processed into acetate tow. Acetate flake can also be a solvent that is cast to create a film, which is primarily used in packaging for food and high-end luxury goods, as well as other applications such as anti-fog films, which are sold under the trademark, Clarifoil®.

Sales of acetate tow amounted to 14%, 14% and 14% of our consolidated net sales for the years ended December 31, 2016, 2015 and 2014, respectively.

Sunett® sweetener. Ace-K, a non-nutritive high intensity sweetener sold under the trademark Sunett®, is used in a variety of beverages, confections and dairy products throughout the world. Sunett® sweetener is the ideal blending partner for caloric and non-caloric sweeteners as it balances the sweetness profile. It is recognized in the food industry for its consistent product quality and reliable supply. The primary raw material for Sunett is diketene, which is derived from acetic acid produced in our Acetyl Intermediates segment.

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Qorus® sweetener system. The Qorus® sweetener system is designed to assist food and beverage formulators in achieving their unique taste profile. This product enables the manufacturer to balance taste, without the need to mask certain notes, and ultimately provide the consumer with a pure, authentic taste. The Qorus® sweetener system is designed for low- to no-calorie carbonated and non-carbonated beverages, flavored waters, energy drinks, milk and dairy products.

Food protection ingredients. Our food protection ingredients, potassium sorbate and sorbic acid, are mainly used in foods, beverages and personal care products.

•Geographic Regions

Net sales by destination for the Consumer Specialties segment by geographic region are as follows:

	Year Ended December 31,								
	2016			2015			2014		
	(In $ millions, except percentages)								
North America	175	19	%	183	19	%	195	17	%
Europe and Africa	457	49	%	476	49	%	549	48	%
Asia-Pacific	248	27	%	255	26	%	352	30	%
South America	49	5	%	55	6	%	62	5	%
Total[1]	929	100	%	969	100	%	1,158	100	%

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(1) Excludes intersegment sales of $0 million, $0 million and $2 million for the years ended December 31, 2016, 2015 and 2014, respectively.

•Customers

Acetate tow is sold principally to the major tobacco companies that account for a majority of worldwide cigarette production. Contracts with most of our customers are generally entered into on an annual or multi-year basis. Our food ingredients business primarily sells Sunett® sweetener to a limited number of large multinational and regional customers and the Qorus® sweetener system to regional customers in the food and beverage industry under long-term and annual contracts. Food protection ingredients are primarily sold through regional distributors to small and medium sized customers and directly to large multinational customers in the food industry.

The pricing of products within the cellulose derivatives and food ingredients businesses is sensitive to demand and is primarily based on the value of the material we produce. Many sales in these businesses are conducted under contracts with pricing for one or more years. As a result, margins may expand or contract in response to changes in raw material costs over these similar periods, and we may be unable to adjust pricing also due to other factors, such as the intense level of competition in the industry.

•Competition

The European Commission instituted a dumping investigation into the sales of Ace-K produced in China into the European Union. As a result of this investigation, on November 1, 2015, "definitive dumping duties" became effective as published in the European Commission's Official Journal. The definitive duties range between €2.64 and €4.58 net per kg and have been imposed for a period of five years from the effective date. We do not produce Ace-K in China.

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Industrial Specialties

Products	Major End-Use Applications	Principal Competitors	Key Raw Materials
Emulsion polymers			
• Conventional emulsions • Vinyl acetate ethylene ("VAE") emulsions	• Paints • Coatings • Adhesives • Textiles • Paper finishing	• BASF SE • Dairen Chemical Corporation • The Dow Chemical Company • Wacker Chemie AG	• Vinyl acetate monomer ("VAM") • Ethylene • Acrylate esters • Styrene
EVA polymers			
• Ethylene vinyl acetate ("EVA") resins and compounds • Low-density polyethylene resins ("LDPE")	• Flexible packaging • Lamination products • Automotive parts	• Arkema • E. I. du Pont de Nemours and Company • ExxonMobil Chemical	• VAM • Ethylene

• Overview

The Industrial Specialties segment, which includes our emulsion polymers and EVA polymers businesses, is active in every major global industrial sector and serves diverse industrial and consumer end-use applications. These include traditional vinyl-based end uses, such as paints and coatings and adhesives, as well as other unique, high-value end uses including flexible packaging, thermal laminations, wire and cable, and compounds.

Our emulsion polymers business is a leading global producer of vinyl acetate-based emulsions and develops products and application technologies to improve performance, create value and drive innovation in applications such as paints and coatings, adhesives, construction, glass fiber, textiles and paper. Our emulsion polymers products are sold under globally and regionally recognized brands including EcoVAE®, Mowilith®, Vinamul®, Celvolit®, Duroset®, TufCOR® and Avicor®. The emulsion polymers business has production facilities in Canada, China, Germany, the Netherlands, Singapore, Sweden and the US and is supported by expert technical service regionally.

Our EVA polymers business is a leading North American manufacturer of a full range of specialty EVA resins and compounds as well as select grades of LDPE. Sold under the Ateva® and VitalDose® brands, these products are used in many applications, including flexible packaging films, lamination film products, hot melt adhesives, automotive parts and carpeting. Our EVA polymers business has a production facility in Edmonton, Alberta, Canada.

The Industrial Specialties segment builds on our leading acetyl technology. Our Acetyl Intermediates segment produces VAM, a primary raw material for our emulsion polymers and EVA polymers businesses. Ethylene, another key raw material, is purchased externally from a variety of sources through annual or multi-year contracts.

Our emulsion polymers business has experienced significant growth in Asia, and we have made investments to support continued growth in the region. In September 2016, we began production at our new VAE emulsions unit in Singapore, which will support growing demand for ecologically friendly materials in Southeast Asia. In addition to geographic growth, the Industrial Specialties businesses are focused on supporting our overall manufacturing footprint strategy to increase value, such as integrating our production sites to provide critical economies of scale.

• Key Products

Our emulsion polymers business produces conventional vinyl- and acrylate-based emulsions and VAE emulsions. VAE emulsions are a key component of water-based architectural coatings, adhesives, non-wovens, textiles, glass fiber and other applications.

Our EVA polymers business produces low-density polyethylene, EVA resins and compounds. Low-density polyethylene is produced in high-pressure reactors from ethylene, while EVA resins and compounds are produced in high-pressure reactors from ethylene and VAM.

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Geographic Regions

Net sales by destination for the Industrial Specialties segment by geographic region are as follows:

	Year Ended December 31,								
	2016			2015			2014		
	(In $ millions, except percentages)								
North America	337	35	%	401	37	%	461	38	%
Europe and Africa	460	47	%	485	45	%	562	46	%
Asia-Pacific	165	17	%	180	17	%	181	15	%
South America	14	1	%	16	1	%	20	1	%
Total[(1)]	976	100	%	1,082	100	%	1,224	100	%

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(1) Excludes intersegment sales of $3 million, $0 million and $0 million for the years ended December 31, 2016, 2015 and 2014, respectively.

Customers

Industrial Specialties' products are sold to a diverse group of regional and multinational customers. Customers of our emulsion polymers business are manufacturers of water-based paints and coatings, adhesives, paper, building and construction products, glass fiber, non-wovens and textiles. Customers of our EVA polymers business are engaged in the manufacture of a variety of products, including hot melt adhesives, automotive components, thermal laminations, and flexible and food packaging materials.

Pricing of our products within Industrial Specialties is influenced by changes in the cost of raw materials. Therefore, in general, there is a direct correlation between the cost of raw materials and our net sales for most Industrial Specialties products. This impact to pricing typically lags changes in raw material costs over months or quarters.

Acetyl Intermediates

Products	Major End-Use Applications	Principal Competitors	Key Raw Materials
• Acetic acid • VAM • Acetic anhydride • Acetaldehyde Solvents and derivatives: • Ethyl acetate • Formaldehyde • Butyl acetate • Ethanol	• Paints • Coatings • Adhesives • Lubricants • Pharmaceuticals • Films • Textiles • Inks • Plasticizers • Solvents	• BASF SE • BP PLC • Chang Chun Petrochemical Co., Ltd. • Daicel Corporation • The Dow Chemical Company • Eastman Chemical Company • E. I. du Pont de Nemours and Company • Jiangsu Sopo (Group) Co., Ltd. • Kuraray Co., Ltd. • LyondellBasell Industries N.V. • Nippon Gohsei • Perstorp Inc. • Showa Denko K.K.	For acetic acid and VAM: • Carbon monoxide • Methanol • Ethylene For solvents and derivatives: • Methanol • Acetic acid

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- Overview

Our Acetyl Intermediates segment includes our intermediate chemistry business, which produces and supplies acetyl products, including acetic acid, VAM, acetic anhydride and acetate esters. These products are generally used as starting materials for colorants, paints, adhesives, coatings and pharmaceuticals. Our intermediate chemistry business also produces organic solvents and intermediates for pharmaceutical, agricultural and chemical products.

As an industry leader, our intermediate chemistry business has built on its leading technology, low cost production footprint and attractive competitive position to drive growth. With decades of experience, advanced proprietary process technology and favorable capital and production costs, we are a leading global producer of acetic acid and VAM. AOPlus®3 technology extends our historical technology advantage and enables us to construct a greenfield acetic acid facility with a capacity of 1.8 million tons at a lower capital cost than our competitors. Our VAntage®2 technology could increase VAM capacity by up to 50% to meet growing customer demand globally with minimal investment. We believe our production technology is among the lowest cost in the industry and provides us with global growth opportunities through low cost expansions and a cost advantage over our competitors. In addition, we have focused in recent years on enhancing our ability to drive incremental value through our global production network and productivity initiatives as well as proactively managing the intermediate chemistry business in response to trade flows and prevailing industry trends. Our intermediate chemistry business has production sites in China, Germany, Mexico, Singapore and the US.

- Key Products

Acetyl Products. Acetyl products include acetic acid, VAM, acetic anhydride and acetaldehyde. Acetic acid is primarily used to manufacture VAM, purified terephthalic acid and other acetyl derivatives. VAM is used in a variety of adhesives, paints, films, coatings and textiles. Acetic anhydride is a raw material used in the production of cellulose acetate, detergents and pharmaceuticals. Acetaldehyde is a major feedstock for the production of a variety of derivatives, such as pyridines, which are used in agricultural products. We manufacture acetic acid, VAM and acetic anhydride for our own use in producing downstream, value-added products, as well as for sale to third parties.

Acetic acid and VAM, our basic acetyl intermediates products, are primarily impacted by global supply and demand fundamentals. The principal raw materials in these products are carbon monoxide, which is purpose-made and in which we generally purchase under long-term contracts, and methanol and ethylene, which we generally purchase under both annual and multi-year contracts. Generally, methanol and ethylene are commodity products available from a wide variety of sources, while carbon monoxide is typically obtained from sources in close proximity.

In February 2014, we formed a joint venture, Fairway Methanol LLC ("Fairway"), with Mitsui & Co., Ltd., of Tokyo, Japan ("Mitsui"), in which we own a 50% interest, for the production of methanol at our integrated chemical plant in Clear Lake, Texas. The methanol unit utilizes natural gas in the US Gulf Coast region as a feedstock and benefits from the existing infrastructure at our Clear Lake facility. The methanol facility has an annual capacity of 1.3 million tons. Fairway began production in October 2015. Almost all of our North American methanol needs are met from our share of the production, as well as the long-term contract we have with our joint venture partner, Mitsui.

In 2015, we announced capacity expansions for our acetic acid and VAM facilities in Clear Lake, Texas. The expansions will provide an additional 150kt of product for both facilities. The expansion at our VAM facility will make it the largest and most efficient VAM plant in the world and is expected to be completed by 2018.

Sales from acetyl products amounted to 29%, 31% and 33% of our consolidated net sales for the years ended December 31, 2016, 2015 and 2014, respectively.

Solvents and Derivatives. We manufacture a variety of solvents, formaldehyde and other chemicals, which in turn are used in the manufacture of paints, coatings, adhesives and other products. Many solvents and derivatives products are derived from our production of acetic acid. Primary products are:

- Ethyl acetate, an acetate ester that is a solvent used in coatings, inks and adhesives and in the manufacture of photographic films and coated papers;
- Butyl acetate, an acetate ester that is a solvent used in inks, pharmaceuticals and perfume;
- Formaldehyde and paraformaldehyde, which are primarily used to produce adhesive resins for plywood, particle board, coatings, POM engineering resins and a compound used in making polyurethane; and

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- Other chemicals, such as crotonaldehyde, which are used by our food ingredients business for the production of sorbic acid and potassium sorbates, as well as raw materials for the fragrance and food ingredients industry.

Sales from solvents and derivatives products amounted to 9%, 10% and 11% of our consolidated net sales for the years ended December 31, 2016, 2015 and 2014, respectively.

• Geographic Regions

Net sales by destination for the Acetyl Intermediates segment by geographic region are as follows:

	Year Ended December 31,					
	2016		2015		2014	
	(In $ millions, except percentages)					
North America	645	32 %	588	26 %	743	25 %
Europe and Africa	493	24 %	711	31 %	905	31 %
Asia-Pacific	833	41 %	932	40 %	1,210	41 %
South America	69	3 %	66	3 %	103	3 %
Total[(1)]	2,040	100 %	2,297	100 %	2,961	100 %

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(1) Excludes intersegment sales of $401 million, $447 million and $532 million for the years ended December 31, 2016, 2015 and 2014, respectively.

• Customers

Our intermediate chemistry business sells its products both directly to customers and through distributors. Acetic acid, VAM and acetic anhydride are global businesses, and we generally supply our customers under multi-year contracts. Acetic acid, VAM and acetic anhydride customers produce polymers used in water-based paints, adhesives, paper coatings, polyesters, film modifiers, pharmaceuticals, cellulose acetate and textiles. We have long-standing relationships with most of these customers.

Solvents and derivatives are sold to a diverse group of regional and multinational customers under multi-year contracts and on the basis of long-standing relationships. Solvents and derivatives customers are primarily engaged in the production of paints, coatings and adhesives. We manufacture formaldehyde for our own use as well as for sale to a few regional customers that include manufacturers in the wood products and chemical derivatives industries. The sale of formaldehyde is based on long- and short-term agreements. Specialty solvents are sold globally to a wide variety of customers, primarily in the coatings and resins and the specialty products industries. These products serve global regions in the synthetic lubricant, agrochemical, rubber processing and other specialty chemical areas.

Pricing of acetic acid, VAM and other acetyl products is influenced by changes in the cost of raw materials. Therefore, in general, there is a direct correlation between the cost of raw materials and our net sales for most intermediate chemistry products. This impact to pricing typically lags changes in raw material costs over months or quarters.

Other Activities

Other Activities primarily consists of corporate center costs, including administrative activities such as finance, information technology and human resource functions, interest income and expense associated with our financing activities and results of our captive insurance companies. Our two wholly-owned captive insurance companies are a key component of our global risk management program, as well as a form of self-insurance for our liability and workers compensation risks. The captive insurance companies retain risk at levels approved by management and obtain reinsurance coverage from third parties to limit the net risk retained. One of the captive insurance companies also insures certain third-party risks. Other Activities also includes the interest cost, expected return on assets and net actuarial gains and losses components of our net periodic benefit cost for our defined benefit pension plans and other postretirement plans, which are not allocated to our business segments.

Strategic Affiliates

Our strategic affiliates represent an important component of our strategy for accelerated growth and global expansion. We have a substantial portfolio of affiliates in various regions, including Asia-Pacific, North America and the Middle East. These affiliates, some of which date back as far as the 1960s, have sizeable operations and are significant within their industries.

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Our strategic affiliates have similar business models as our core businesses. With shared characteristics such as products, applications and manufacturing technology, these strategic affiliates complement and extend our technology and specialty materials portfolio. We have historically entered into these investments to gain access to local demand, minimize costs and accelerate growth in areas we believe have significant future business potential. Depending on the level of investment and other factors, we account for our strategic affiliates using either the equity method or cost method of accounting.

Our strategic affiliates contribute substantial earnings and cash flows to us. During the year ended December 31, 2016, our equity method strategic affiliates generated combined sales of $2.0 billion, resulting in our recording $122 million of equity in net earnings of affiliates and $92 million of dividends.

Our strategic affiliates as of December 31, 2016 are as follows:

	Location of Headquarters	Ownership	Partner(s)	Year Entered
Equity Method Investments				
Advanced Engineered Materials				
National Methanol Company	Saudi Arabia	25 %	Saudi Basic Industries Corporation (50%); Texas Eastern Arabian Corporation Ltd. (25%)	1981
KEPCO	South Korea	50 %	Mitsubishi Gas Chemical Company, Inc. (40%); Mitsubishi Corporation (10%)	1999
Polyplastics	Japan	45 %	Daicel Corporation (55%)	1964
Fortron Industries LLC	US	50 %	Kureha America Inc. (50%)	1992
Cost Method Investments				
Consumer Specialties				
Kunming Cellulose Fibers Co. Ltd.	China	30 %	China National Tobacco Corporation (70%)	1993
Nantong Cellulose Fibers Co. Ltd.	China	31 %	China National Tobacco Corporation (69%)	1986
Zhuhai Cellulose Fibers Co. Ltd.	China	30 %	China National Tobacco Corporation (70%)	1993

National Methanol Company (Ibn Sina). National Methanol Company represents approximately 1% of the world's methanol production capacity and is one of the world's largest producers of methyl tertiary-butyl ether, a gasoline additive. Its production facilities are located in Saudi Arabia. Saudi Basic Industries Corporation ("SABIC") is responsible for all product marketing. Methanol is a key feedstock for POM production and is produced by our Ibn Sina affiliate which provides an economic hedge against raw material costs in our engineered materials business.

Ibn Sina is currently constructing a 50,000 ton POM production facility in Saudi Arabia. The new facility will supply POM to support Advanced Engineered Materials' future growth plans as well as our venture partners' regional business development. Upon successful startup of the POM facility, which is expected to occur in mid-2017, our indirect economic interest in Ibn Sina will increase from 25% to 32.5%. SABIC's economic interest will remain unchanged.

KEPCO. KEPCO is the leading producer of POM in South Korea. KEPCO has polyacetal production facilities in Ulsan, South Korea, compounding facilities for PBT and nylon in Pyongtaek, South Korea, and participates with Polyplastics and Mitsubishi Gas Chemical Company, Inc. in a world-scale POM facility in Nantong, China.

Polyplastics. Polyplastics is a leading supplier of engineered plastics. Polyplastics is a manufacturer and/or marketer of POM, LCP and PPS, with principal production facilities located in Japan and Malaysia.

Fortron Industries LLC. Fortron Industries LLC ("Fortron") is a leading global producer of PPS, sold under the Fortron® brand, which is used in a wide variety of automotive and other applications, especially those requiring heat and/or chemical resistance. Fortron's facility is located in Wilmington, North Carolina. This venture combines our sales, marketing, distribution, compounding and manufacturing expertise with the PPS polymer technology expertise of Kureha America Inc.

Cellulose derivatives strategic ventures. Our cellulose derivatives ventures within our Consumer Specialties segment generally fund their operations using operating cash flow and pay dividends based on each ventures' performance in the preceding year. In 2016, 2015 and 2014, we received cash dividends of $107 million, $106 million and $115 million, respectively.

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Although our ownership interest in each of our cellulose derivatives ventures exceeds 20%, we account for these investments using the cost method of accounting because we determined that we cannot exercise significant influence over these entities due to local government investment in and influence over these entities, limitations on our involvement in the day-to-day operations and the present inability of the entities to provide timely financial information prepared in accordance with generally accepted accounting principles in the United States of America ("US GAAP").

Other Equity Method Investments

InfraServs. We hold indirect ownership interests in several German InfraServ Groups that own and develop industrial parks and provide on-site general and administrative support to tenants. Our ownership interest in the equity investments in InfraServ affiliates are as follows:

	As of December 31, 2016
	(In percentages)
InfraServ GmbH & Co. Gendorf KG	39
InfraServ GmbH & Co. Hoechst KG	32
InfraServ GmbH & Co. Knapsack KG	27

Research and Development

Our businesses are innovation-oriented and conduct research and development activities to develop new, and optimize existing, production technologies, as well as to develop commercially viable new products and applications. Research and development expense was $78 million, $119 million and $86 million for the years ended December 31, 2016, 2015 and 2014, respectively. We consider the amounts spent during each of the last three fiscal years on research and development activities to be sufficient to execute our current strategic initiatives.

Intellectual Property

We attach importance to protecting our intellectual property, including safeguarding our confidential information and through our patents, trademarks and copyrights, in order to preserve our investment in research and development, manufacturing and marketing. Patents may cover processes, equipment, products, intermediate products and product uses. We also seek to register trademarks as a means of protecting the brand names of our Company and products.

Patents. In most industrial countries, patent protection exists for new substances and formulations, as well as for certain unique applications and production processes. However, we do business in regions of the world where intellectual property protection may be limited and difficult to enforce.

Confidential Information. We maintain stringent information security policies and procedures wherever we do business. Such information security policies and procedures include data encryption, controls over the disclosure and safekeeping of confidential information and trade secrets, as well as employee awareness training.

Trademarks. AOPlus®, Ateva®, Avicor®, BriteCoat®, Celanese®, Celanex®, Celcon®, CelFX®, Celstran®, Celvolit®, Clarifoil®, Duroset®, EcoVAE®, Factor®, Fortron®, GUR®, Hostaform®, Impet®, Mowilith®, MetaLX®, MT®, Nutrinova®, Qorus®, Riteflex®, SlideX™, Sunett®, TCX®, Thermx®, TufCOR®, VAntage®, VAntagePlus™, Vectra®, Vinamul®, VitalDose®, Zenite® and certain other branded products and services named in this document are registered or reserved trademarks or service marks owned or licensed by Celanese. The foregoing is not intended to be an exhaustive or comprehensive list of all registered or reserved trademarks and service marks owned or licensed by Celanese. Fortron® is a registered trademark of Fortron Industries LLC. Hostaform® is a registered trademark of Hoechst GmbH. Mowilith® is a registered trademark of Celanese in most European countries.

We monitor competitive developments and defend against infringements on our intellectual property rights. Neither Celanese nor any particular business segment is materially dependent upon any one patent, trademark, copyright or trade secret.

Environmental and Other Regulation

Matters pertaining to environmental and other regulations are discussed in Item 1A. Risk Factors, as well as Note 2 - Summary of Accounting Policies, Note 16 - Environmental and Note 24 - Commitments and Contingencies in the accompanying consolidated financial statements.

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Employees

Our employees employed on a continuing basis throughout the world are as follows:

	Employees as of December 31, 2016
North America	
US	2,600
Canada	249
Mexico	691
Total	3,540
Europe	
Germany	1,400
Other Europe	1,234
Total	2,634
Asia	997
Rest of World	122
Total	7,293

Backlog

We do not consider backlog to be a significant indicator of the level of future sales activity. In general, we do not manufacture our products against a backlog of orders. Production and inventory levels are based on the level of incoming orders as well as projections of future demand. Therefore, we believe that backlog information is not material to understanding our overall business and should not be considered a reliable indicator of our ability to achieve any particular level of net sales or financial performance.

Available Information — Securities and Exchange Commission ("SEC") Filings and Corporate Governance Materials

We make available free of charge, through our internet website (http://www.celanese.com), our annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K and amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as well as ownership reports on Form 3 and Form 4, as soon as reasonably practicable after electronically filing such material with, or furnishing it to, the SEC. References to our website in this report are provided as a convenience, and the information on our website is not, and shall not be deemed to be a part of this report or incorporated into any other filings we make with the SEC. The SEC maintains a website that contains reports, proxy and information statements, and other information regarding issuers, including Celanese Corporation, that electronically file with the SEC at http://www.sec.gov.

We also make available free of charge, through our website, our Corporate Governance Guidelines of our Board of Directors and the charters of each of the standing committees of our Board of Directors.

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Item 1A. Risk Factors

Many factors could have an effect on our financial condition, cash flows and results of operations. We are subject to various risks resulting from changing economic, environmental, political, industry, business, financial and regulatory conditions. The factors described below represent our principal risks.

Risks Related to Our Business

We are exposed to general economic, political and regulatory conditions and risks in the countries in which we have operations and customers.

We operate globally and have customers in many countries. Our major facilities are primarily located in North America, Europe and Asia, and we hold interests in affiliates that operate in the United States ("US"), Germany, China, Japan, Malaysia, South Korea and Saudi Arabia. Our principal customers are similarly global in scope and the prices of our most significant products are typically regional or world market prices. Consequently, our business and financial results are affected, directly and indirectly, by world economic conditions, including instability in credit markets, declining consumer and business confidence, fluctuating commodity prices and interest rates, volatile exchange rates and other challenges such as the changing regulatory environment.

Our operations are also subject to global political conditions. For example, the US' withdrawal from the Trans-Pacific Partnership, any future withdrawal or renegotiation of trade agreements, including the North American Free Trade Agreement, or the more aggressive prosecution of trade disputes with countries like China, may adversely affect our ability to operate our business and execute our growth strategy. In addition, it may be more difficult for us to enforce agreements, collect receivables, receive dividends and repatriate earnings through foreign legal systems. In certain foreign jurisdictions our operations are subject to nationalization and expropriation risk and some of our contractual relationships within these jurisdictions are subject to cancellation without full compensation for loss. Furthermore, in certain cases where we benefit from local government subsidies or other undertakings, such benefits are subject to the solvency of local government entities and are subject to termination without meaningful recourse or remedies.

We have invested significant resources in China and other Asian countries. This region's growth may slow, and we may fail to realize the anticipated benefits associated with our investment there and, consequently, our financial results may be adversely impacted.

In addition, we have significant operations and financial relationships based in Europe. Historically sales originating in Europe have accounted for over one-third of our net sales. For example, in 2016, sales originating in Europe accounted for approximately 40% of our net sales. Adverse conditions in the European economy related to the United Kingdom's European Union ("EU") membership referendum or otherwise may negatively impact our overall financial results due to reduced economic growth and resulting decreased end-use customer demand.

We are subject to risks associated with the increased volatility in the prices and availability of key raw materials and energy, which could have a significant adverse effect on the margins of our products and our financial results.

We purchase significant amounts of ethylene, methanol, carbon monoxide and natural gas from third parties primarily for use in our production of basic chemicals in the Acetyl Intermediates segment, principally acetic acid, vinyl acetate monomer ("VAM") and formaldehyde. We use a portion of our output of these chemicals, in turn, as inputs in the production of downstream products in all of our business segments. We also purchase some of these raw materials for use in our Industrial Specialties segment, primarily for vinyl acetate ethylene emulsions and ethylene vinyl acetate production, as well as significant amounts of wood pulp for use in our production of cellulose derivatives in our Consumer Specialties segment. The price of many of these items is dependent on the available supply of that item and may increase significantly as a result of uncertainties associated with war, terrorist activities, civil unrest, epidemics, pandemics, weather, natural disasters, the effects of climate change or political instability, plant or production disruptions, strikes or other labor unrest, breakdown or degradation of transportation infrastructure used in the delivery of strategic raw materials and energy commodities, or changes in laws or regulations in any of the countries in which we have significant suppliers. In particular, to the extent of our vertical integration in the production of chemicals, shortages in the availability of raw material chemicals, such as natural gas, ethylene and methanol, or the loss of our dedicated supplies of carbon monoxide, may have an increased adverse impact on us as it can cause a shortage in intermediate and finished products. Such shortages would adversely impact our ability to produce certain products and increase our costs resulting in reduced margins and adverse financial results.

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We are exposed to volatility in the prices of our raw materials and energy. Although we have long-term supply agreements, multi-year purchasing and sales agreements and forward purchase contracts providing for the supply of ethylene, methanol, carbon monoxide, wood pulp, natural gas and electricity, the contractual prices for these raw materials and energy can vary with economic conditions and may be highly volatile. In addition to the factors noted above that may impact supply or price, factors that have caused volatility in our raw material prices in the past and which may do so in the future include:

- Shortages of raw materials due to increasing demand, e.g., from growing uses or new uses;
- Capacity constraints, e.g., due to construction delays, labor disruption, involuntary shutdowns or turnarounds;
- The inability of a supplier to meet our delivery orders or a supplier's choice not to fulfill orders or to terminate a supply contract or our inability to obtain or renew supply contracts on favorable terms;
- The general level of business and economic activity; and
- The direct or indirect effect of governmental regulation (including the impact of government regulation relating to climate change).

If we are not able to fully offset the effects of higher energy and raw material costs through price increases, productivity improvements or cost reduction programs, or if such commodities become unavailable, it could have a significant adverse effect on our ability to timely and profitably manufacture and deliver our products resulting in reduced margins and adverse financial results.

We have a practice of maintaining, when available, multiple sources of supply for raw materials and services. However, some of our individual plants may have single sources of supply for some of their raw materials, such as carbon monoxide, steam and ethylene, or services. Although we have been able to obtain sufficient supplies of raw materials and services, there can be no assurance that unforeseen developments will not affect our ability to source raw materials or services in the future. Even if we have multiple sources of supply for a raw material or a service, there can be no assurance that these sources can make up for the loss of a major supplier. Furthermore, if any sole source or major supplier were unable or unwilling to deliver a raw material or a service for an extended period of time, we may not be able to find an acceptable alternative or any such alternative could result in increased costs. It is also possible profitability will be adversely affected if we are required to qualify additional sources of supply for a raw material or a service to our specifications in the event of the loss of a sole source or major supplier.

A portion of our supply of methanol in North America is currently obtained from our joint venture, Fairway Methanol LLC ("Fairway"), with Mitsui & Co., Ltd., of Tokyo, Japan, in which we own a 50% interest, for the production of methanol at our integrated chemical plant in Clear Lake, Texas. Fairway began production in October 2015.

Production at our manufacturing facilities could be disrupted for a variety of reasons, which could prevent us from producing enough of our products to maintain our sales and satisfy our customers' demands.

A disruption in production at one or more of our manufacturing facilities could have a material adverse effect on our business. Disruptions could occur for many reasons, including fire, natural disasters, weather, unplanned maintenance or other manufacturing problems, disease, strikes or other labor unrest, transportation interruption, government regulation, political unrest or terrorism. Alternative facilities with sufficient capacity or capabilities may not be available, may cost substantially more or may take a significant time to start production, each of which could negatively affect our business and financial performance. If one of our key manufacturing facilities is unable to produce our products for an extended period of time, our sales may be reduced by the shortfall caused by the disruption and we may not be able to meet our customers' needs, which could cause them to seek other suppliers. In particular, production disruptions at our manufacturing facilities that produce chemicals used as inputs in the production of chemicals in other business segments, such as acetic acid, VAM and formaldehyde, could have a more significant adverse effect on our business and financial performance and results of operations to the extent of such vertical integration. Furthermore, to the extent a production disruption occurs at a manufacturing facility that has been operating at or near full capacity, the resulting shortage of our product could be particularly harmful because production at such manufacturing facility may not be able to reach levels achieved prior to the disruption.

Failure to develop new products and production technologies or to implement productivity and cost reduction initiatives successfully may harm our competitive position.

Our operating results depend significantly on the development of commercially viable new products, product grades and applications, as well as process technologies, free of any legal restrictions. If we are unsuccessful in developing new products, applications and production processes in the future, including failing to leverage our opportunity pipeline in our Advanced

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Engineered Materials segment, our competitive position and operating results may be negatively affected. However, as we invest in new technology, we face the risk of unanticipated operational or commercialization difficulties, including an inability to obtain necessary permits or governmental approvals, the development of competing technologies, failure of facilities or processes to operate in accordance with specifications or expectations, construction delays, cost over-runs, the unavailability of financing, required materials or equipment and various other factors. Likewise, we have undertaken and are continuing to undertake initiatives in all of our business segments to improve productivity and performance and to generate cost savings. These initiatives may not be completed or beneficial or the estimated cost savings from such activities may not be realized.

Our business exposes us to potential product liability claims and recalls, which could adversely affect our financial condition and performance.

The development, manufacture and sale of specialty chemical products by us, including products produced for the food and beverage, cigarette, automobile, aerospace, medical device and pharmaceutical industries, involves a risk of exposure to product liability claims, product recalls, product seizures and related adverse publicity. A product liability claim or judgment against us could also result in substantial and unexpected expenditures, affect consumer or customer confidence in our products, and divert management's attention from other responsibilities. Although we maintain product liability insurance, there can be no assurance that this type or the level of coverage is adequate or that we will be able to continue to maintain our existing insurance or obtain comparable insurance at a reasonable cost, if at all. A product recall or a partially or completely uninsured judgment against us could have a material adverse effect on our results of operations or financial condition. Although we have standard contracting policies and controls, we may not always be able to contractually limit our exposure to third party claims should our failure to perform result in downstream supply disruptions or product recalls.

We could be subject to damages based on claims brought against us by our customers or lose customers as a result of the failure of our products to meet certain quality specifications.

Our products provide important performance attributes to our customers' products. If a product fails to perform in a manner consistent with quality specifications, a customer could seek replacement of the product or damages for costs incurred as a result of the product failing to perform as guaranteed. A successful claim or series of claims against us could have a material adverse effect on our financial condition and results of operations and could result in a loss of one or more key customers.

Our future success depends in part on our ability to protect our intellectual property rights. Our inability to protect and enforce these rights could reduce our ability to maintain our industry position and our profit margins.

We rely on our patents, trademarks, copyrights, know-how and trade secrets and patents and other technology licensed from third parties to protect our investment in research and development and our competitive commercial positions in manufacturing and marketing our products. We have adopted internal policies for protecting our know-how and trade secrets. In addition, our practice is to seek patent or trade secret protection for significant developments that provide us competitive advantages and freedom to practice for our businesses. Patents may cover catalysts, processes, products, intermediate products and product uses. These patents are usually filed in strategic countries throughout the world and provide varying periods and scopes of protection based on the filing date and the type of patent application. The legal life and scope of protection provided by a patent may vary among those countries in which we seek protection. As patents expire, the catalysts, processes, products, intermediate products and product uses described and claimed in those patents generally may become available for use by the public subject to our continued protection for associated know-how and trade secrets. We also seek to register trademarks as a means of protecting the brand names of our products, which brand names become more important once the corresponding product or process patents have expired. We operate in regions of the world where intellectual property protection may be limited and difficult to enforce and our continued growth strategy may result in us seeking intellectual property protection in additional regions with similar challenges. If we are not successful in protecting or maintaining our patent, license, trademark or other intellectual property rights, our net sales, results of operations and cash flows may be adversely affected.

Our business is exposed to risks associated with the creditworthiness of our suppliers, customers and business partners and the industries in which our suppliers, customers and business partners participate are cyclical in nature, both of which may adversely affect our business and results of operations.

Our business is exposed to risks associated with the creditworthiness of our key suppliers, customers and business partners and reductions in demand for our customers' products. These risks include the interruption of production at the facilities of our customers, the reduction, delay or cancellation of customer orders, delays in or the inability of customers to obtain financing to purchase our products, delays in or interruptions of the supply of raw materials we purchase and bankruptcy of customers, suppliers or other creditors. Furthermore, some of the industries in which our end-use customers participate, such as the automotive, electrical, construction and textile industries, are highly competitive, to a large extent driven by end-use

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applications, and may experience overcapacity, all of which may affect demand for and the pricing of our products. In addition, many of these industries are cyclical in nature, thus posing risks to us that vary throughout the year. The occurrence of any of these events may adversely affect our cash flow, profitability and financial condition.

Failure to comply with applicable laws or regulations and/or changes in applicable laws or regulations may adversely affect our business and financial results as a whole.

We are subject to extensive international, national, state, local and other laws and regulations. Failure to comply with these laws, including antitrust and anticorruption laws, rules, regulations or court decisions, could expose us to fines, penalties and other costs. Although we have implemented policies and procedures designed to ensure compliance with these laws, rules, regulations and court decisions, there can be no assurance that our employees and business partners and other third parties acting on our behalf will comply with these laws, rules, regulations and court decisions, which could result in fines, penalties and costs and damage to our business reputation.

Moreover, changes in laws or regulations, such as unexpected changes in regulatory requirements (including import or export licensing requirements), or changes in reporting requirements of the US, Canadian, Mexican, German, EU or Asian governmental agencies, could increase the cost of doing business in these regions. Any of these conditions may have an effect on our business and financial results as a whole and may result in volatile current and future prices for our securities, including our stock.

Environmental regulations and other obligations relating to environmental matters could subject us to liability for fines, clean-ups and other damages, require us to incur significant costs to modify our operations and increase our manufacturing and delivery costs.

Costs related to our compliance with environmental laws and regulations, and potential obligations with respect to sites currently or formerly owned or operated by us, may have a significant negative impact on our operating results. We also have obligations related to the indemnity agreement contained in the demerger and transfer agreement between Celanese GmbH and Hoechst AG for environmental matters arising out of certain divestitures that took place prior to the demerger.

Our operations are subject to extensive international, national, state, local and other laws and regulations that govern environmental and health and safety matters. We incur substantial capital and other costs to comply with these requirements. If we violate any one of those laws or regulations, we can be held liable for substantial fines and other sanctions, including limitations on our operations as a result of changes to or revocations of environmental permits involved. Stricter environmental, safety and health laws and regulations could result in substantial costs and liabilities to us or limitations on our operations. Consequently, compliance with these laws and regulations may negatively affect our earnings and cash flows in a particular reporting period. See Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations - Liquidity and Capital Resources for further information.

Changes in environmental, health and safety regulations in the jurisdictions where we manufacture or sell our products could lead to a decrease in demand for our products.

New or revised governmental regulations and independent studies relating to the effect of our products on health, safety or the environment may affect demand for our products and the cost of producing our products. In addition, products we produce, including VAM, formaldehyde and plastics derived from formaldehyde, may be classified in a manner that would adversely affect demand for such products. For example, the International Agency for Research on Cancer ("IARC"), a private research agency, classified formaldehyde as carcinogenic to humans (Group 1) based on studies linking formaldehyde exposure to nasopharyngeal cancer, a rare cancer in humans. In addition, several studies have investigated possible links between formaldehyde exposure and various end points, including leukemia. In October 2009, IARC concluded that there is sufficient evidence of a causal association between formaldehyde and the development of leukemia. In 2011, the National Toxicology Program ("NTP") released the 12th report on carcinogens, which changed the classification of formaldehyde from "reasonably anticipated to be a human carcinogen" to "known to be a human carcinogen". Similar to the IARC modification in 2009, the NTP report also implicates formaldehyde as a leukemogen. We anticipate that the results of the IARC's and the NTP's reviews will be examined and considered by government agencies with responsibility for setting worker and environmental exposure standards and labeling requirements.

Other pending initiatives potentially will require toxicological testing and risk assessments of a wide variety of chemicals, including chemicals used or produced by us. These initiatives include the Voluntary Children's Chemical Evaluation Program, High Production Volume Chemical Initiative and expected modifications to the Toxic Substances Control Act in the US, as well as various European Commission programs, such as the Registration, Evaluation, Authorization and Restriction of Chemicals,

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and new initiatives in Asia and other regions. These assessments may result in heightened concerns about the chemicals involved and additional requirements being placed on the production, handling, labeling or use of the subject chemicals. Such concerns and additional requirements could also increase the cost incurred by our customers to use our chemical products and otherwise limit the use of these products, which could lead to a decrease in demand for these products. Such a decrease in demand would likely have an adverse impact on our business and results of operations.

Our production facilities, including facilities we own and/or operate and operations at our facilities owned and/or operated by third parties, handle the processing of some volatile and hazardous materials that subject us to operating and other risks that could have a negative effect on our operating results.

Although we take precautions to enhance the safety of, and minimize the disruption to, our operations and operations at our facilities owned and/or operated by third parties, we are subject to operating and other risks associated with chemical manufacturing, including the storage and transportation of raw materials, finished products and waste. These risks include, among other things, pipeline and storage tank leaks and ruptures, explosions and fires and discharges or releases of toxic or hazardous substances. In addition, we may have limited control over operations at our facilities owned and/or operated by third parties or such operations may not be fully integrated into our safety programs. These operating and other risks can cause personal injury, property damage, third-party damages and environmental contamination, and may result in the shutdown of affected facilities and the imposition of civil or criminal penalties. The occurrence of any of these events may disrupt production and have a negative effect on the productivity and profitability of a particular manufacturing facility, our operating results and cash flows.

US federal regulations aimed at increasing security at certain chemical production plants and similar legislation that may be proposed in the future, if passed into law, may increase our operating costs and cause an adverse effect on our results of operations.

The Chemical Facility Anti-Terrorism Standards program ("CFATS Program"), which is administered by the Department of Homeland Security ("DHS"), identifies and regulates chemical facilities to ensure that they have security measures in place to reduce the risks associated with potential terrorist attacks on chemical plants located in the US. In December 2014, the Protecting and Securing Chemical Facilities from Terrorist Attacks Act of 2014 ("CFATS Act") was enacted. The CFATS Act reauthorizes the CFATS Program for four years. DHS has released an interim final rule under the CFATS Program that imposes comprehensive federal security regulations for high-risk chemical facilities in possession of specified quantities of chemicals of interest. This rule establishes risk-based performance standards for the security of our nation's chemical facilities. It requires covered chemical facilities to prepare Security Vulnerability Assessments, which identify facility security vulnerabilities, and to develop and implement Site Security Plans, which include measures that satisfy the identified risk-based performance standards. We cannot determine with certainty the costs associated with any security measures that DHS may require.

We are subject to risks associated with possible climate change legislation, regulation and international accords.

Greenhouse gas emissions have become the subject of a large amount of international, national, regional, state and local attention. For example, the Environmental Protection Agency has promulgated rules concerning greenhouse gas emissions and cap and trade initiatives to limit greenhouse gas emissions have been introduced in the EU. In addition, regulation of greenhouse gas also could occur pursuant to future treaty obligations, statutory or regulatory changes or new climate change legislation. For instance, the 2015 Paris Climate Summit Agreement resulted in voluntary commitments by numerous countries to reduce their greenhouse gas emissions, which ultimately could result in firm commitments by various nations with respect to future greenhouse gas emissions. As such, future environmental legislative and regulatory developments related to climate change are possible, which could materially increase operating costs in the chemical industry and thereby increase our manufacturing and delivery costs.

Our business and financial results may be adversely affected by various legal and regulatory proceedings.

We are involved in legal and regulatory proceedings, lawsuits, claims and investigations in the normal course of business and could become subject to additional claims in the future, some of which could be material. The outcome of existing proceedings, lawsuits, claims and investigations may differ from our expectations because the outcomes of such proceedings, including regulatory matters, are often difficult to reliably predict. Various factors or developments can lead us to change current estimates of liabilities and related insurance receivables where applicable, or permit us to make such estimates for matters previously not susceptible to reasonable estimates, such as a significant judicial ruling or judgment, a significant settlement, significant regulatory developments, or changes in applicable law. A future adverse ruling, settlement, or unfavorable development could result in charges that could have a material adverse effect on our business, results of operations or financial

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condition in any particular period. See Note 16 - Environmental and Note 24 - Commitments and Contingencies in the accompanying consolidated financial statements for further information.

Changes in, or the interpretation of, tax legislation or rates throughout the world could materially impact our results.

Our future effective tax rate and related tax balance sheet attributes could be impacted by changes in tax legislation throughout the world. The overall tax environment has made it increasingly challenging for multinational corporations to operate with certainty about taxation in many jurisdictions. For example, the European Commission has been conducting investigations focusing on whether local country tax rulings or tax legislation provide preferential tax treatment that violates EU state aid rules. In addition, the Organization of Economic Cooperation and Development, which represents a coalition of member countries, is supporting changes to numerous long-standing tax principles through its base erosion and profit shifting project, which is focused on a number of issues, including the shifting of profits among affiliated entities located in different tax jurisdictions. Furthermore, a number of countries where we do business, including the US and many countries in the EU, are considering changes in relevant tax, accounting and other laws, regulations and interpretations, including changes to tax laws applicable to multinational corporations. The increasingly complex global tax environment could have a material adverse effect on our effective tax rate, results of operations, cash flows and financial condition.

Currently, the majority of our net sales are generated from customers located outside of the US, and a substantial portion of our assets and employees are located outside of the US. If these offshore funds are needed for our operations in the US, we will access such funds in a tax efficient manner to satisfy cash flow needs.

We have not accrued income taxes or foreign withholding taxes on undistributed earnings for most non-US subsidiaries, because those earnings are intended to be indefinitely reinvested in the operations of those subsidiaries. Certain tax proposals with respect to such earnings could substantially increase our tax expense, which would substantially reduce our income and have a material adverse effect on our results of operations and cash flows from operating activities. Currently, there are no contemplated cash distributions that will result in incremental US taxes payable in excess of applicable foreign tax credits related to such undistributed earnings. As a result, we have not provided any deferred income taxes on the portion of undistributed foreign earnings determined not to be permanently reinvested in foreign operations.

Our future effective tax rates could be affected by changes in the mix of earnings in countries with differing statutory tax rates, expirations of tax holidays or rulings, changes in the assessment regarding the realization of deferred tax assets, or changes in tax laws and regulations or their interpretation. We are subject to the regular examination of our income tax returns by various tax authorities. Examinations in material jurisdictions or changes in laws, rules, regulations or interpretations by local taxing authorities could result in impacts to tax years open under statute or to foreign operating structures currently in place. We regularly assess the likelihood of adverse outcomes resulting from these examinations or changes in laws, rules, regulations or interpretations to determine the adequacy of our provision for taxes. It is possible the outcomes from these examinations will have a material adverse effect on our financial condition and operating results.

Our significant non-US operations expose us to global exchange rate fluctuations that could adversely impact our profitability.

We conduct a significant portion of our operations outside the US. Consequently, fluctuations in currencies of other countries, especially the Euro, may materially affect our operating results. Because our consolidated financial statements are presented in US dollars, we must translate revenues, income and expenses, as well as assets and liabilities, into US dollars based on average exchange rates prevailing during the reporting period or the exchange rate at the end of that period. Therefore, increases or decreases in the value of the US dollar against other major currencies will affect our net operating revenues, operating income and the cost of balance sheet items denominated in foreign currencies. Foreign exchange rates can also impact the competitiveness of products produced in certain jurisdictions and exported for sale into other jurisdictions. These changes may impact the value received for the sale of our goods versus those of our competitors.

In addition to currency translation risks, we incur a currency transaction risk whenever one of our operating subsidiaries enters into a purchase or sales transaction using a currency different from the operating subsidiary's functional currency. Given the volatility of exchange rates, particularly the strengthening of the US dollar against major currencies or the currencies of large developing countries, we may not be able to manage our currency transaction and translation risks effectively.

We use financial instruments to hedge certain exposure to foreign currency fluctuations, but those hedges in most cases cover existing balance sheet exposures and not future transactional exposures. We cannot guarantee that our hedging strategies will be effective. In addition, the use of financial instruments creates counterparty settlement risk. Failure to effectively manage these risks could have an adverse impact on our financial position, results of operations and cash flows.

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We are subject to information technology security threats that could materially affect our business.

We have been and will continue to be subject to advanced persistent information technology security threats. While some unauthorized access to our information technology systems occurs, we believe to date these threats have not had a material impact on our business. We seek to detect and investigate these security incidents and to prevent their recurrence but in some cases we might be unaware of an incident or its magnitude and effects. The theft, mis-use or publication of our intellectual property and/or confidential business information or the compromising of our systems or networks could harm our competitive position, cause operational disruption, reduce the value of our investment in research and development of new products and other strategic initiatives or otherwise adversely affect our business or results of operations. To the extent that any security breach results in inappropriate disclosure of our employees', customers' or vendors' confidential information, we may incur liability as a result. Although we attempt to mitigate these risks by employing a number of measures, including monitoring of our systems and networks, and maintenance of backup and protective systems, our systems, networks, products and services remain potentially vulnerable to increasingly sophisticated advanced persistent threats that may have a material effect on our business. In addition, the devotion of additional resources to the security of our information technology systems in the future could significantly increase the cost of doing business or otherwise adversely impact our financial results.

Our success depends upon our ability to attract and retain key employees and the identification and development of talent to succeed senior management.

We rely heavily on our management team. Accordingly, our success depends on our ability to attract and retain key personnel. The inability to recruit and retain key personnel or the unexpected loss of key personnel may adversely affect our operations. In addition, because of our reliance on our management team, our future success depends in part on our ability to identify and develop talent to succeed senior management. The retention of key personnel and appropriate senior management succession planning will continue to be important to the successful implementation of our strategies.

Significant changes in pension fund investment performance or assumptions relating to pension costs may have a material effect on the valuation of pension obligations, the funded status of pension plans and our pension cost.

The cost of our pension plans is incurred over long periods of time and involves many uncertainties during those periods of time. Our funding policy for pension plans is to accumulate plan assets that, over the long run, will approximate the present value of projected benefit obligations. Our pension cost is materially affected by the discount rate used to measure pension obligations, the level and value of plan assets available to fund those obligations at the measurement date and the expected long-term rate of return on plan assets. Significant changes in investment performance or a change in the portfolio mix of invested assets will likely result in corresponding increases and decreases in the valuation of plan assets and a change in the discount rate or mortality assumptions, which will likely result in an increase or decrease in the valuation of pension obligations. The combined impact of these changes will affect the reported funded status of our pension plans as well as the net periodic pension cost in the following fiscal years. In recent years, an extended duration strategy in the asset portfolio has been implemented in some plans to reduce the influence of liability volatility due to changes in interest rates. If the funded status of a pension plan declines, we may be required to make unscheduled contributions in addition to those contributions for which we have already planned.

Some of our employees are unionized, represented by workers councils or are subject to local laws that are less favorable to employers than the laws of the US.

As of December 31, 2016, we had 7,293 employees globally. Approximately 17% of our 2,600 US-based employees are unionized. In addition, a large number of our employees are employed in countries in which employment laws provide greater bargaining or other employment rights than the laws of the US. Such employment rights require us to work collaboratively with the legal representatives of the employees to effect any changes to labor agreements. Most of our employees in Europe are represented by workers councils and/or unions that must approve any changes in terms and conditions of employment, including potentially salaries and benefits. They may also impede efforts to restructure our workforce. Although we believe we have a good working relationship with our employees and their legal representatives, a strike, work stoppage, or slowdown by our employees could occur, resulting in a disruption of our operations or higher ongoing labor costs.

Provisions in our certificate of incorporation and bylaws, as well as any stockholders' rights plan, may discourage a takeover attempt.

Provisions contained in our certificate of incorporation and bylaws could make it more difficult for a third party to acquire us, even if doing so might be beneficial to our stockholders. Provisions of our certificate of incorporation and bylaws impose various procedural and other requirements, which could make it more difficult for stockholders to effect certain corporate actions. For example, our certificate of incorporation authorizes our Board of Directors to determine the rights, preferences, privileges and restrictions of unissued series of preferred stock, without any vote or action by our stockholders. Thus, our Board of Directors can authorize and issue shares of preferred stock with voting or conversion rights that could adversely affect the voting or other rights of holders of our Series A common stock, par value $0.0001 per share ("Common Stock"). These rights may have the effect of delaying or deterring a change of control of our Company. In addition, a change of control of our Company may be delayed or deterred as a result of any stockholders' rights plan that our Board of Directors may adopt. These provisions could limit the price that certain investors might be willing to pay in the future for shares of our Common Stock.

We may incur significant charges in the event we close or divest all or part of a manufacturing plant or facility.

We periodically assess our manufacturing operations in order to manufacture and distribute our products in the most efficient manner. Based on our assessments, we may make capital improvements to modernize certain units, move manufacturing or distribution capabilities from one plant or facility to another plant or facility, discontinue manufacturing or distributing certain products or close or divest all or part of a manufacturing plant or facility. We also have shared services agreements at several of our plants and if such agreements are terminated or revised, we would assess and potentially adjust our manufacturing operations. The closure or divestiture of all or part of a manufacturing plant or facility could result in future charges that could be significant. See Note 4 - Acquisitions, Dispositions and Plant Closures in the accompanying consolidated financial statements for further information.

We may not be able to complete future acquisitions or successfully integrate future acquisitions into our business, which could adversely affect our business or results of operations.

As part of our growth strategy, we intend to pursue acquisitions and joint venture opportunities. Successful accomplishment of this objective may be limited by the availability and suitability of acquisition candidates and by our financial resources, including available cash and borrowing capacity. Acquisitions involve numerous risks, including difficulty determining appropriate valuation, integrating operations, technologies, services and products of the acquired lines or businesses, personnel turnover and the diversion of management's attention from other business matters. In addition, we may be unable to achieve anticipated benefits from these acquisitions in the time frame that we anticipate, or at all, which could adversely affect our business or results of operations.

The insurance coverage that we maintain may not fully cover all operational risks.

We maintain property, business interruption and casualty insurance but such insurance may not cover all of the risks associated with the hazards of our business and is subject to limitations, including deductibles and maximum liabilities covered. We may incur losses beyond the limits, or outside the coverage, of our insurance policies, including liabilities for environmental remediation. In the future, the types of insurance we obtain and the level of coverage we maintain may be inadequate or we may be unable to continue to maintain our existing insurance or obtain comparable insurance at a reasonable cost.

Differences in views with our joint venture participants may cause our joint ventures not to operate according to their business plans, which may adversely affect our results of operations.

We currently participate in a number of joint ventures and may enter into additional joint ventures in the future. The nature of a joint venture requires us to work cooperatively with unaffiliated third parties. Differences in views among joint venture participants may result in delayed decisions or failure to agree on major decisions. If these differences cause the joint ventures to deviate from their business plans or to fail to achieve their desired operating performance, our results of operations could be adversely affected.

Risks Related to Our Indebtedness

Our level of indebtedness and other liabilities could diminish our ability to raise additional capital to fund our operations or refinance our existing indebtedness when it matures, limit our ability to react to changes in the economy or the chemicals industry and prevent us from meeting obligations under our indebtedness.

See Note 14 - Debt in the accompanying consolidated financial statements for further information about our indebtedness. See Note 13 - Noncurrent Other Liabilities, Note 15 - Benefit Obligations and Note 16 - Environmental in the accompanying consolidated financial statements for further information about our other obligations.

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Our level of indebtedness and other liabilities could have important consequences, including:

- Increasing our vulnerability to general economic and industry conditions, including exacerbating the impact of any adverse business effects that are determined to be material adverse events under our existing senior credit agreement (the "New Credit Agreement") or our indentures (the "Indentures") governing our €300 million in aggregate principal amount of 3.250% senior unsecured notes due 2019, $400 million in aggregate principal amount of 5.875% senior unsecured notes due 2021, $500 million in aggregate principal amount of 4.625% senior unsecured notes due 2022 and €750 million in aggregate principal amount of 1.125% senior unsecured notes due 2023 (collectively, the "Senior Notes");
- Requiring a substantial portion of cash flow from operations to be dedicated to the payment of principal and interest on indebtedness and amounts payable in connection with the satisfaction of our other liabilities, therefore reducing our ability to use our cash flow to fund operations, capital expenditures and future business opportunities or pay dividends on our Common Stock;
- Exposing us to the risk of increased interest rates as certain of our borrowings are at variable rates of interest;
- Exposing us to the risk of changes in currency exchange rates as certain of our borrowings are denominated in foreign currencies;
- Limiting our ability to obtain additional financing for working capital, capital expenditures, product development, debt service requirements, acquisitions and general corporate or other purposes;
- Limiting our ability to enter into certain commercial arrangements because of concerns of counterparty risks; and
- Limiting our ability to adjust to changing market conditions and placing us at a competitive disadvantage compared to our competitors who have less debt.

We may incur additional indebtedness in the future, which could increase the risks described above.

Although covenants under the New Credit Agreement and the Indentures limit our ability to incur certain additional indebtedness, these restrictions are subject to a number of qualifications and exceptions, and the indebtedness we could incur in compliance with these restrictions could be significant. To the extent that we incur additional indebtedness, the risks associated with our debt described above, including our possible inability to service our debt, including the Senior Notes, would increase.

Our variable rate and euro denominated indebtedness subjects us to interest rate risk and foreign currency exchange rate risk, which could cause our debt service obligations to increase significantly and affect our operating results.

Certain of our borrowings are at variable rates of interest or are euro denominated, which exposes us to interest rate risk and currency exchange rate risk, respectively. See Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations - Liquidity and Capital Resources, Item 7A. Quantitative and Qualitative Disclosures About Market Risk below and Note 22 - Derivative Financial Instruments in the accompanying consolidated financial statements for further information.

We may not be able to generate sufficient cash to service our indebtedness and may be forced to take other actions to satisfy obligations under our indebtedness, which may not be successful.

Our ability to make scheduled payments on or to refinance our debt obligations depends on the financial condition and operating performance of our subsidiaries, which are subject to prevailing economic and competitive conditions and to certain financial, business and other factors beyond our control. We may not be able to maintain a level of cash flows from operating activities sufficient to permit us to pay the principal, premium, if any, and interest on our indebtedness. If our cash flows and capital resources are insufficient to fund our debt service obligations, we may be forced to reduce or delay capital expenditures, sell assets, seek additional capital or restructure or refinance our indebtedness. These alternative measures may not be successful and may not permit us to meet our scheduled debt service obligations. In the absence of such operating results and resources, we could face substantial liquidity problems and might be required to dispose of material assets or operations to meet our debt service and other obligations. We may not be able to consummate those dispositions or to obtain the proceeds that we could realize from them, and these proceeds may not be adequate to meet any debt service obligations then due.

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Restrictive covenants in our debt agreements may limit our ability to engage in certain transactions and may diminish our ability to make payments on our indebtedness or pay dividends.

The New Credit Agreement, the Indentures and the Receivables Purchase Agreement (the "Purchase Agreement") governing our receivables securitization facility each contain various covenants that limit our ability to engage in specified types of transactions. The New Credit Agreement contains covenants including, but not limited to, restrictions on our ability to incur additional debt; incur liens securing debt; enter into sale-leaseback transactions; merge or consolidate with any other person; and sell, assign, transfer, lease, convey or otherwise dispose of all or substantially all of the Issuer's assets or the assets of its subsidiaries.

In addition, the Indentures limit Celanese US Holdings LLC ("Celanese US") and certain of its subsidiaries' ability to, among other things, incur liens securing debt; enter into sale-leaseback transactions; merge or consolidate with any other person; and sell, assign, transfer, lease, convey or otherwise dispose of all or substantially all of Celanese US's assets or the assets of its restricted subsidiaries.

The Purchase Agreement also contains covenants including, but not limited to, restrictions on CE Receivables LLC, a wholly-owned, "bankruptcy remote" special purpose subsidiary of the Company, and certain other Company subsidiaries' ability to incur indebtedness; grant liens on assets; merge, consolidate, or sell certain assets; prepay or modify certain indebtedness; and engage in other businesses.

Such restrictions in our debt obligations could result in us having to obtain the consent of our lenders and holders of the Senior Notes in order to take certain actions. Disruptions in credit markets may prevent us from obtaining or make it more difficult or more costly for us to obtain such consents. Our ability to expand our business or to address declines in our business may be limited if we are unable to obtain such consents.

A breach of any of these covenants could result in a default, which, if not cured or waived, could have a material adverse effect on our business, financial condition and results of operations. Furthermore, a default under the New Credit Agreement could permit lenders to accelerate the maturity of our indebtedness under the New Credit Agreement and to terminate any commitments to lend. If the lenders under the New Credit Agreement accelerate the repayment of such indebtedness, we may not have sufficient liquidity to repay such amounts or our other indebtedness, including the Senior Notes. In such event, we could be forced into bankruptcy or liquidation.

Celanese and Celanese US are holding companies and depend on subsidiaries to satisfy their obligations under the Senior Notes and the guarantee of Celanese US's obligations under the Senior Notes and the New Credit Agreement by Celanese.

As holding companies, Celanese and Celanese US conduct substantially all of their operations through their subsidiaries, which own substantially all of our consolidated assets. Consequently, the principal source of cash to pay Celanese and Celanese US's obligations, including obligations under the Senior Notes and the guarantee of Celanese US's obligations under the New Credit Agreement and the Indentures by Celanese, is the cash that our subsidiaries generate from their operations. We cannot assure that our subsidiaries will be able to, or be permitted to, make distributions to enable Celanese US and/or Celanese to make payments in respect of their obligations. Each of our subsidiaries is a distinct legal entity and, under certain circumstances, applicable country or state laws, regulatory limitations and terms of our debt instruments may limit our subsidiaries' ability to distribute cash to Celanese US and Celanese. While the New Credit Agreement and the Indentures limit the ability of our subsidiaries to put restrictions on paying dividends or making other intercompany payments to us, these limitations are subject to certain qualifications and exceptions, which may have the effect of significantly restricting the applicability of those limits. In the event Celanese US and/or Celanese do not receive distributions from our subsidiaries, Celanese US and/or Celanese may be unable to make required payments on the indebtedness under the New Credit Agreement, the Indentures, the guarantee of Celanese US's obligations under the New Credit Agreement and the Indentures by Celanese, or our other indebtedness.

Item 1B. Unresolved Staff Comments

None.

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Item 2. Properties

Description of Property

We and our affiliates own or lease numerous production and manufacturing facilities throughout the world. We also own or lease other properties, including office buildings, warehouses, pipelines, research and development facilities and sales offices. We continuously review and evaluate our facilities as a part of our strategy to optimize our business portfolio. The following table sets forth a list of our principal offices, production and other facilities throughout the world as of December 31, 2016.

Site	Leased/Owned	Products/Functions
Corporate Offices		
Amsterdam, Netherlands	Leased	Administrative offices
Budapest, Hungary	Leased	Administrative offices
Irving, Texas, US	Leased	Corporate headquarters
Nanjing, China	Leased	Administrative offices
Shanghai, China	Leased	Administrative offices
Sulzbach, Germany	Leased	Administrative offices
Advanced Engineered Materials		
Auburn Hills, Michigan, US	Leased	Automotive Development Center
Bishop, Texas, US	Owned	Polyoxymethylene ("POM"), Ultra-high molecular weight polyethylene ("UHMW-PE"), Compounding
Calhoun, Georgia, US	Owned	Polypropylene recycling
Campo Bom, Brazil	Leased	Compounding
Ferrara, Italy	Leased	Compounding
Florence, Kentucky, US	Owned	Compounding
Forli, Italy	Leased	Compounding
Frankfurt am Main, Germany[(1)]	Owned by InfraServ GmbH & Co. Hoechst KG[(5)]	POM, Compounding
Fuji City, Japan	Owned by Polyplastics Co., Ltd.[(5)]	POM, Polybutylene terephthalate, Liquid crystal polymers ("LCP"), Compounding
Jubail, Saudi Arabia	Owned by National Methanol Company[(5)]	Methyl tertiary-butyl ether, Methanol
Kaiserslautern, Germany[(1)]	Leased	Long-fiber reinforced thermoplastics ("LFRT")
Kuantan, Malaysia	Owned by Polyplastics Co., Ltd.[(5)]	POM, Compounding
Lebanon, Tennessee, US	Owned	Compounding
Mantova, Italy	Leased	Compounding
Nanjing, China[(2)]	Owned	LFRT, UHMW-PE, Compounding
Oberhausen, Germany[(1)]	Leased	UHMW-PE
Shelby, North Carolina, US	Owned	LCP, Compounding
Silao, Mexico	Leased	Compounding
Suzano, Brazil[(1)]	Leased	Compounding
Ulsan, South Korea		POM

	Owned by Korea Engineering Plastics Co., Ltd.(5)	
Wilmington, North Carolina, US	Owned by Fortron Industries LLC(5)	Polyphenylene sulfide
Winona, Minnesota, US	Owned	LFRT
Consumer Specialties		
Frankfurt am Main, Germany(3)	Owned by InfraServ GmbH & Co. Hoechst KG(5)	Sorbates, Sunett® sweetener, Qorus® sweetener system
Kunming, China	Leased by Kunming Cellulose Fibers Co. Ltd.(6)	Acetate tow

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Site	Leased/Owned	Products/Functions
Consumer Specialties		
Lanaken, Belgium	Owned	Acetate tow
Nantong, China	Owned by Nantong Cellulose Fibers Co. Ltd.[7]	Acetate tow, Acetate flake
Narrows, Virginia, US	Owned	Acetate tow, Acetate flake
Ocotlán, Mexico	Owned	Acetate tow, Acetate flake
Spondon, Derby, United Kingdom	Owned	Acetate film
Zhuhai, China	Leased by Zhuhai Cellulose Fibers Co. Ltd.[8]	Acetate tow
Industrial Specialties		
Boucherville, Quebec, Canada	Owned	Conventional emulsions
Edmonton, Alberta, Canada	Owned	Low-density polyethylene resins, Ethylene vinyl acetate
Enoree, South Carolina, US	Owned	Conventional emulsions, Vinyl acetate ethylene ("VAE") emulsions
Frankfurt am Main, Germany[3]	Owned by InfraServ GmbH & Co. Hoechst KG[5]	Conventional emulsions, VAE emulsions
Geleen, Netherlands	Owned	VAE emulsions
Nanjing, China[2]	Owned	Conventional emulsions, VAE emulsions
Perstorp, Sweden	Owned	Conventional emulsions, VAE emulsions
Jurong Island, Singapore[1]	Leased	VAE emulsions
Acetyl Intermediates		
Bay City, Texas, US[1]	Leased	Vinyl acetate monomer ("VAM")
Bishop, Texas, US	Owned	Formaldehyde
Cangrejera, Mexico	Owned	Acetic anhydride, Ethyl acetate
Clear Lake, Texas, US[4]	Owned	Acetic acid, VAM, Methanol
Frankfurt am Main, Germany[3]	Owned by InfraServ GmbH & Co. Hoechst KG[5]	Acetaldehyde, VAM, Butyl acetate
Jurong Island, Singapore[1]	Leased	Acetic acid, Butyl acetate, Ethyl acetate, VAM
Nanjing, China[2]	Owned	Acetic acid, Acetic anhydride, VAM, Ethanol

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(1) Celanese owns the assets on this site and leases the land through the terms of a long-term land lease.

(2) Multiple Celanese business segments conduct operations at the Nanjing facility. Celanese owns the assets on this site. Celanese also owns the land through "land use right grants" for 46 to 50 years with the right to transfer, mortgage or lease such land during the term of the respective land use right grant.

(3) Multiple Celanese business segments conduct operations at the Frankfurt Hoechst Industrial Park located in Frankfurt am Main, Germany.

(4) Methanol is produced by our joint venture, Fairway Methanol LLC, in which Celanese owns a 50% interest.

(5) A Celanese equity method investment.

(6) A Celanese cost method investment. Kunming Cellulose Fibers Co. Ltd. owns the assets on this site and leases the land from China National Tobacco Corporation.

(7) A Celanese cost method investment. Nantong Cellulose Fibers Co. Ltd. owns the assets on this site and the land through "land use right grants" with the right to transfer, mortgage or lease such land during the term of the respective land use right grant.

(8) A Celanese cost method investment. Zhuhai Cellulose Fibers Co. Ltd. owns the assets on this site and leases the land from China National Tobacco Corporation.

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Item 3. Legal Proceedings

See Note 16 - Environmental and Note 24 - Commitments and Contingencies in the accompanying consolidated financial statements for a discussion of environmental matters and commitments and contingencies related to legal and regulatory proceedings.

Item 4. Mine Safety Disclosures

None.

Executive Officers of the Registrant

The names, ages and biographies of our executive officers as of February 10, 2017 are as follows:

Name	Age	Position
Mark C. Rohr	65	Chairman of the Board of Directors and Chief Executive Officer, President
Patrick D. Quarles	49	Executive Vice President and President, Acetyl Chain and Integrated Supply Chain
Scott M. Sutton	52	Executive Vice President and President, Materials Solutions
Peter G. Edwards	55	Executive Vice President and General Counsel
Christopher W. Jensen	50	Senior Vice President, Finance and Chief Financial Officer
Kevin S. Oliver	45	Chief Accounting Officer and Controller

Mark C. Rohr was named our Chairman of the Board of Directors, President and Chief Executive Officer in April 2012 after being a member of our Board of Directors since April 2007. Prior to joining the Company, Mr. Rohr was Executive Chairman and director of Albemarle Corporation, a global developer, manufacturer and marketer of highly-engineered specialty chemicals. During his 11 years with Albemarle, he held various executive positions, including Chairman and Chief Executive Officer. Earlier in his career, Mr. Rohr held executive leadership roles with various companies, including Occidental Chemical Corporation and The Dow Chemical Company. Mr. Rohr has served on the board of directors of Ashland Global Holdings Inc. (f/k/a Ashland Inc.) since 2008, and currently serves as a member of its audit committee and its environmental, health & safety committee. In 2016, he also served as Chairman of the American Chemistry Council's Executive Committee and as Chairman of the International Association of Chemical Associations. Mr. Rohr received a bachelor's degree in chemistry and chemical engineering from Mississippi State University.

Patrick D. Quarles has served as our Executive Vice President and President, Acetyl Chain and Integrated Supply Chain since June 2015. Prior to joining the Company, Mr. Quarles held a variety of leadership positions at LyondellBasell Industries N.V. before serving as Executive Vice President of the Intermediates and Derivatives (I&D) segment and the supply chain and procurement functions from January 2015 to June 2015, including serving as a member of LyondellBasell's Management Board from April 2014 to June 2015, Senior Vice President - I&D from 2009 to April 2014 and Vice President of Performance Chemicals from 2004 to 2009. Mr. Quarles began his career in 1990 at ARCO Chemical/Union Carbide where he held various positions in sales, marketing and business management. Mr. Quarles earned a bachelor of science degree in mechanical engineering from Clemson University and a master of management degree from The Kellogg School of Management at Northwestern University.

Scott M. Sutton has served as our Executive Vice President and President, Materials Solutions since June 2015. From January 2015 to June 2015, Mr. Sutton served as our Vice President and General Manager of the Engineered Materials business. Prior to January 2015, Mr. Sutton served as our Vice President of Supply Chain from March 2014 to January 2015 and as our Vice President of Acetic Acid and Anhydride from August 2013 to March 2014. Mr. Sutton had 28 years of industry experience prior to joining the Company, including serving as President and General Manager of Chemtura Corporation's AgroSolutions business, business manager for Landmark Structures and Vice President of a division of Albemarle Corporation. Mr. Sutton earned a civil engineering degree from Louisiana State University and is a registered professional engineer in Texas.

Peter G. Edwards has served as our Executive Vice President and General Counsel since January 23, 2017. Mr. Edwards previously was Executive Vice President and General Counsel of Baxalta Incorporated, the biopharmaceutical spin-off from Baxter, from June 2015 until its merger with Shire plc in July 2016. Before that, he was Senior Vice President and General Counsel of the global specialty pharmaceuticals company Mallinckrodt plc from June 2013 to June 2015, and served as its Vice President and General Counsel from May 2010 to its spin-off from Covidien plc in June 2013. He previously served as Executive Vice President and General Counsel for Solvay

Pharmaceuticals in Brussels, Belgium from June 2007 until April 2010 and as its Senior Vice President and General Counsel in the US from October 2005 to June 2007. Before that, he held inhouse positions of increasing responsibility within Mettler-Toledeo, Inc. and Eli Lilly and Company. Mr. Edwards began his career in 1990 as an associate in the Kansas City, Missouri office of Shook, Hardy & Bacon L.L.P. Mr. Edwards received his J.D., cum laude, from Brigham Young University.

Christopher W. Jensen has served as our Chief Financial Officer since July 2015 and as our Senior Vice President, Finance since April 2011. He served as our Interim Chief Financial Officer from May 2014 to July 2015. From August 2010 to April 2011, Mr. Jensen served as our Senior Vice President, Finance and Treasurer. Prior to August 2010, Mr. Jensen served as our Vice President and Corporate Controller from March 2009 to July 2010. From May 2008 to February 2009, he served as Vice President of Finance and Treasurer. In his current capacity, Mr. Jensen has global responsibility for corporate finance, treasury operations, insurance risk management, pensions, global business services, information technology, corporate accounting, tax and general ledger accounting. Mr. Jensen was previously the Assistant Corporate Controller from March 2007 through April 2008, where he was responsible for SEC reporting, internal reporting, and technical accounting. In his initial role at the Company from October 2005 through March 2007, he built and directed our technical accounting function. From August 2004 to October 2005, Mr. Jensen worked in the inspections and registration division of the Public Company Accounting Oversight Board. He spent 13 years of his career at PricewaterhouseCoopers LLP, an assurance, tax and advisory services firm, in various positions in both the auditing and mergers & acquisitions groups. Mr. Jensen earned bachelor's and master's degrees in accounting from Brigham Young University and is a Certified Public Accountant.

Kevin S. Oliver has served as our Chief Accounting Officer since July 2016 and as our Controller since July 2010. Prior to his current roles, Mr. Oliver held various executive positions at the Company, including serving as our Assistant Controller and our Director of Technical Accounting. Prior to joining the Company, Mr. Oliver served as an Associate Director of Inspections for the Public Company Accounting Oversight Board from December 2003 to February 2008. He spent 11 years of his career at public accounting firms, including as senior manager at Ernst & Young and Arthur Andersen, each an assurance, tax and advisory services firm, and in various positions in the auditing practice. Mr. Oliver holds a bachelor's degree in accounting from Southern Nazarene University and is a Certified Public Accountant.

PART II

Item 5. Market for the Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities

Market Information

Our Series A common stock, par value $0.0001 per share ("Common Stock") has traded on the New York Stock Exchange ("NYSE") under the symbol "CE" since January 21, 2005. The closing sale price of our Common Stock, as reported by the NYSE, on February 6, 2017 was $88.05. The following table sets forth the high and low intraday sales prices per share of our Common Stock, as reported by the NYSE, and the dividends declared per share on our Common Stock for the periods indicated.

	Price Range		Dividends
	High	Low	Declared
	(In $ per share)		
2016			
Quarter ended March 31, 2016	67.99	55.07	0.30
Quarter ended June 30, 2016	74.55	61.11	0.36
Quarter ended September 30, 2016	71.18	60.59	0.36
Quarter ended December 31, 2016	84.97	63.02	0.36
2015			
Quarter ended March 31, 2015	60.61	52.56	0.25
Quarter ended June 30, 2015	73.13	54.99	0.30
Quarter ended September 30, 2015	74.19	54.35	0.30
Quarter ended December 31, 2015	72.95	58.56	0.30

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Holders

No shares of Celanese's Series B common stock and no shares of Celanese's 4.25% convertible perpetual preferred stock are issued and outstanding. As of February 6, 2017, there were 28 holders of record of our Common Stock. By including persons holding shares in broker accounts under street names, however, we estimate we have approximately 83,632 beneficial holders.

Dividend Policy

Our Board of Directors has a policy of declaring, subject to legally available funds, a quarterly cash dividend on each share of our Common Stock as determined in its sole discretion. Our Board of Directors may, at any time, modify or revoke our dividend policy on our Common Stock.

On February 9, 2017, we declared a cash dividend of $0.36 per share on our Common Stock amounting to $51 million. The cash dividend was for the period from November 1, 2016 to January 31, 2017 and will be paid on March 3, 2017 to holders of record as of February 21, 2017.

The amount available to us to pay cash dividends is not currently restricted by our existing senior credit facility and our indentures governing our senior unsecured notes. See Note 14 - Debt in the accompanying consolidated financial statements for further information. Any decision to declare and pay dividends in the future will be made at the discretion of our Board of Directors and will depend on, among other things, our results of operations, cash requirements, financial condition, contractual restrictions and other factors that our Board of Directors may deem relevant.

Celanese Purchases of its Equity Securities

Information regarding repurchases of our Common Stock during the three months ended December 31, 2016 is as follows:

Period	Total Number of Shares Purchased[1]	Average Price Paid per Share	Total Number of Shares Purchased as Part of Publicly Announced Program	Approximate Dollar Value of Shares Remaining that may be Purchased Under the Program[2]
October 1 - 31, 2016	794,085	$ 71.68	792,931	$ 674,000,000
November 1 - 30, 2016	1,881,163	$ 76.11	1,880,872	$ 531,000,000
December 1 - 31, 2016	—	$ —	—	$ 531,000,000
Total	2,675,248		2,673,803	

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(1) Includes 1,154 and 291 for October and November 2016, respectively, related to shares withheld from employees to cover their statutory minimum withholding requirements for personal income taxes related to the vesting of restricted stock units.

(2) Our Board of Directors has authorized the aggregate repurchase of $2.4 billion of our Common Stock since February 2008.

See Note 17 - Stockholders' Equity in the accompanying consolidated financial statements for further information.

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Performance Graph

The following performance graph compares the cumulative total return on Celanese Corporation common stock from December 31, 2011 through December 31, 2016 to that of the Standard & Poor's ("S&P") 500 Stock Index and the Dow Jones US Chemicals Index. Cumulative total return represents the change in stock price and the amount of dividends received during the indicated period, assuming reinvestment of all dividends. The performance graph assumes an investment of $100 on December 31, 2011. The stock performance shown in the graph is included in response to SEC requirements and is not intended to forecast or to be indicative of future performance.

Comparison of Cumulative Total Return

The above performance graph and related information shall not be deemed "soliciting material" or to be "filed" with the Securities and Exchange Commission, nor shall such information be incorporated by reference into any future filing under the Securities Act of 1933 or Securities Exchange Act of 1934, each as amended, except to the extent that we specifically incorporate it by reference into such filing.

Recent Sales of Unregistered Securities

Our deferred compensation plan offers certain of our senior employees and directors the opportunity to defer a portion of their compensation in exchange for a future payment amount equal to their deferments plus or minus certain amounts based upon the market-performance of specified measurement funds selected by the participant. These deferred compensation obligations may be considered securities of Celanese. Participants were required to make deferral elections under the plan prior to January 1 of the year such deferrals will be withheld from their compensation. We relied on the exemption from registration provided by Section 4(2) of the Securities Act in making this offer to a select group of employees, fewer than 35 of which were non-accredited investors under the rules promulgated by the Securities and Exchange Commission.

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Item 6. Selected Financial Data

The balance sheet data as of December 31, 2016 and 2015 and the statements of operations data for the years ended December 31, 2016, 2015 and 2014, all of which are set forth below, are derived from the consolidated financial statements included elsewhere in this Annual Report and should be read in conjunction with those financial statements and the notes thereto. The balance sheet data as of December 31, 2014, 2013 and 2012 and the statement of operations data for the years ended December 31, 2013 and 2012 set forth below were derived from previously issued financial statements, adjusted for a change in accounting policy for defined benefit pension plans and other postretirement benefit plans and a change in accounting policy for debt issuance costs.

	Year Ended December 31,				
	2016	2015	2014	2013	2012
	(In $ millions, except per share data)				
Statement of Operations Data					
Net sales	5,389	5,674	6,802	6,510	6,418
Other (charges) gains, net	(11)	(351)	15	(158)	(14)
Operating profit (loss)	893	326	758	1,508	175
Earnings (loss) from continuing operations before tax	1,030	488	941	1,609	321
Earnings (loss) from continuing operations	908	287	627	1,101	376
Earnings (loss) from discontinued operations	(2)	(2)	(7)	—	(4)
Net earnings (loss) attributable to Celanese Corporation	900	304	624	1,101	372
Earnings (loss) per common share					
Continuing operations — basic	6.22	2.03	4.07	6.93	2.37
Continuing operations — diluted	6.19	2.01	4.04	6.91	2.35
Balance Sheet Data (as of the end of period)					
Total assets	8,357	8,586	8,796	8,994	8,973
Total debt	3,008	2,981	2,723	3,040	3,071
Total Celanese Corporation stockholders' equity	2,588	2,378	2,818	2,699	1,730
Other Financial Data					
Depreciation and amortization	290	357	292	305	308
Capital expenditures[1]	247	483	681	408	339
Dividends paid per common share[2]	1.38	1.15	0.93	0.53	0.27

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(1) Amounts include accrued capital expenditures. Amounts do not include capital expenditures related to capital lease obligations.

(2) Annual dividends for the year ended December 31, 2016 consist of one quarterly dividend payment of $0.30 per share and three quarterly dividend payments of $0.36 per share. Annual dividends for the year ended December 31, 2015 consist of one quarterly dividend payment of $0.25 per share and three quarterly dividend payments of $0.30 per share. See Note 17 - Stockholders' Equity in the accompanying consolidated financial statements for further information.

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Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations

In this Annual Report on Form 10-K ("Annual Report"), the term "Celanese" refers to Celanese Corporation, a Delaware corporation, and not its subsidiaries. The terms the "Company," "we," "our" and "us," refer to Celanese and its subsidiaries on a consolidated basis. The term "Celanese US" refers to the Company's subsidiary, Celanese US Holdings LLC, a Delaware limited liability company, and not its subsidiaries.

The following discussion should be read in conjunction with the accompanying consolidated financial statements and notes to the consolidated financial statements, which are prepared in accordance with accounting principles generally accepted in the United States of America ("US GAAP").

Investors are cautioned that the forward-looking statements contained in this section and other parts of this Annual Report involve both risk and uncertainty. Several important factors could cause actual results to differ materially from those anticipated by these statements. Many of these statements are macroeconomic in nature and are, therefore, beyond the control of management. See "Forward-Looking Statements" below.

Forward-Looking Statements

Management's Discussion and Analysis of Financial Condition and Results of Operations and other parts of this Annual Report contain certain forward-looking statements and information relating to us that are based on the beliefs of our management as well as assumptions made by, and information currently available to, us. Generally, words such as "believe," "expect," "intend," "estimate," "anticipate," "project," "plan," "may," "can," "could," "might," "will" and similar expressions, as they relate to us are intended to identify forward-looking statements. These statements reflect our current views with respect to future events, are not guarantees of future performance and involve risks and uncertainties that are difficult to predict. Further, certain forward-looking statements are based upon assumptions as to future events that may not prove to be accurate. See "Special Note Regarding Forward-Looking Statements" at the beginning of this Annual Report for further discussion.

Item 1A. Risk Factors of this Annual Report also contains a description of certain risk factors that you should consider which could significantly affect our financial results. In addition, the following factors could cause our actual results to differ materially from those results, performance or achievements that may be expressed or implied by such forward-looking statements. These factors include, among other things:

- changes in general economic, business, political and regulatory conditions in the countries or regions in which we operate;
- the length and depth of product and industry business cycles particularly in the automotive, electrical, textiles, electronics and construction industries;
- changes in the price and availability of raw materials, particularly changes in the demand for, supply of, and market prices of ethylene, methanol, natural gas, wood pulp and fuel oil and the prices for electricity and other energy sources;
- the ability to pass increases in raw material prices on to customers or otherwise improve margins through price increases;
- the ability to maintain plant utilization rates and to implement planned capacity additions and expansions;
- the ability to reduce or maintain current levels of production costs and to improve productivity by implementing technological improvements to existing plants;
- increased price competition and the introduction of competing products by other companies;
- market acceptance of our technology;
- the ability to obtain governmental approvals and to construct facilities on terms and schedules acceptable to us;
- changes in the degree of intellectual property and other legal protection afforded to our products or technologies, or the theft of such intellectual property;
- compliance and other costs and potential disruption or interruption of production or operations due to accidents, interruptions in sources of raw materials, cyber security incidents, terrorism or political unrest, or other unforeseen events or delays in construction or operation of facilities, including as a result of geopolitical conditions, the occurrence of acts of war or terrorist incidents or as a result of weather or natural disasters;

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- potential liability for remedial actions and increased costs under existing or future environmental regulations, including those relating to climate change;
- potential liability resulting from pending or future litigation, or from changes in the laws, regulations or policies of governments or other governmental activities in the countries in which we operate;
- changes in currency exchange rates and interest rates;
- our level of indebtedness, which could diminish our ability to raise additional capital to fund operations or limit our ability to react to changes in the economy or the chemicals industry; and
- various other factors, both referenced and not referenced in this Annual Report.

Many of these factors are macroeconomic in nature and are, therefore, beyond our control. Should one or more of these risks or uncertainties materialize, or should underlying assumptions prove incorrect, our actual results, performance or achievements may vary materially from those described in this Annual Report as anticipated, believed, estimated, expected, intended, planned or projected. We neither intend nor assume any obligation to update these forward-looking statements, which speak only as of their dates.

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Results of Operations

Financial Highlights

	Year Ended December 31, 2016	2015	Change	Year Ended December 31, 2015	2014	Change
	(In $ millions, except percentages)					
Statement of Operations Data						
Net sales	5,389	5,674	(285)	5,674	6,802	(1,128)
Gross profit	1,405	1,318	87	1,318	1,616	(298)
Selling, general and administrative ("SG&A") expenses	(416)	(506)	90	(506)	(758)	252
Other (charges) gains, net	(11)	(351)	340	(351)	15	(366)
Operating profit (loss)	893	326	567	326	758	(432)
Equity in net earnings (loss) of affiliates	155	181	(26)	181	246	(65)
Interest expense	(120)	(119)	(1)	(119)	(147)	28
Refinancing expense	(6)	—	(6)	—	(29)	29
Dividend income - cost investments	108	107	1	107	116	(9)
Earnings (loss) from continuing operations before tax	1,030	488	542	488	941	(453)
Earnings (loss) from continuing operations	908	287	621	287	627	(340)
Earnings (loss) from discontinued operations	(2)	(2)	—	(2)	(7)	5
Net earnings (loss)	906	285	621	285	620	(335)
Net earnings (loss) attributable to Celanese Corporation	900	304	596	304	624	(320)
Other Data						
Depreciation and amortization	290	357	(67)	357	292	65
SG&A expenses as a percentage of Net sales	7.7 %	8.9 %		8.9 %	11.1 %	
Operating margin[1]	16.6 %	5.7 %		5.7 %	11.1 %	
Other (charges) gains, net						
Employee termination benefits	(11)	(53)	42	(53)	(7)	(46)
Asset impairments	(2)	(126)	124	(126)	—	(126)
Other plant/office closures	—	—	—	—	2	(2)
Singapore contract termination	—	(174)	174	(174)	—	(174)
Commercial disputes	2	2	—	2	11	(9)
Other	—	—	—	—	9	(9)
Total Other (charges) gains, net	(11)	(351)	340	(351)	15	(366)

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[1] Defined as Operating profit (loss) divided by Net sales.

	As of December 31, 2016	2015
	(In $ millions)	
Balance Sheet Data		
Cash and cash equivalents	638	967
Short-term borrowings and current installments of long-term debt - third party and affiliates	118	513
Long-term debt, net of unamortized deferred financing costs	2,890	2,468
Total debt	3,008	2,981

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Factors Affecting Business Segment Net Sales

The percentage increase (decrease) in net sales attributable to each of the factors indicated for each of our business segments is as follows:

Year Ended December 31, 2016 Compared to Year Ended December 31, 2015

	Volume	Price	Currency	Other	Total
	(In percentages)				
Advanced Engineered Materials	11	(2)	—	—	9
Consumer Specialties	4	(8)	—	—	(4)
Industrial Specialties	(1)	(8)	(1)	—	(10)
Acetyl Intermediates	(2)	(10)	(1)	2	(11)
Total Company	2	(8)	(1)	2	(5)

Year Ended December 31, 2015 Compared to Year Ended December 31, 2014

	Volume	Price	Currency	Other	Total
	(In percentages)				
Advanced Engineered Materials	(1)	(1)	(7)	—	(9)
Consumer Specialties	(13)	(3)	(1)	—	(17)
Industrial Specialties	—	(4)	(8)	—	(12)
Acetyl Intermediates	(3)	(13)	(6)	—	(22)
Total Company	(4)	(8)	(6)	1	(17)

Pension and Postretirement Benefit Plan Costs

The increase (decrease) in pension and other postretirement plan net periodic benefit cost for each of our business segments is as follows:

Year Ended December 31, 2016 Compared to Year Ended December 31, 2015

	Advanced Engineered Materials	Consumer Specialties	Industrial Specialties	Acetyl Intermediates	Other Activities	Total
	(In $ millions)					
Service cost	—	(1)	(3)	—	(1)	(5)
Interest cost and expected return on plan assets	—	—	—	—	5	5
Amortization of prior service credit	—	—	(3)	—	—	(3)
Special termination benefit	1	—	—	—	—	1
Recognized actuarial (gain) loss[1]	—	—	—	—	(24)	(24)
Curtailment / settlement (gain) loss	—	—	3	—	—	3
Total	1	(1)	(3)	—	(20)	(23)

(1) The decrease in recognized actuarial loss primarily relates to higher asset returns and a gain of $48 million reflecting the incorporation of the RP-2016 mortality tables into the actuarial assumptions for the US pension plans as of December 31, 2016, partially offset by a decrease in the weighted average discount rate used to determine benefit obligations from 4.0% to 3.7%.

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	Advanced Engineered Materials	Consumer Specialties	Industrial Specialties	Acetyl Intermediates	Other Activities	Total
	(In $ millions)					
Cost of sales	—	(1)	1	—	(3)	(3)
SG&A expenses	—	—	(4)	—	(17)	(21)
Research and development expenses	—	—	—	—	(1)	(1)
Other charges (gains), net	1	—	—	—	1	2
Total	1	(1)	(3)	—	(20)	(23)

Year Ended December 31, 2015 Compared to Year Ended December 31, 2014

	Advanced Engineered Materials	Consumer Specialties	Industrial Specialties	Acetyl Intermediates	Other Activities	Total
	(In $ millions)					
Service cost	(1)	—	1	—	1	1
Interest cost and expected return on plan assets	—	—	—	—	(25)	(25)
Amortization of prior service credit[(1)]	29	16	8	16	14	83
Special termination benefit	—	—	1	—	1	2
Recognized actuarial (gain) loss[(2)]	—	—	—	—	(223)	(223)
Curtailment / settlement (gain) loss[(3)]	26	16	3	16	14	75
Total	54	32	13	32	(218)	(87)

(1) Primarily relates to the elimination of eligibility for current and future employees and the elimination of benefits for certain participants under a US postretirement health care plan in 2014.

(2) The decrease in recognized actuarial loss primarily relates to an increase in the weighted average discount rate used to determine benefit obligations from 3.7% to 4.0% and a gain of $62 million reflecting the incorporation of the RP-2015 mortality tables into the actuarial assumptions for the US pension plans as of December 31, 2015, partially offset by lower asset returns.

(3) Primarily relates to actions taken in 2014 to offer a limited-time, voluntary buyout to certain participants of our US qualified defined benefit pension plan with a vested benefit.

	Advanced Engineered Materials	Consumer Specialties	Industrial Specialties	Acetyl Intermediates	Other Activities	Total
	(In $ millions)					
Cost of sales	31	26	7	16	(20)	60
SG&A expenses	16	4	3	8	(195)	(164)
Research and development expenses	7	2	2	8	(3)	16
Other charges (gains), net	—	—	1	—	—	1
Total	54	32	13	32	(218)	(87)

See Note 15 - Benefit Obligations in the accompanying consolidated financial statements for further information.

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Consolidated Results

Year Ended December 31, 2016 Compared to Year Ended December 31, 2015

Net sales decreased $285 million, or 5.0%, for the year ended December 31, 2016 compared to the same period in 2015 primarily due to:

- lower pricing, primarily for acetic acid and VAM in our Acetyl Intermediates segment and acetate tow in our Consumer Specialties segment; and
- lower pricing in our Industrial Specialties segment;

partially offset by:

- higher volume, primarily for POM, in our Advanced Engineered Materials segment; and
- higher acetate tow volume in our Consumer Specialties segment.

Selling, general and administrative expenses decreased $90 million, or 17.8%, for the year ended December 31, 2016 compared to the same period in 2015 primarily due to:

- lower functional spending and incentive compensation costs of $31 million;
- productivity initiatives across all of our business segments; and
- a decrease in pension and other postretirement plan net periodic benefit cost of $21 million.

Operating profit increased $567 million, or 173.9%, for the year ended December 31, 2016 compared to the same period in 2015 primarily due to:

- lower raw material costs across all of our business segments;
- a favorable impact from Other (charges) gains, net of $340 million. In December 2015, we terminated our existing agreement with a raw materials supplier in Singapore. In connection with the contract termination, we recorded $174 million to Other (charges) gains, net, which did not recur in the current year. We also recorded long-lived asset impairment losses of $123 million to fully write-off certain ethanol related assets at our acetyl facility in Nanjing, China during the three months ended December 31, 2015, which did not recur in the current year. See Note 18 - Other (Charges) Gains, Net in the accompanying consolidated financial statements for further information; and
- a decrease in SG&A expenses;

partially offset by:

- lower Net sales.

Equity in net earnings (loss) of affiliates decreased $26 million for the year ended December 31, 2016 compared to the same period in 2015 primarily due to:

- a decrease in equity in net earnings (loss) of affiliates of $50 million from our Ibn Sina strategic affiliate as a result of lower pricing for methyl tertiary-butyl ether ("MTBE") and methanol.

Our effective income tax rate for the year ended December 31, 2016 was 12% compared to 41% for the year ended 2015. The lower effective income tax rate is primarily attributable to the release of valuation allowances in foreign jurisdictions due to internal restructuring in Canada, improved operating results in China and settlement of uncertain tax positions and technical clarifications in Germany and the US. In February 2015, we established a centralized European headquarters for the purpose of improving the operational efficiencies and profitability of our European operations and certain global product lines. These activities directly impacted our mix of earnings and product flows and resulted in net favorable tax rate impacts in the jurisdictions in which we operate.

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Our effective income tax rate is affected by recurring items, such as tax rates in foreign jurisdictions and the relative amounts and mix of income and loss in those jurisdictions to which they relate, as well as discrete items and non-deductible expenses that may occur in any given year, but are not consistent from year to year. See Note 19 - Income Taxes in the accompanying consolidated financial statements for further information.

Assuming no material changes to tax rules and regulations or cash repatriation plans, we expect continued realization of operational savings in connection with the establishment of our centralized European headquarters, which will directly impact the mix of our earnings and may result in favorable or unfavorable income tax impacts in subsequent years. Our effective tax rate will vary based on the jurisdictions in which income is actually generated and remains subject to potential volatility from changing tax legislation in the US and other tax jurisdictions. We continue to assess our business model and its impact in various jurisdictions. On October 16, 2016, the US Department of the Treasury released final and temporary Section 385 regulations regarding corporate tax inversions and related earnings stripping. These final and temporary regulations, which are to be effective 90 days after finalization, include provisions that may be interpreted to impact otherwise common tax structures including intercompany financing and obligations. We have evaluated the tax consequences of the new regulations to our cross-border treasury management practices and intercompany financing structure and do not expect any material impact.

Year Ended December 31, 2015 Compared to Year Ended December 31, 2014

Net sales decreased $1.1 billion, or 16.6%, for the year ended December 31, 2015 compared to the same period in 2014 primarily due to:

- unfavorable currency impacts across all our business segments resulting from a strong US dollar relative to the Euro;
- lower pricing and volume in our Acetyl Intermediates segment for VAM and acetic acid; and
- lower acetate tow volume and pricing in our Consumer Specialties segment driven by customer destocking and reduced industry utilization, respectively.

Selling, general and administrative expenses decreased $252 million, or 33.2%, for the year ended December 31, 2015 compared to the same period in 2014 primarily due to:

- a decrease in pension and other postretirement plan net periodic benefit cost of $164 million;
- cost savings of $50 million related to productivity initiatives across all of our business segments; and
- lower functional spending and incentive compensation costs of $41 million.

Operating profit decreased $432 million, or 57.0%, for the year ended December 31, 2015 compared to the same period in 2014 primarily due to:

- a decrease in Net sales; and
- an unfavorable impact from Other (charges) gains, net. In December 2015, we terminated our existing agreement with a raw materials supplier in Singapore. In connection with the contract termination, we recorded $174 million to Other (charges) gains, net. We also recorded long-lived asset impairment losses of $123 million to fully write-off certain ethanol related assets at our acetyl facility in Nanjing, China during the three months ended December 31, 2015;

partially offset by:

- a decrease in SG&A and lower raw material costs across all of our business segments.

Operating margin for the year ended December 31, 2015 decreased to 5.7% from 11.1% in 2014.

Equity in net earnings (loss) of affiliates decreased $65 million for the year ended December 31, 2015 compared to the same period in 2014 primarily due to:

- a $48 million gain resulting from restructuring the debt of a subsidiary of InfraServ GmbH & Co. Hoechst KG during the three months ended June 30, 2014, which did not recur in 2015. Our equity investment in InfraServ GmbH & Co. Hoechst KG is primarily owned by an entity included in our Other Activities segment, while our Consumer Specialties and Acetyl Intermediates segments also each hold an ownership percentage; and

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- a decrease in equity in net earnings (loss) of affiliates of $27 million from our Ibn Sina strategic affiliate as a result of lower pricing for MTBE and methanol.

Our effective income tax rate for the year ended December 31, 2015 was 41% compared to 33% for the year ended 2014. The higher effective income tax rate for the year ended December 31, 2015 was primarily attributable to an increase in the valuation allowance due to an increase in losses in jurisdictions with no tax benefit. The increase in losses primarily relates to a $123 million long-lived asset impairment recorded to fully write-off certain ethanol related assets at our acetyl facility in Nanjing, China and a $174 million charge related to the termination of a raw materials contract with a supplier in Singapore. See Note 18 - Other (Charges) Gains, Net in the accompanying consolidated financial statements for further information. The tax impact of these events was partially offset by decreases in uncertain tax positions of $29 million due to audit closures and technical jurisdictional clarifications.

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Business Segments

Advanced Engineered Materials

	Year Ended December 31, 2016	2015	Change	% Change	Year Ended December 31, 2015	2014	Change	% Change
	(In $ millions, except percentages)							
Net sales	1,444	1,326	118	8.9 %	1,326	1,459	(133)	(9.1)%
Net Sales Variance								
Volume	11 %				(1) %			
Price	(2) %				(1) %			
Currency	— %				(7) %			
Other	— %				— %			
Other (charges) gains, net	(2)	(7)	5	(71.4)%	(7)	(1)	(6)	600.0 %
Operating profit (loss)	350	235	115	48.9 %	235	221	14	6.3 %
Operating margin	24.2 %	17.7 %			17.7 %	15.1 %		
Equity in net earnings (loss) of affiliates	122	150	(28)	(18.7)%	150	161	(11)	(6.8)%
Depreciation and amortization	92	99	(7)	(7.1)%	99	106	(7)	(6.6)%

Year Ended December 31, 2016 Compared to Year Ended December 31, 2015

Net sales increased for the year ended December 31, 2016 compared to the same period in 2015 primarily due to:

- higher volume, primarily for POM in Europe and Asia, driven by new project launches and base business growth;

partially offset by:

- lower pricing in POM due to regional and customer mix.

Operating profit increased for the year ended December 31, 2016 compared to the same period in 2015 primarily due to:

- higher Net sales;
- lower energy and raw material costs, primarily for methanol and polyester; and
- cost savings of $18 million primarily due to productivity initiatives.

Equity in net earnings (loss) of affiliates decreased for the year ended December 31, 2016 compared to the same period in 2015 primarily due to:

- a decrease in equity in net earnings (loss) of affiliates of $50 million from our Ibn Sina strategic affiliate as a result of lower pricing for MTBE and methanol;

partially offset by:

- an increase in equity in net earnings (loss) of affiliates from our Polyplastics Co., Ltd. ("Polyplastics") and Korea Engineering Plastics Co., Ltd. ("KEPCO") strategic affiliates of $15 million and $9 million, respectively, primarily as a result of higher demand.

On December 1, 2016, we acquired 100% of the stock of the Forli, Italy based SO.F.TER. S.p.A. ("SOFTER"), a leading thermoplastic compounder. The acquisition included its comprehensive product portfolio of engineering thermoplastics, including nylon and polypropylene polymers, and thermoplastic elastomers, as well as all of its manufacturing, technology and commercial facilities and customer agreements. The acquisition supports the strategic growth of the engineered materials

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business. See Note 4 - Acquisitions, Dispositions and Plant Closures in the accompanying consolidated financial statements for further information.

Year Ended December 31, 2015 Compared to Year Ended December 31, 2014

Net sales decreased for the year ended December 31, 2015 compared to the same period in 2014 primarily due to:

- an unfavorable currency impact resulting from a strong US dollar relative to the Euro.

Operating profit increased for the year ended December 31, 2015 compared to the same period in 2014 primarily due to:

- lower energy and raw material costs, primarily for ethylene and polypropylene, which more than offset the decrease in Net sales;

partially offset by:

- an increase in net periodic benefit cost of $54 million.

Equity in net earnings (loss) of affiliates decreased for the year ended December 31, 2015 compared to the same period in 2014 primarily due to:

- a decrease in equity in net earnings (loss) of affiliates of $27 million from our Ibn Sina strategic affiliate as a result of lower pricing for MTBE and methanol;

partially offset by:

- an increase in equity in net earnings (loss) of affiliates from our Polyplastics and KEPCO strategic affiliates of $8 million and $6 million, respectively, primarily as a result of lower raw material costs.

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Consumer Specialties

	Year Ended December 31,			%	Year Ended December 31,			%
	2016	2015	Change	Change	2015	2014	Change	Change
	(In $ millions, except percentages)							
Net sales	929	969	(40)	(4.1)%	969	1,160	(191)	(16.5)%
Net Sales Variance								
Volume	4 %				(13)%			
Price	(8) %				(3)%			
Currency	— %				(1)%			
Other	— %				— %			
Other (charges) gains, net	(2)	(25)	23	(92.0)%	(25)	16	(41)	(256.3)%
Operating profit (loss)	302	262	40	15.3 %	262	388	(126)	(32.5)%
Operating margin	32.5 %	27.0%			27.0 %	33.4 %		
Equity in net earnings (loss) of affiliates	3	2	1	50.0 %	2	9	(7)	(77.8)%
Dividend income - cost investments	107	106	1	0.9 %	106	115	(9)	(7.8)%
Depreciation and amortization	45	60	(15)	(25.0)%	60	43	17	39.5 %

Year Ended December 31, 2016 Compared to Year Ended December 31, 2015

Net sales decreased for the year ended December 31, 2016 compared to the same period in 2015 primarily due to:

- lower acetate tow pricing due to lower global industry utilization;

partially offset by:

- higher acetate tow volume, primarily in Europe, due to customer destocking in the first half of the prior year, which did not recur in the current year.

Operating profit increased for the year ended December 31, 2016 compared to the same period in 2015 primarily due to:

- lower raw material costs, including acetic acid and anhydride;
- a favorable impact in Other (charges) gains, net due to employee termination costs of $24 million, which was recorded as a result of a 50% capacity reduction at our acetate tow facility in Lanaken, Belgium in December 2015, which did not recur in 2016. See Note 4 - Acquisitions, Dispositions and Plant Closures in the accompanying consolidated financial statements for further information; and
- cost savings of $25 million primarily due to productivity initiatives in our cellulose derivatives business;

partially offset by:

- lower Net sales.

Depreciation and amortization expense, which is included within Operating profit (loss), decreased during the year ended December 31, 2016 compared to the same period in 2015 as a result of accelerated depreciation expense of $10 million related to a 50% capacity reduction at our acetate tow facility in Lanaken, Belgium in December 2015, which did not recur in 2016. See Note 4 - Acquisitions, Dispositions and Plant Closures in the accompanying consolidated financial statements for further information.

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Year Ended December 31, 2015 Compared to Year Ended December 31, 2014

Net sales decreased for the year ended December 31, 2015 compared to the same period in 2014 primarily due to:

- lower acetate tow volume driven by customer destocking; and
- lower acetate tow pricing driven by reduced industry utilization.

Operating profit decreased for the year ended December 31, 2015 compared to the same period in 2014 primarily due to:

- a decrease in Net sales;
- an unfavorable impact in Other (charges) gains, net due to employee termination costs of $24 million and accelerated depreciation expense of $10 million which were recorded as a result of a 50% capacity reduction at our acetate tow facility in Lanaken, Belgium in December 2015; Other (charges) gains, net was also unfavorably impacted by an arbitration recovery in 2014 against a former utility operator at our cellulose derivatives manufacturing facility in Narrows, Virginia, which did not recur in 2015; and
- an increase in net periodic benefit cost of $32 million;

partially offset by:

- lower wood pulp and energy costs.

Equity in net earnings (loss) of affiliates decreased for the year ended December 31, 2015 compared to the same period in 2014 primarily due to:

- a $6 million gain resulting from restructuring the debt of a subsidiary of InfraServ GmbH & Co. Hoechst KG during the three months ended June 30, 2014, which did not recur in 2015.

Dividend income from cost investments decreased for the year ended December 31, 2015 compared to the same period in 2014 primarily due to:

- lower earnings from our cellulose derivatives ventures primarily due to the expiration of a favorable tax holiday.

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Industrial Specialties

	Year Ended December 31,			%	Year Ended December 31,			%
	2016	2015	Change	Change	2015	2014	Change	Change
	(In $ millions, except percentages)							
Net sales	979	1,082	(103)	(9.5)%	1,082	1,224	(142)	(11.6)%
Net Sales Variance								
Volume	(1) %				— %			
Price	(8) %				(4) %			
Currency	(1) %				(8) %			
Other	— %				— %			
Other (charges) gains, net	(3)	(10)	7	(70.0)%	(10)	(1)	(9)	900.0 %
Operating profit (loss)	105	72	33	45.8 %	72	76	(4)	(5.3)%
Operating margin	10.7 %	6.7 %			6.7 %	6.2 %		
Depreciation and amortization	34	64	(30)	(46.9)%	64	50	14	28.0 %

Year Ended December 31, 2016 Compared to Year Ended December 31, 2015

Net sales decreased for the year ended December 31, 2016 compared to the same period in 2015 primarily due to:

- lower pricing in our emulsion polymers and EVA polymers businesses due to lower raw material costs globally for VAM.

Operating profit increased for the year ended December 31, 2016 compared to the same period in 2015 primarily due to:

- lower energy and raw material costs, primarily VAM; and
- cost savings of $28 million, primarily due to productivity initiatives in our emulsion polymers business; and
- a favorable impact from Other (charges) gains, net. During the year ended December 31, 2015, we recorded $6 million of employee termination benefits related to the closure of our vinyl acetate ethylene ("VAE") emulsions facility in Tarragona, Spain, which did not recur in the current year. See Note 4 - Acquisitions, Dispositions and Plant Closures in the accompanying consolidated financial statements for further information.

partially offset by:

- lower Net sales.

Depreciation and amortization expense, which is included within Operating profit (loss), decreased during the year ended December 31, 2016 compared to the same period in 2015 as a result of accelerated depreciation expense of $19 million related to our VAE emulsions unit in Meredosia, Illinois and $9 million related to our VAE and conventional emulsions units in Tarragona, Spain, which did not recur in the current year. See Note 4 - Acquisitions, Dispositions and Plant Closures in the accompanying consolidated financial statements for further information.

Year Ended December 31, 2015 Compared to Year Ended December 31, 2014

Net sales decreased for the year ended December 31, 2015 compared to the same period in 2014 primarily due to:

- an unfavorable currency impact on our emulsion polymers business resulting from a strong US dollar relative to the Euro; and
- lower pricing in our emulsion polymers business due to lower raw material costs for VAM, primarily in Europe.

Operating profit decreased for the year ended December 31, 2015 compared to the same period in 2014 primarily due to:

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- a decrease in Net sales, as well as an increase in site closure costs of $22 million and $16 million primarily related to our VAE emulsions unit in Meredosia, Illinois and in Tarragona, Spain, respectively; and
- an increase in net periodic benefit cost of $13 million;

partially offset by:

- lower raw material costs for VAM, primarily in Europe.

Acetyl Intermediates

	Year Ended December 31,			%	Year Ended December 31,			%
	2016	2015	Change	Change	2015	2014	Change	Change
	(In $ millions, except percentages)							
Net sales	2,441	2,744	(303)	(11.0)%	2,744	3,493	(749)	(21.4)%
Net Sales Variance								
Volume	(2) %				(3) %			
Price	(10) %				(13) %			
Currency	(1) %				(6) %			
Other	2 %				— %			
Other (charges) gains, net	(3)	(300)	297	(99.0)%	(300)	(3)	(297)	9,900 %
Operating profit (loss)	340	(3)	343	(11,433)%	(3)	558	(561)	(100.5)%
Operating margin	13.9 %	(0.1) %			(0.1) %	16.0 %		
Equity in net earnings (loss) of affiliates	6	6	—	— %	6	20	(14)	(70.0)%
Depreciation and amortization	107	123	(16)	(13.0)%	123	81	42	51.9 %

Year Ended December 31, 2016 Compared to Year Ended December 31, 2015

Net sales decreased for the year ended December 31, 2016 compared to the same period in 2015 primarily due to:

- lower pricing due to lower global industry utilization and a decline in global feedstock costs, such as methanol, which negatively impacted pricing for most of our products. The impact on acetic acid, VAM and acetate esters represents approximately three-fourths of the pricing decrease; and
- lower volume for VAM, which represents all of the decrease in volume, primarily due to the expiration of a significant VAM contract.

Operating profit increased for the year ended December 31, 2016 compared to the same period in 2015 primarily due to:

- a favorable impact from Other (charges) gains, net. In December 2015, we terminated our existing agreement with a raw materials supplier in Singapore. In connection with the contract termination, we recorded $174 million to Other (charges) gains, net, which did not recur in the current year. We also recorded long-lived asset impairment losses of $123 million to fully write-off certain ethanol related assets at our acetyl facility in Nanjing, China during the three months ended December 31, 2015, which did not recur in the current year. See Note 18 - Other (Charges) Gains, Net in the accompanying consolidated financial statements for further information;
- lower energy and raw material costs, primarily for carbon monoxide and methanol; and
- cost savings of $29 million, primarily due to productivity initiatives;

partially offset by:

- lower Net sales.

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Depreciation and amortization expense, which is included within Operating profit (loss), decreased during the year ended December 31, 2016 compared to the same period in 2015 as a result of $39 million in accelerated depreciation expense recorded in the prior year related to property, plant and equipment no longer in use at our ethanol technology unit in Clear Lake, Texas, which did not recur in the current year, partially offset by the impact from the startup of production at the Fairway facility in October 2015. See Note 4 - Acquisitions, Dispositions and Plant Closures in the accompanying consolidated financial statements for further information.

Year Ended December 31, 2015 Compared to Year Ended December 31, 2014

Net sales decreased for the year ended December 31, 2015 compared to the same period in 2014 primarily due to:

- lower pricing and volume for VAM, primarily due to industry outages in the prior year that did not recur in 2015. VAM represents approximately one-half of the decrease in pricing and volume;
- an unfavorable currency impact resulting from a strong US dollar relative to the Euro; and
- lower pricing and volume for acetic acid, which represents approximately one-third of the pricing and volume decrease, primarily due to lower demand in Asia.

Operating profit decreased for the year ended December 31, 2015 compared to the same period in 2014 primarily due to:

- a decrease in Net sales, as well as an unfavorable impact from Other (charges) gains, net. In December 2015, we terminated our existing agreement with a raw materials supplier in Singapore. In connection with the contract termination, we recorded $174 million to Other (charges) gains, net. We also recorded long-lived asset impairment losses of $123 million to fully write-off certain ethanol related assets at our acetyl facility in Nanjing, China during the three months ended December 31, 2015;
- an increase in depreciation and amortization expense as a result of $39 million in accelerated depreciation expense related to property, plant and equipment no longer in use at our ethanol technology development unit in Clear Lake, Texas, beginning in June 2015;
- an increase in net periodic benefit cost of $32 million; and
- costs of $10 million incurred related to the start-up of our Fairway joint venture;

partially offset by:

- lower energy and raw material costs, primarily for ethylene, methanol and carbon monoxide, with ethylene making up approximately one-half and the other raw materials each making up approximately one-quarter of the decrease in raw materials.

Equity in net earnings (loss) of affiliates decreased for the year ended December 31, 2015 compared to the same period in 2014 primarily due to:

- a $13 million gain resulting from restructuring the debt of a subsidiary of InfraServ GmbH & Co. Hoechst KG during the three months ended June 30, 2014, which did not recur in 2015.

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Other Activities

	Year Ended December 31,			%	Year Ended December 31,			%
	2016	2015	Change	Change	2015	2014	Change	Change
	(In $ millions)							
Other (charges) gains, net	(1)	(9)	8	(88.9)%	(9)	4	(13)	(325.0)%
Operating profit (loss)	(205)	(240)	35	(14.6)%	(240)	(485)	245	(50.5)%
Equity in net earnings (loss) of affiliates	24	23	1	4.3 %	23	56	(33)	(58.9)%
Dividend income - cost investments	1	1	—	— %	1	1	—	— %
Depreciation and amortization	12	11	1	9.1 %	11	12	(1)	(8.3)%

Year Ended December 31, 2016 Compared to Year Ended December 31, 2015

Operating loss decreased for the year ended December 31, 2016 compared to the same period in 2015 primarily due to:

- lower functional and project spending of $21 million; and
- a decrease in net periodic benefit cost of $20 million, primarily recorded to SG&A expenses.

Year Ended December 31, 2015 Compared to Year Ended December 31, 2014

Operating loss decreased for the year ended December 31, 2015 compared to the same period in 2014 primarily due to:

- a decrease in net periodic benefit cost of $218 million, primarily recorded to SG&A expenses; and
- lower functional spending and incentive compensation costs of $41 million;

partially offset by:

- higher project spending related to our European headquarters.

Equity in net earnings (loss) of affiliates decreased for the year ended December 31, 2015 compared to the same period in 2014 primarily due to:

- a $29 million gain resulting from restructuring the debt of a subsidiary of InfraServ GmbH & Co. Hoechst KG during the three months ended June 30, 2014, which did not recur in 2015.

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Liquidity and Capital Resources

Our primary source of liquidity is cash generated from operations, available cash and cash equivalents and dividends from our portfolio of strategic investments. In addition, as of December 31, 2016 we have $1.0 billion available for borrowing under our senior unsecured revolving credit facility and $52 million available under our accounts receivable securitization facility to assist, if required, in meeting our working capital needs and other contractual obligations.

While our contractual obligations, commitments and debt service requirements over the next several years are significant, we continue to believe we will have available resources to meet our liquidity requirements, including debt service, in 2017. If our cash flow from operations is insufficient to fund our debt service and other obligations, we may be required to use other means available to us such as increasing our borrowings, reducing or delaying capital expenditures, seeking additional capital or seeking to restructure or refinance our indebtedness. There can be no assurance, however, that we will continue to generate cash flows at or above current levels.

Total cash outflows for capital expenditures are expected to be in the range of $250 million to $300 million in 2017 primarily due to additional investments in growth opportunities in our Advanced Engineered Materials and Acetyl Intermediates segments.

On a stand-alone basis, Celanese and its immediate 100% owned subsidiary, Celanese US, have no material assets other than the stock of their subsidiaries and no independent external operations of their own. Accordingly, they generally depend on the cash flow of their subsidiaries and their ability to pay dividends and make other distributions to Celanese and Celanese US in order to meet their obligations, including their obligations under senior credit facilities and senior notes and to pay dividends on our Series A common stock, par value $0.0001 per share ("Common Stock").

Cash Flows

Cash and cash equivalents as of December 31, 2016 were $638 million, a decrease of $329 million from December 31, 2015. As of December 31, 2016, $552 million of the $638 million of cash and cash equivalents was held by our foreign subsidiaries. If these funds are needed for our operations in the US, we will access such funds in a tax efficient manner to satisfy cash flow needs. Currently, there are no contemplated cash distributions that will result in incremental US taxes payable in excess of applicable foreign tax credits related to such undistributed earnings. As a result, we have not recorded any deferred income taxes on the portion of undistributed foreign earnings determined not to be permanently reinvested in foreign operations.

- Net Cash Provided by (Used in) Operating Activities

Year Ended December 31, 2016 Compared to Year Ended December 31, 2015

Net cash provided by operating activities increased $31 million to $893 million for the year ended December 31, 2016 compared to $862 million for the same period in 2015. Net cash provided by operations for the year ended December 31, 2016 increased primarily due to:

- an increase in net earnings;

largely offset by:

- an increase in pension plan and other postretirement benefit plan contributions of $287 million;
- unfavorable trade working capital of $56 million primarily due to an increase in accounts receivable; and
- lower dividends from our equity investments in affiliates of $45 million.

Year Ended December 31, 2015 Compared to Year Ended December 31, 2014

Net cash provided by operating activities decreased $100 million to $862 million for the year ended December 31, 2015 compared to $962 million for the same period in 2014. Net cash provided by operations for the year ended December 31, 2015 decreased primarily due to:

- a decrease in net earnings;

partially offset by:

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- a decrease in pension and postretirement benefit plan contributions of $160 million.
- Net Cash Provided by (Used in) Investing Activities

Year Ended December 31, 2016 Compared to Year Ended December 31, 2015

Net cash used in investing activities decreased $119 million to $439 million for the year ended December 31, 2016 compared to $558 million for the same period in 2015, primarily due to:

- a decrease in capital expenditures of $288 million relating to Fairway, which was completed in 2015;

partially offset by:

- an increase in cash outflows of $178 million related to the acquisition of SOFTER in December 2016.

Year Ended December 31, 2015 Compared to Year Ended December 31, 2014

Net cash used in investing activities decreased $147 million to $558 million for the year ended December 31, 2015 compared to $705 million for the same period in 2014, primarily due to:

- capital expenditures relating to Fairway of $288 million, $136 million lower than in the same period in 2014.
- Net Cash Provided by (Used in) Financing Activities

Year Ended December 31, 2016 Compared to Year Ended December 31, 2015

Net cash used in financing activities increased $693 million to $759 million for the year ended December 31, 2016 compared to $66 million for the year ended December 31, 2015. The increase in cash used in financing activities is primarily due to:

- an increase of $350 million in net short-term borrowings under our previous senior secured revolving credit facility for the year ended December 31, 2015, which were repaid in full during the year ended December 31, 2016, as discussed below;
- a net decrease of $238 million in contributions received from, and distributions to, Mitsui; and
- an increase of $80 million in share repurchases of our Common Stock;

partially offset by:

- an increase in net proceeds from long-term debt of $406 million primarily as a result of issuing €750 million in principal amount of 1.125% senior unsecured notes due September 26, 2023 ("1.125% Notes"), as discussed below.

In January 2017, we repaid $69 million of the $70 million SOFTER bank loans outstanding at December 31, 2016 with cash on hand.

Year Ended December 31, 2015 Compared to Year Ended December 31, 2014

Net cash used in financing activities decreased $349 million to $66 million for the year ended December 31, 2015 compared to $415 million for the year ended December 31, 2014. The decrease in cash used in financing activities is primarily due to:

- an increase in net borrowings on short-term debt of $385 million, primarily as a result of borrowing under our revolving credit facility to fund repurchases of our Common Stock; and
- a decrease in net repayments of long-term debt of $215 million as a result of redeeming our $600 million 6.625% senior unsecured notes due 2018 ("6.625% Notes") during the year ended December 31, 2014, which did not recur in 2015;

partially offset by:

- an increase of $170 million in share repurchases of our Common Stock;

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- a decrease of $50 million in contributions received from Mitsui in exchange for ownership in Fairway; and
- higher Common Stock dividends of $30 million due to a 39% and 20% increase in quarterly cash dividends beginning May 2014 and May 2015, respectively.

In addition, exchange rates had unfavorable impacts of $24 million, $51 million and $46 million on cash and cash equivalents for the years ended December 31, 2016, 2015 and 2014, respectively.

Debt and Other Obligations

- Senior Credit Facilities

On July 15, 2016, Celanese, Celanese US and certain subsidiaries entered into a new senior credit agreement ("New Credit Agreement") consisting of a $500 million senior unsecured term loan and a $1.0 billion senior unsecured revolving credit facility (with a letter of credit sublimit), each maturing in 2021. The margin for borrowings under the senior unsecured term loan and the senior unsecured revolving credit facility was 1.5% above LIBOR at our current credit ratings. The New Credit Agreement is guaranteed by Celanese, Celanese US and substantially all of its domestic subsidiaries ("the Subsidiary Guarantors"). The proceeds from the new senior unsecured term loan and $409 million of borrowings under the new senior unsecured revolving credit facility were used to repay our Term C-2 and C-3 loans under our previous senior secured credit facilities. We borrowed $245 million and repaid $595 million under our previous secured revolving credit facility during the year ended December 31, 2016.

- Senior Notes

We have outstanding senior unsecured notes, issued in public offerings registered under the Securities Act of 1933 ("Securities Act"), as amended, as follows (collectively, the "Senior Notes"):

Senior Notes	Issue Date	Principal (In millions)	Interest Rate (In percentages)	Interest Pay Dates		Maturity Date
1.125% Notes	September 2016	€750	1.125	September 26	N/A	September 26, 2023
3.250% Notes	September 2014	€300	3.250	April 15	October 15	October 15, 2019
4.625% Notes	November 2012	$500	4.625	March 15	September 15	November 15, 2022
5.875% Notes	May 2011	$400	5.875	June 15	December 15	June 15, 2021

The Senior Notes were issued by Celanese US and are guaranteed on a senior unsecured basis by Celanese and the Subsidiary Guarantors. Celanese US may redeem some or all of each of the Senior Notes, prior to their respective maturity dates, at a redemption price of 100% of the principal amount, plus a "make-whole" premium as specified in the applicable indenture, plus accrued and unpaid interest, if any, to the redemption date.

On September 26, 2016, Celanese US completed the offering of the 1.125% Notes in a public offering registered under the Securities Act. The 1.125% Notes were issued at a discount to par at a price of 99.713%. Net proceeds from the sale of the 1.125% Notes were used to repay $411 million of outstanding borrowings under the new senior unsecured revolving credit facility and for general corporate purposes.

In October 2014, Celanese US redeemed its 6.625% Notes at a redemption price of 103.313% of the face amount for a total principal and premium payment of $620 million plus accrued interest of $20 million. Proceeds from the issuance of the 3.250% Notes were used to partially fund the redemption of the 6.625% Notes, as well as cash on hand.

- Pollution Control and Industrial Revenue Bonds

On March 3, 2016, the State of Wisconsin Public Finance Authority completed an offering of pollution control and industrial revenue bonds, the proceeds of which were loaned to Celanese US and used to repay the pollution control and industrial revenue bonds previously issued for our benefit.

- Accounts Receivable Securitization Facility

On July 8, 2016, certain of our subsidiaries entered into an amendment of our accounts receivable securitization facility, extending its maturity to July 2019 and decreasing the available amount to $120 million. We repaid $55 million during the year ended December 31, 2016.

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Our material financing arrangements contain customary covenants, including the maintenance of certain financial ratios, events of default and change of control provisions. Failure to comply with these covenants, or the occurrence of any other event of default, could result in acceleration of the borrowings and other financial obligations. We are in compliance with all of the covenants related to our debt agreements as of December 31, 2016.

See Note 14 - Debt in the accompanying consolidated financial statements for further information.

Share Capital

Our Board of Directors follows a policy of declaring, subject to legally available funds, a quarterly cash dividend on each share of our Common Stock unless the Board of Directors, in its sole discretion, determines otherwise. The amount available to us to pay cash dividends is not currently restricted by our existing senior credit facility or our indentures governing our senior unsecured notes.

On February 9, 2017, we declared a quarterly cash dividend of $0.36 per share on our Common Stock amounting to $51 million. The cash dividend is for the period from November 1, 2016 to January 31, 2017 and will be paid on March 3, 2017 to holders of record as of February 21, 2017.

Our Board of Directors has authorized the aggregate repurchase of $2.4 billion of our Common Stock since February 2008. These authorizations give management discretion in determining the timing and conditions under which shares may be repurchased. This repurchase program does not have an expiration date. During the year ended December 31, 2016, we spent $500 million on repurchased shares of our Common Stock. As of December 31, 2016, we had $531 million remaining under authorizations by our Board of Directors.

See Note 17 - Stockholders' Equity in the accompanying consolidated financial statements for further information.

Contractual Debt and Cash Obligations

The following table sets forth our fixed contractual debt and cash obligations as of December 31, 2016.

	Payments due by period				
	Total	Less Than 1 Year	Years 2 & 3	Years 4 & 5	After 5 Years
	(In $ millions)				
Fixed Contractual Debt Obligations					
Senior notes	2,004	—	316	400	1,288
Senior unsecured term loan	500	6	81	413	—
Interest payments on debt and other obligations	659 (1)	113	213	158	175
Capital lease obligations	217	21	45	58	93
Other debt	308 (2)	91	27	20	170
Total	3,688	231	682	1,049	1,726
Operating leases	395	57	101	71	166
Uncertain tax positions, including interest and penalties	131	—	—	—	131 (3)
Unconditional purchase obligations	2,446 (4)	492	818	447	689
Pension and other postretirement funding obligations	461	46	93	91	231
Environmental and asset retirement obligations	99	23	32	12	32
Total	7,220	849	1,726	1,670	2,975

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(1) Future interest expense is calculated using the rate in effect on December 31, 2016.

(2) Other debt is primarily made up of fixed rate pollution control and industrial revenue bonds, short-term borrowings from affiliated companies, our revolving credit facility, our accounts receivable securitization facility and other bank obligations.

(3) Due to uncertainties in the timing of the effective settlement of tax positions with the respective taxing authorities, we are unable to determine the timing of payments related to our uncertain tax obligations, including interest and penalties. These amounts are therefore reflected in "After 5 Years".

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(4) Unconditional purchase obligations primarily represent the take-or-pay provisions included in certain long-term purchase agreements. We do not expect to incur material losses under these arrangements. These amounts also include other purchase obligations such as maintenance and service agreements, energy and utility agreements, consulting contracts, software agreements and other miscellaneous agreements and contracts, obtained via a survey of Celanese.

Contractual Guarantees and Commitments

As of December 31, 2016, we have standby letters of credit of $52 million and bank guarantees of $10 million outstanding, which are irrevocable obligations of an issuing bank that ensure payment to third parties in the event that certain subsidiaries fail to perform in accordance with specified contractual obligations. The likelihood is remote that material payments will be required under these agreements.

See Note 14 - Debt in the accompanying consolidated financial statements for a description of the guarantees under our Senior Notes and New Credit Agreement.

See Note 24 - Commitments and Contingencies in the accompanying consolidated financial statements for a discussion of commitments and contingencies related to legal and regulatory proceedings.

Off-Balance Sheet Arrangements

We have not entered into any material off-balance sheet arrangements.

Market Risks

See Item 7A. Quantitative and Qualitative Disclosure about Market Risk for further information.

Critical Accounting Policies and Estimates

Our consolidated financial statements are based on the selection and application of significant accounting policies. The preparation of consolidated financial statements in conformity with US GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities, disclosure of contingent assets and liabilities at the date of the consolidated financial statements and the reported amounts of net sales, expenses and allocated charges during the reporting period. Actual results could differ from those estimates. However, we are not currently aware of any reasonably likely events or circumstances that would result in materially different results.

We believe the following accounting policies and estimates are critical to understanding the financial reporting risks present in the current economic environment. These matters, and the judgments and uncertainties affecting them, are also essential to understanding our reported and future operating results. See Note 2 - Summary of Accounting Policies in the accompanying consolidated financial statements for further information.

- Recoverability of Long-Lived Assets

Recoverability of Goodwill and Indefinite-Lived Assets

We assess goodwill for impairment at the reporting unit level. Our reporting units are either our operating business segments or one level below our operating business segments for which discrete financial information is available and for which operating results are regularly reviewed by business segment management and the chief operating decision maker. Our operating business segments have been designated as our reporting units and include our engineered materials, cellulose derivatives, food ingredients, emulsion polymers, EVA polymers and intermediate chemistry businesses. We assess the recoverability of the carrying amount of our goodwill and other indefinite-lived intangible assets annually during the third quarter of our fiscal year using June 30 balances or whenever events or changes in circumstances indicate that the carrying amount of the asset may not be fully recoverable.

When assessing the recoverability of goodwill and other indefinite-lived intangible assets, we may first assess qualitative factors in determining whether it is more likely than not that the fair value of a reporting unit or other indefinite-lived intangible asset is less than its carrying amount. After assessing qualitative factors, if we determine that it is not more likely than not that the fair value of a reporting unit or other indefinite-lived intangible asset is less than its carrying amount, then performing a quantitative assessment is not required. If an initial qualitative assessment indicates that it is more likely than not the carrying amount exceeds the fair value of a reporting unit or other indefinite-lived intangible asset, a quantitative analysis will be performed. We may also elect to bypass the qualitative assessment and proceed directly to a quantitative analysis depending on the facts and circumstances.

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In performing a quantitative analysis, recoverability of goodwill for each reporting unit is measured using a discounted cash flow model incorporating discount rates commensurate with the risks involved. Use of a discounted cash flow model is common practice in assessing impairment in the absence of available transactional market evidence to determine the fair value. The key assumptions used in the discounted cash flow valuation model include discount rates, growth rates, tax rates, cash flow projections and terminal value rates. Discount rates, growth rates and cash flow projections are the most sensitive and susceptible to change as they require significant management judgment. We may engage third-party valuation consultants to assist with this process. The valuation consultants assess fair value by equally weighting a combination of two market approaches (market multiple analysis and comparable transaction analysis) and the discounted cash flow approach. Discount rates are determined by using a weighted average cost of capital ("WACC"). The WACC considers market and industry data as well as company-specific risk factors for each reporting unit in determining the appropriate discount rate to be used. The discount rate utilized for each reporting unit is indicative of the return an investor would expect to receive for investing in such a business. Operational management, considering industry and company-specific historical and projected data, develops growth rates and cash flow projections for each reporting unit. Terminal value rate determination follows common methodology of capturing the present value of perpetual cash flow estimates beyond the last projected period assuming a constant WACC and low long-term growth rates. If the calculated fair value is less than the current carrying amount, impairment of the reporting unit may exist. If the recoverability test indicates potential impairment, we calculate an implied fair value of goodwill for the reporting unit. The implied fair value of goodwill is determined in a manner similar to how goodwill is calculated in a business combination. If the implied fair value of goodwill exceeds the carrying amount of goodwill assigned to the reporting unit, there is no impairment. If the carrying amount of goodwill assigned to a reporting unit exceeds the implied fair value of the goodwill, an impairment loss is recorded to write down the carrying amount. An impairment loss cannot exceed the carrying amount of goodwill assigned to a reporting unit but may indicate certain long-lived and amortizable intangible assets associated with the reporting unit may require additional impairment testing.

Management tests other indefinite-lived intangible assets quantitatively utilizing the relief from royalty method under the income approach to determine the estimated fair value for each indefinite-lived intangible asset. The relief from royalty method estimates our theoretical royalty savings from ownership of the intangible asset. Key assumptions used in this model include discount rates, royalty rates, growth rates, tax rates, sales projections and terminal value rates. Discount rates, royalty rates, growth rates and sales projections are the assumptions most sensitive and susceptible to change as they require significant management judgment. Discount rates used are similar to the rates estimated by the WACC considering any differences in company-specific risk factors. Royalty rates are established by management and are periodically substantiated by third-party valuation consultants. Operational management, considering industry and company-specific historical and projected data, develops growth rates and sales projections associated with each indefinite-lived intangible asset. Terminal value rate determination follows common methodology of capturing the present value of perpetual sales projections beyond the last projected period assuming a constant WACC and low long-term growth rates.

See Note 11 - Goodwill and Intangible Assets, Net in the accompanying consolidated financial statements for further information.

Recoverability of Long-Lived and Amortizable Intangible Assets

We assess the recoverability of long-lived and amortizable intangible assets whenever events or circumstances indicate that the carrying amount of the asset may not be recoverable. Examples of a change in events or circumstances include, but are not limited to, a decrease in the market price of the asset, a history of cash flow losses related to the use of the asset or a significant adverse change in the extent or manner in which an asset is being used. To assess the recoverability of long-lived and amortizable intangible assets we compare the carrying amount of the asset or asset group to the future net undiscounted cash flows expected to be generated by the asset or asset group. Long-lived and amortizable intangible assets are tested for recognition and measurement of an impairment loss at the lowest level for which identifiable cash flows are largely independent of the cash flows of other assets and liabilities. If such assets are considered impaired, the impairment recognized is measured as the amount by which the carrying amount of the asset exceeds the fair value of the asset.

The development of future net undiscounted cash flow projections requires management projections related to sales and profitability trends and the remaining useful life of the asset. Projections of sales and profitability trends are the assumptions most sensitive and susceptible to change as they require significant management judgment. These projections are consistent with projections we use to manage our operations internally. When impairment is indicated, a discounted cash flow valuation model similar to that used to value goodwill at the reporting unit level, incorporating discount rates commensurate with risks associated with each asset, is used to determine the fair value of the asset to measure potential impairment. We believe the assumptions used are reflective of what a market participant would have used in calculating fair value.

See Note 10 - Property, Plant and Equipment, Net and Note 11 - Goodwill and Intangible Assets, Net in the accompanying consolidated financial statements for further information.

Valuation methodologies utilized to evaluate goodwill and indefinite-lived intangible, amortizable intangible and long-lived assets for impairment were consistent with prior periods. We periodically engage third-party valuation consultants to assist us with this process. Specific assumptions discussed above are updated at the date of each test to consider current industry and company-specific risk factors from the perspective of a market participant. The current business environment is subject to evolving market conditions and requires significant management judgment to interpret the potential impact to our assumptions. To the extent that changes in the current business environment result in adjusted management projections, impairment losses may occur in future periods.

•Income Taxes

We regularly review our deferred tax assets for recoverability and establish a valuation allowance as needed. In forming our judgment regarding the recoverability of deferred tax assets related to deductible temporary differences and tax attribute carryforwards, we give weight to positive and negative evidence based on the extent to which the forms of evidence can be objectively verified. We attach the most weight to historical earnings due to its verifiable nature. Weight is attached to tax planning strategies if the strategies are prudent and feasible and implementable without significant obstacles. Less weight is attached to forecasted future earnings due to its subjective nature, and expected timing of reversal of taxable temporary differences is given little weight unless the reversal of taxable and deductible temporary differences coincide. Valuation allowances are established primarily on net operating loss carryforwards and other deferred tax assets in the US, Luxembourg, Spain, China, Singapore, the United Kingdom, Canada and France. We have appropriately reflected increases and decreases in our valuation allowance based on the overall weight of positive versus negative evidence on a jurisdiction by jurisdiction basis.

The recoverability of deferred tax assets and the recognition and measurement of uncertain tax positions are subject to various assumptions and management judgment. If actual results differ from the estimates made by management in establishing or maintaining valuation allowances against deferred tax assets, the resulting change in the valuation allowance would generally impact earnings or Other comprehensive income depending on the nature of the respective deferred tax asset. In addition, the positions taken with regard to tax contingencies may be subject to audit and review by tax authorities, which may result in future taxes, interest and penalties.

See Note 19 - Income Taxes in the accompanying consolidated financial statements for further information.

•Benefit Obligations

The amounts recognized in the consolidated financial statements related to pension and other postretirement benefits are determined on an actuarial basis. Various assumptions are used in the calculation of the actuarial valuation of the employee benefit plans. These assumptions include the discount rate, compensation levels, expected long-term rates of return on plan assets and trends in health care costs. In addition, actuarial consultants use factors such as withdrawal and mortality rates to estimate the projected benefit obligation. The actuarial assumptions used may differ materially from actual results due to changing market and economic conditions, higher or lower withdrawal rates or longer or shorter life spans of participants. These differences may result in a significant impact to the amount of net periodic benefit cost recorded in future periods.

Pension assumptions are reviewed annually in the fourth quarter of each fiscal year and whenever a plan is required to be remeasured. Assumptions are reviewed on a plan and country-specific basis by third-party actuaries and senior management. Such assumptions are adjusted as appropriate to reflect changes in market rates and outlook.

Beginning in 2016, we elected to change the method used to estimate the service and interest cost components of net periodic benefit cost for our significant defined benefit pension plans and other postretirement benefit plans. Previously, we estimated the service and interest cost components utilizing a single weighted average discount rate derived from the yield curve used to measure the benefit obligation at the beginning of the period. We elected to use a full yield curve approach in the estimation of these components of net periodic benefit cost by applying the specific spot rates along the yield curve used in the determination of the benefit obligation to the relevant projected cash flows. This change improves the correlation between projected benefit cash flows and the corresponding yield curve spot rates and provides a more precise measurement of service and interest costs. This change does not affect the measurement of our total benefit obligations as the change in service and interest cost will be completely offset in the annual actuarial (gain) loss reported. We accounted for this change as a change in estimate and, accordingly, accounted for it prospectively beginning in 2016.

See Note 15 - Benefit Obligations in the accompanying consolidated financial statements for further information.

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The estimated change in pension and postretirement net periodic benefit cost that would occur in 2017 from a change in the indicated assumptions are as follows:

	Change in Rate	Impact on Net Periodic Benefit Cost (In $ millions)
US Pension Benefits		
Decrease in the discount rate	0.50 %	(9)
Decrease in the long-term expected rate of return on plan assets[1]	0.50 %	12
US Postretirement Benefits		
Decrease in the discount rate	0.50 %	—
Increase in the annual health care cost trend rates	1.00 %	—
Non-US Pension Benefits		
Decrease in the discount rate	0.50 %	(1)
Decrease in the long-term expected rate of return on plan assets	0.50 %	2
Non-US Postretirement Benefits		
Decrease in the discount rate	0.50 %	—
Increase in the annual health care cost trend rates	1.00 %	—

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(1) Excludes nonqualified pension plans.

- Accounting for Commitments and Contingencies

We routinely assess the likelihood of any adverse judgments or outcomes to legal and regulatory proceedings, lawsuits, claims, and investigations, incidental to the normal conduct of our past and current business, as well as ranges of probable and reasonably estimable losses. Reasonable estimates involve judgments made by us after considering a broad range of information including: notifications, prior settlements, demands, which have been received from a regulatory authority or private party, estimates performed by independent consultants and outside counsel, available facts, identification of other potentially responsible parties and their ability to contribute, as well as prior experience. A determination of the amount of loss contingency required, if any, is recorded if probable and estimable after careful analysis of each individual matter. The required reserves may change in the future due to new developments in each matter and as additional information becomes available. Due to the inherent subjectivity of assessments and unpredictability of outcomes of legal proceedings, our litigation accruals and estimates of possible loss or range of possible loss may not represent the ultimate loss to us from legal proceedings.

See Note 16 - Environmental and Note 24 - Commitments and Contingencies in the accompanying consolidated financial statements for further information.

Recent Accounting Pronouncements

See Note 3 - Recent Accounting Pronouncements in the accompanying consolidated financial statements for information regarding recent accounting pronouncements.

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Item 7A. Quantitative and Qualitative Disclosures About Market Risk

Market Risks

Our financial market risk consists principally of exposure to currency exchange rates, interest rates and commodity prices. Exchange rate and interest rate risks are managed with a variety of techniques, including use of derivatives. We have in place policies of hedging against changes in currency exchange rates, interest rates and commodity prices as described below.

See Note 2 - Summary of Accounting Policies in the accompanying consolidated financial statements for further information regarding our derivative and hedging instruments accounting policies related to financial market risk.

See Note 22 - Derivative Financial Instruments in the accompanying consolidated financial statements for further information regarding our market risk management and the related impact on our financial position and results of operations.

- Foreign Currency Forwards and Swaps

A portion of our assets, liabilities, net sales and expenses are denominated in currencies other than the US dollar. Fluctuations in the value of these currencies against the US dollar can have a direct and material impact on the business and financial results. For example, a decline in the value of the Euro versus the US dollar results in a decline in the US dollar value of our sales and earnings denominated in Euros due to translation effects. Likewise, an increase in the value of the Euro versus the US dollar would result in an opposite effect. We estimate that a one cent Euro/US dollar change in the exchange rate would impact our earnings by $4 million annually.

Item 8. Financial Statements and Supplementary Data

Our consolidated financial statements and supplementary data are included in Item 15. Exhibits and Financial Statement Schedules of this Annual Report on Form 10-K.

Quarterly Financial Information

For a discussion of material events affecting performance in each quarter, see Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations.

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CELANESE CORPORATION AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF OPERATIONS

	Three Months Ended				
	March 31, 2016	June 30, 2016	September 30, 2016	December 31, 2016	
	(Unaudited)				
	(In $ millions, except per share data)				
Net sales	1,404	1,351	1,323	1,311	
Gross profit	390	338	355	322	
Other (charges) gains, net	(5)	(4)	(3)	1	
Operating profit (loss)	287	243	246	117	(1)
Earnings (loss) from continuing operations before tax	318	275	281	156	
Amounts attributable to Celanese Corporation					
Earnings (loss) from continuing operations	256	221	265	160	
Earnings (loss) from discontinued operations	1	—	(3)	—	
Net earnings (loss)	257	221	262	160	
Net earnings (loss) per share — basic	1.74	1.51	1.82	1.13	
Net earnings (loss) per share — diluted	1.73	1.50	1.81	1.12	

	Three Months Ended				
	March 31, 2015	June 30, 2015	September 30, 2015	December 31, 2015	
	(Unaudited)				
	(In $ millions, except per share data)				
Net sales	1,450	1,477	1,413	1,334	
Gross profit	381	375	303	259	
Other (charges) gains, net	(5)	(10)	(4)	(332)	(2)
Operating profit (loss)	257	188	186	(305)	(1)
Earnings (loss) from continuing operations before tax	306	227	225	(270)	
Amounts attributable to Celanese Corporation					
Earnings (loss) from continuing operations	236	207	161	(298)	
Earnings (loss) from discontinued operations	—	(2)	—	—	
Net earnings (loss)	236	205	161	(298)	
Net earnings (loss) per share — basic	1.54	1.34	1.07	(2.03)	
Net earnings (loss) per share — diluted	1.53	1.33	1.07	(2.03)	

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(1) Includes $103 million and $127 million of net actuarial losses related to defined benefit pension and other postretirement obligations in 2016 and 2015, respectively. See Note 15 - Benefit Obligations in the accompanying consolidated financial statements for further information.

(2) Includes $174 million recorded in connection with terminating our existing agreement with a raw materials supplier in Singapore in December 2015, and $123 million of long-lived asset impairment losses to fully write-off certain ethanol related assets at our acetyl facility in Nanjing, China. See Note 18 - Other (Charges) Gains, Net in the accompanying consolidated financial statements for further information.

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Item 9. Changes in and Disagreements with Accountants on Accounting and Financial Disclosure

None.

Item 9A. Controls and Procedures

Under the supervision and with the participation of our management, including the Chief Executive Officer and Chief Financial Officer, we have evaluated the effectiveness of our disclosure controls and procedures pursuant to Rule 13a-15(b) under the Securities Exchange Act of 1934, as amended, as of the end of the period covered by this Annual Report on Form 10-K. Based on that evaluation, as of December 31, 2016, the Chief Executive Officer and Chief Financial Officer have concluded that our disclosure controls and procedures are effective.

Changes in Internal Control Over Financial Reporting

During the three months ended December 31, 2016, there were no changes in our internal control over financial reporting that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Report of Management on Internal Control Over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting for the Company. Internal control over financial reporting is a process to provide reasonable assurance regarding the reliability of our financial reporting for external purposes in accordance with accounting principles generally accepted in the United States of America. Internal control over financial reporting includes maintaining records that in reasonable detail accurately and fairly reflect our transactions; providing reasonable assurance that transactions are recorded as necessary for preparation of our consolidated financial statements; providing reasonable assurance that receipts and expenditures of company assets are made in accordance with management authorization; and providing reasonable assurance that unauthorized acquisition, use or disposition of company assets that could have a material effect on our consolidated financial statements would be prevented or detected on a timely basis. Because of its inherent limitations, internal control over financial reporting is not intended to provide absolute assurance that a misstatement of our consolidated financial statements would be prevented or detected.

Management conducted an evaluation of the effectiveness of our internal control over financial reporting based on the framework in Internal Control — Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission. Management has elected to exclude the internal control over financial reporting of the recently acquired (Note 4) SO.F.TER. S.p.A. and its subsidiaries ("SOFTER") from its assessment of internal control over financial reporting as of December 31, 2016. The excluded financial statement amounts of SOFTER constituted less than 5.0% of our consolidated Total assets and less than 1.0% of our consolidated Net sales as of and for the year ended December 31, 2016. Based on this evaluation, management concluded that the Company's internal control over financial reporting was effective as of December 31, 2016. The Company's independent registered public accounting firm, KPMG LLP, has issued an audit report on the effectiveness of the Company's internal control over financial reporting. Their report follows.

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Report of Independent Registered Public Accounting Firm
The Board of Directors and Stockholders
Celanese Corporation:

We have audited Celanese Corporation and subsidiaries' (the "Company") internal control over financial reporting as of December 31, 2016, based on criteria established in Internal Control — Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). 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 Report of Management 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 conducted our audit in accordance with the standards of the Public Company Accounting Oversight Board (United States). 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 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.

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 consolidated 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 consolidated 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 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 our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2016, based on criteria established in Internal Control — Integrated Framework (2013) issued by COSO.

The Company acquired SO.F.TER. S.p.A ("SOFTER") during 2016, and management excluded from its assessment of the effectiveness of the Company's internal control over financial reporting as of December 31, 2016, SOFTER's internal control over financial reporting associated with total assets that constituted less than 5.0% of consolidated total assets and total net sales that constituted less than 1.0% of consolidated net sales as of and for the year ended December 31, 2016. Our audit of internal control over financial reporting of the Company also excluded an evaluation of the internal control over financial reporting of SOFTER.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), the consolidated balance sheets of the Company as of December 31, 2016 and 2015, and the related consolidated statements of operations, comprehensive income (loss), equity, and cash flows for each of the years in the three-year period ended December 31, 2016, and our report dated February 10, 2017 expressed an unqualified opinion on those consolidated financial statements.

/s/ KPMG LLP
Dallas, Texas
February 10, 2017

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Item 9B. Other Information

None.

PART III

Item 10. Directors, Executive Officers and Corporate Governance

The information required by this Item 10 is incorporated herein by reference from the subsections of "Governance" captioned "Item 1: Election of Directors," "Director Nominees," "Directors Continuing in Office," "Board and Committee Governance," and the sections "Stock Ownership Information – Section 16(a) Beneficial Ownership Reporting Compliance" and "Questions and Answers – Company Documents, Communications and Stockholder Proposals" of the Company's definitive proxy statement for the 2017 annual meeting of stockholders to be filed with the Securities and Exchange Commission pursuant to Regulation 14A under the Securities Exchange Act of 1934, as amended (the "2017 Proxy Statement"). Information about executive officers of the Company is contained in Part I of this Annual Report.

Codes of Ethics

The Company has adopted a Business Conduct Policy for directors, officers and employees along with a Financial Code of Ethics for its principal executive officer, principal financial officer, principal accounting officer or controller, or persons performing similar functions. These codes are available on the corporate governance portal of the Company's investor relations website at http://www.celanese.com. The Company intends to satisfy the disclosure requirements under Item 5.05 of Form 8-K regarding amendments to and waivers from these codes by posting such information on the same website.

Item 11. Executive Compensation

The information required by this Item 11 is incorporated herein by reference from the section "Governance – Director Compensation" and the subsections of "Executive Compensation" captioned "Compensation Discussion and Analysis," "Compensation Risk Assessment," "Compensation and Management Development Committee Report," "Compensation Committee Interlocks and Insider Participation" and "Compensation Tables" of the 2017 Proxy Statement.

Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters

The information with respect to beneficial ownership required by this Item 12 is incorporated herein by reference from the section captioned "Stock Ownership Information – Principal Stockholders and Beneficial Owners" of the 2017 Proxy Statement.

Equity Compensation Plans

Securities Authorized for Issuance Under Equity Compensation Plans

The following information is provided as of December 31, 2016 with respect to equity compensation plans:

Plan Category	Number of Securities to be Issued upon Exercise of Outstanding Options, Warrants and Rights		Weighted Average Exercise Price of Outstanding Options, Warrants and Rights	Number of Securities Remaining Available for Future Issuance Under Equity Compensation Plans (excluding securities reflected in column (a))	
	(a)		(b)	(c)	
Equity compensation plans approved by security holders	1,798,343	(1)	$ 44.54	19,313,360	(2)
Equity compensation plans not approved by security holders(3)	12,500		$ 36.83	—	

Total	1,810,843	19,313,360

(1) Includes 1,756,558 restricted stock units ("RSUs") granted under the Celanese Corporation 2009 Global Incentive Plan, as amended and restated April 19, 2012 (the "2009 Plan"), including shares that may be issued pursuant to outstanding performance-based RSUs, assuming currently estimated maximum potential performance (except that, for the

performance-based RSUs with a performance period ending December 31, 2016, assuming estimated actual performance); actual shares may vary, depending on actual performance. If the performance-based RSUs included in this total vest at the target performance level (as opposed to the maximum potential performance), the aggregate awards outstanding would be 1,470,518. Also includes 42,115 share equivalents attributable to compensation deferred by non-management directors participating in the Company's 2008 Deferred Compensation Plan (and dividends applied to previous deferrals) and distributable in the form of shares of the Company's Series A common stock, par value $0.0001 per share ("Common Stock") under the 2009 Plan. Upon vesting, a share of the Company's Common Stock is issued for each restricted stock unit. Column (b) does not take these awards into account because they do not have an exercise price.

(2) Includes shares available for future issuance under the Celanese Corporation 2009 Employee Stock Purchase Plan approved by stockholders on April 23, 2009 (the "ESPP"). As of December 31, 2016, an aggregate of 13,884,000 shares of our Common Stock were available for future issuance under the ESPP. As of December 31, 2016, 116,000 shares have been offered for purchase under the ESPP.

(3) The stock options to be issued under plans not approved by stockholders relate to the Celanese Corporation 2004 Stock Incentive Plan (the "2004 Plan"), which is our former broad-based stock incentive plan for executive officers, key employees and directors. No further awards were made pursuant to the 2004 Plan upon stockholder approval of the 2009 Plan in April 2009.

Item 13. Certain Relationships and Related Transactions, and Director Independence

The information required by this Item 13 is incorporated herein by reference from the section captioned "Governance – Director Independence and Related Person Transactions" of the 2017 Proxy Statement.

Item 14. Principal Accounting Fees and Services

The information required by this Item 14 is incorporated herein by reference from the section captioned "Audit Matters – Item 4: Ratification of Independent Registered Public Accounting Firm" of the 2017 Proxy Statement.

PART IV

Item 15. Exhibits and Financial Statement Schedules

1. Financial Statements. The report of our independent registered public accounting firm and our consolidated financial statements are listed below and begin on page 67 of this Annual Report on Form 10-K.

2. Financial Statement Schedules.

The financial statement schedules required by this item, if any, are included as Exhibits to this Annual Report on Form 10-K.

3. Exhibit List.

See Index to Exhibits following our consolidated financial statements contained in this Annual Report on Form 10-K.

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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.

CELANESE CORPORATION

By: /s/ MARK C. ROHR
Name: Mark C. Rohr
Title: Chairman of the Board of Directors and Chief Executive Officer

Date: February 10, 2017

POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints Christopher W. Jensen and Kevin S. Oliver, and each of them, his or her true and lawful attorney-in-fact and agent, each with full power of substitution and resubstitution to sign in his or her name, place and stead, in any and all capacities, to do any and all things and execute any and all instruments that any such attorney-in-fact may deem necessary or advisable under the Securities Exchange Act of 1934 and any rules, regulations and requirements of the US Securities and Exchange Commission in connection with the Annual Report on Form 10-K for the fiscal year ended December 31, 2016 and any and all amendments hereto, as fully for all intents and purposes as he or she might or could do in person, and hereby ratifies and confirms all that such said attorney-in-fact, acting alone, or his substitute or substitutes, may lawfully do or cause to be done by virtue hereof.

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 C. ROHR Mark C. Rohr	Director, Chairman of the Board of Directors and Chief Executive Officer (Principal Executive Officer)	February 10, 2017
/s/ CHRISTOPHER W. JENSEN Christopher W. Jensen	Senior Vice President, Finance and Chief Financial Officer (Principal Financial Officer)	February 10, 2017
/s/ KEVIN S. OLIVER Kevin S. Oliver	Chief Accounting Officer and Controller (Principal Accounting Officer)	February 10, 2017
/s/ JEAN S. BLACKWELL	Director	February 10, 2017

Jean S. Blackwell		
/s/ WILLIAM M. BROWN William M. Brown	Director	February 10, 2017
/s/ EDWARD G. GALANTE Edward G. Galante	Director	February 10, 2017
/s/ KATHRYN M. HILL Kathryn M. Hill	Director	February 10, 2017

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Signature	Title	Date
/s/ DAVID F. HOFFMEISTER David F. Hoffmeister	Director	February 10, 2017
/s/ JAY V. IHLENFELD Jay V. Ihlenfeld	Director	February 10, 2017
/s/ FARAH M. WALTERS Farah M. Walters	Director	February 10, 2017
/s/ JOHN K. WULFF John K. Wulff	Director	February 10, 2017

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CELANESE CORPORATION AND SUBSIDIARIES
INDEX TO CONSOLIDATED FINANCIAL STATEMENTS

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Report of Independent Registered Public Accounting Firm

The Board of Directors and Stockholders
Celanese Corporation:

We have audited the accompanying consolidated balance sheets of Celanese Corporation and subsidiaries (the "Company") as of December 31, 2016 and 2015, and the related consolidated statements of operations, comprehensive income (loss), equity, and cash flows for each of the years in the three-year period ended December 31, 2016. 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 conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the consolidated financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of the Company as of December 31, 2016 and 2015, and the results of its operations and its cash flows for each of the years in the three-year period ended December 31, 2016, 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), the Company's internal control over financial reporting as of December 31, 2016, based on criteria established in Internal Control — Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO), and our report dated February 10, 2017 expressed an unqualified opinion on the effectiveness of the Company's internal control over financial reporting.

/s/ KPMG LLP
Dallas, Texas
February 10, 2017

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CELANESE CORPORATION AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF OPERATIONS

	Year Ended December 31,		
	2016	2015	2014
	(In $ millions, except share and per share data)		
Net sales	5,389	5,674	6,802
Cost of sales	(3,984)	(4,356)	(5,186)
Gross profit	1,405	1,318	1,616
Selling, general and administrative expenses	(416)	(506)	(758)
Amortization of intangible assets	(9)	(11)	(20)
Research and development expenses	(78)	(119)	(86)
Other (charges) gains, net	(11)	(351)	15
Foreign exchange gain (loss), net	(1)	4	(2)
Gain (loss) on disposition of businesses and assets, net	3	(9)	(7)
Operating profit (loss)	893	326	758
Equity in net earnings (loss) of affiliates	155	181	246
Interest expense	(120)	(119)	(147)
Refinancing expense	(6)	—	(29)
Interest income	2	1	1
Dividend income - cost investments	108	107	116
Other income (expense), net	(2)	(8)	(4)
Earnings (loss) from continuing operations before tax	1,030	488	941
Income tax (provision) benefit	(122)	(201)	(314)
Earnings (loss) from continuing operations	908	287	627
Earnings (loss) from operation of discontinued operations	(3)	(3)	(11)
Gain (loss) on disposition of discontinued operations	—	—	—
Income tax (provision) benefit from discontinued operations	1	1	4
Earnings (loss) from discontinued operations	(2)	(2)	(7)
Net earnings (loss)	906	285	620
Net (earnings) loss attributable to noncontrolling interests	(6)	19	4
Net earnings (loss) attributable to Celanese Corporation	900	304	624
Amounts attributable to Celanese Corporation			
Earnings (loss) from continuing operations	902	306	631
Earnings (loss) from discontinued operations	(2)	(2)	(7)
Net earnings (loss)	900	304	624
Earnings (loss) per common share - basic			
Continuing operations	6.22	2.03	4.07
Discontinued operations	(0.01)	(0.01)	(0.04)
Net earnings (loss) - basic	6.21	2.02	4.03
Earnings (loss) per common share - diluted			
Continuing operations	6.19	2.01	4.04
Discontinued operations	(0.01)	(0.01)	(0.04)
Net earnings (loss) - diluted	6.18	2.00	4.00
Weighted average shares - basic	144,939,433	150,838,050	155,012,370
Weighted average shares - diluted	145,668,181	152,287,955	156,166,993

See the accompanying notes to the consolidated financial statements.

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CELANESE CORPORATION AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME (LOSS)

	Year Ended December 31,		
	2016	2015	2014
	(In $ millions)		
Net earnings (loss)	906	285	620
Other comprehensive income (loss), net of tax			
Unrealized gain (loss) on marketable securities	—	—	1
Foreign currency translation	(11)	(188)	(148)
Gain (loss) on cash flow hedges	5	2	40
Pension and postretirement benefits	(4)	3	(54)
Total other comprehensive income (loss), net of tax	(10)	(183)	(161)
Total comprehensive income (loss), net of tax	896	102	459
Comprehensive (income) loss attributable to noncontrolling interests	(6)	19	4
Comprehensive income (loss) attributable to Celanese Corporation	890	121	463

See the accompanying notes to the consolidated financial statements.

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CELANESE CORPORATION AND SUBSIDIARIES
CONSOLIDATED BALANCE SHEETS

	As of December 31,	
	2016	2015
	(In $ millions, except share data)	
ASSETS		
Current Assets		
Cash and cash equivalents (variable interest entity restricted - 2016: $18; 2015: $7)	638	967
Trade receivables - third party and affiliates (net of allowance for doubtful accounts - 2016: $6; 2015: $6; variable interest entity restricted - 2016: $4; 2015: $6)	801	706
Non-trade receivables, net	223	285
Inventories	720	682
Deferred income taxes	—	68
Marketable securities, at fair value	30	30
Other assets	60	49
Total current assets	2,472	2,787
Investments in affiliates	852	838
Property, plant and equipment (net of accumulated depreciation - 2016: $2,239; 2015: $2,039; variable interest entity restricted - 2016: $734; 2015: $772)	3,577	3,609
Deferred income taxes	159	222
Other assets (variable interest entity restricted - 2016: $9; 2015: $13)	307	300
Goodwill	796	705
Intangible assets, net (variable interest entity restricted - 2016: $26; 2015: $27)	194	125
Total assets	8,357	8,586
LIABILITIES AND EQUITY		
Current Liabilities		
Short-term borrowings and current installments of long-term debt - third party and affiliates	118	513
Trade payables - third party and affiliates	625	587
Other liabilities	322	330
Deferred income taxes	—	30
Income taxes payable	12	90
Total current liabilities	1,077	1,550
Long-term debt, net of unamortized deferred financing costs	2,890	2,468
Deferred income taxes	130	136
Uncertain tax positions	131	167
Benefit obligations	893	1,189
Other liabilities	215	247
Commitments and Contingencies		
Stockholders' Equity		
Preferred stock, $0.01 par value, 100,000,000 shares authorized (2016 and 2015: 0 issued and outstanding)	—	—
Series A common stock, $0.0001 par value, 400,000,000 shares authorized (2016: 167,611,357 issued and 140,660,447 outstanding; 2015: 166,698,787 issued and 146,782,297 outstanding)	—	—
Series B common stock, $0.0001 par value, 100,000,000 shares authorized (2016 and 2015: 0 issued and outstanding)	—	—
Treasury stock, at cost (2016: 26,950,910 shares; 2015: 19,916,490 shares)	(1,531)	(1,031)

Additional paid-in capital	157	136
Retained earnings	4,320	3,621
Accumulated other comprehensive income (loss), net	(358)	(348)
Total Celanese Corporation stockholders' equity	2,588	2,378
Noncontrolling interests	433	451
Total equity	3,021	2,829
Total liabilities and equity	8,357	8,586

See the accompanying notes to the consolidated financial statements.

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CELANESE CORPORATION AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF EQUITY

	Year Ended December 31,					
	2016		2015		2014	
	Shares	Amount	Shares	Amount	Shares	Amount
	(In $ millions, except share data)					
Series A Common Stock						
Balance as of the beginning of the period	146,782,297	—	152,902,710	—	156,939,828	—
Stock option exercises	194,872	—	94,147	—	202,121	—
Purchases of treasury stock	(7,034,420)	—	(6,649,865)	—	(4,338,488)	—
Stock awards	717,698	—	435,305	—	99,249	—
Balance as of the end of the period	140,660,447	—	146,782,297	—	152,902,710	—
Treasury Stock						
Balance as of the beginning of the period	19,916,490	(1,031)	13,266,625	(611)	8,928,137	(361)
Purchases of treasury stock, including related fees	7,034,420	(500)	6,649,865	(420)	4,338,488	(250)
Balance as of the end of the period	26,950,910	(1,531)	19,916,490	(1,031)	13,266,625	(611)
Additional Paid-In Capital						
Balance as of the beginning of the period		136		103		53
Stock-based compensation, net of tax		8		28		43
Stock option exercises, net of tax		13		5		7
Balance as of the end of the period		157		136		103
Retained Earnings						
Balance as of the beginning of the period		3,621		3,491		3,011
Net earnings (loss) attributable to Celanese Corporation		900		304		624
Series A common stock dividends		(201)		(174)		(144)
Balance as of the end of the period		4,320		3,621		3,491
Accumulated Other Comprehensive Income (Loss), Net						
Balance as of the beginning of the period		(348)		(165)		(4)
Other comprehensive income (loss), net of tax		(10)		(183)		(161)
Balance as of the end of the period		(358)		(348)		(165)
Total Celanese Corporation stockholders' equity		2,588		2,378		2,818
Noncontrolling Interests						
Balance as of the beginning of the period		451		260		—
Net earnings (loss) attributable to noncontrolling interests		6		(19)		(4)
(Distributions to) contributions from noncontrolling interests		(24)		210		264
Balance as of the end of the period		433		451		260
Total equity		3,021		2,829		3,078

See the accompanying notes to the consolidated financial statements.

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CELANESE CORPORATION AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF CASH FLOWS

	Year Ended December 31,		
	2016	2015	2014
	(In $ millions)		
Operating Activities			
Net earnings (loss)	906	285	620
Adjustments to reconcile net earnings (loss) to net cash provided by (used in) operating activities			
Asset impairments	2	126	—
Depreciation, amortization and accretion	295	363	298
Pension and postretirement net periodic benefit cost	(54)	(52)	(113)
Pension and postretirement contributions	(350)	(63)	(223)
Actuarial (gain) loss on pension and postretirement plans	103	127	350
Pension curtailments and settlements, net	—	(3)	(78)
Deferred income taxes, net	83	42	124
(Gain) loss on disposition of businesses and assets, net	2	8	8
Stock-based compensation	31	40	46
Undistributed earnings in unconsolidated affiliates	(24)	(5)	(98)
Other, net	15	7	24
Operating cash provided by (used in) discontinued operations	2	(2)	(5)
Changes in operating assets and liabilities			
Trade receivables - third party and affiliates, net	(59)	61	23
Inventories	8	62	(15)
Other assets	39	(17)	20
Trade payables - third party and affiliates	7	(111)	(13)
Other liabilities	(113)	(6)	(6)
Net cash provided by (used in) operating activities	893	862	962
Investing Activities			
Capital expenditures on property, plant and equipment	(246)	(232)	(254)
Acquisitions, net of cash acquired	(178)	(6)	(10)
Proceeds from sale of businesses and assets, net	12	4	—
Capital expenditures related to Fairway Methanol LLC	—	(288)	(424)
Other, net	(27)	(36)	(17)
Net cash provided by (used in) investing activities	(439)	(558)	(705)
Financing Activities			
Net change in short-term borrowings with maturities of 3 months or less	(352)	350	(9)
Proceeds from short-term borrowings	53	80	62
Repayments of short-term borrowings	(90)	(83)	(91)
Proceeds from long-term debt	1,509	—	387
Repayments of long-term debt	(1,127)	(24)	(626)
Purchases of treasury stock, including related fees	(500)	(420)	(250)
Stock option exercises	6	3	5
Series A common stock dividends	(201)	(174)	(144)
(Distributions to) contributions from noncontrolling interests	(24)	214	264
Other, net	(33)	(12)	(13)
Net cash provided by (used in) financing activities	(759)	(66)	(415)
Exchange rate effects on cash and cash equivalents	(24)	(51)	(46)
Net increase (decrease) in cash and cash equivalents	(329)	187	(204)

Cash and cash equivalents as of beginning of period	967	780	984
Cash and cash equivalents as of end of period	638	967	780

See the accompanying notes to the consolidated financial statements.

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CELANESE CORPORATION AND SUBSIDIARIES
NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

1. Description of the Company and Basis of Presentation

Description of the Company

Celanese Corporation and its subsidiaries (collectively, the "Company") is a global technology and specialty materials company. The Company's business involves processing chemical raw materials, such as methanol, carbon monoxide and ethylene, and natural products, including wood pulp, into value-added chemicals, thermoplastic polymers and other chemical-based products.

Definitions

In this Annual Report on Form 10-K ("Annual Report"), the term "Celanese" refers to Celanese Corporation, a Delaware corporation, and not its subsidiaries. The term "Celanese US" refers to the Company's subsidiary, Celanese US Holdings LLC, a Delaware limited liability company, and not its subsidiaries.

Basis of Presentation

The consolidated financial statements contained in this Annual Report were prepared in accordance with accounting principles generally accepted in the United States of America ("US GAAP") for all periods presented and include the accounts of the Company, its majority owned subsidiaries over which the Company exercises control and, when applicable, variable interest entities in which the Company is the primary beneficiary. The consolidated financial statements and other financial information included in this Annual Report, unless otherwise specified, have been presented to separately show the effects of discontinued operations.

In the ordinary course of business, the Company enters into contracts and agreements relative to a number of topics, including acquisitions, dispositions, joint ventures, supply agreements, product sales and other arrangements. The Company endeavors to describe those contracts or agreements that are material to its business, results of operations or financial position. The Company may also describe some arrangements that are not material but in which the Company believes investors may have an interest or which may have been included in a Form 8-K filing. Investors should not assume the Company has described all contracts and agreements relative to the Company's business in this Annual Report.

For those consolidated ventures in which the Company owns or is exposed to less than 100% of the economics, the outside stockholders' interests are shown as noncontrolling interests.

The Company has reclassified certain prior period amounts to conform to the current period's presentation.

2. Summary of Accounting Policies

Consolidation Principles

The consolidated financial statements have been prepared in accordance with US GAAP for all periods presented and include the accounts of the Company and its majority owned subsidiaries over which the Company exercises control. All intercompany accounts and transactions have been eliminated in consolidation.

Estimates and Assumptions

The preparation of consolidated financial statements in conformity with US GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities, disclosure of contingent assets and liabilities at the date of the consolidated financial statements and the reported amounts of net sales, expenses and allocated charges during the reporting period. Significant estimates pertain to impairments of goodwill, intangible assets and other long-lived assets, purchase price allocations, restructuring costs and other (charges) gains, net, income taxes, pension and other postretirement benefits, asset retirement obligations, environmental liabilities and loss contingencies, among others. Actual results could differ from those estimates.

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Fair Value Measurements

The Company determines fair value based on the price that would be received from selling an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. When determining the fair value measurements for assets and liabilities required to be recorded at fair value, the Company considers assumptions that market participants would use when pricing the asset or liability. Market participant assumptions are categorized by a three-tiered fair value hierarchy which prioritizes the inputs used to measure fair value. The hierarchy gives the highest priority to unadjusted quoted prices in active markets for identical assets or liabilities (Level 1 measurement) and the lowest priority to unobservable inputs (Level 3 measurement). This hierarchy requires entities to maximize the use of observable inputs and minimize the use of unobservable inputs. If a financial instrument uses inputs that fall in different levels of the hierarchy, the instrument will be categorized based upon the lowest level of input that is significant to the fair value calculation. Valuations for fund investments, such as common/collective trusts, registered investment companies and short-term investment funds, which do not have readily determinable fair values, are typically estimated using a net asset value provided by a third party as a practical expedient.

The levels of inputs used to measure fair value are as follows:

Level 1 - unadjusted quoted prices for identical assets or liabilities in active markets accessible by the Company

Level 2 - inputs that are observable in the marketplace other than those inputs classified as Level 1

Level 3 - inputs that are unobservable in the marketplace and significant to the valuation

Purchase Accounting

The Company recognizes the identifiable tangible and intangible assets acquired and liabilities assumed based on their estimated fair values as of the acquisition date. The excess of purchase price over the aggregate fair values is recorded as goodwill. Intangible assets are valued using the relief from royalty, multi-period excess earnings and discounted cash flow methodologies, which are considered Level 3 measurements. The relief from royalty method estimates the Company's theoretical royalty savings from ownership of the intangible asset. Key assumptions used in this method include discount rates, royalty rates, growth rates, sales projections and terminal value rates. Key assumptions used in the multi-period excess earnings method include discount rates, retention rates, growth rates, sales projections, expense projections and contributory asset charges. Key assumptions used in the discounted cash flow valuation model include discount rates, growth rates, cash flow projections and terminal value rates. All of these methodologies require significant management judgment and, therefore, are susceptible to change. The Company calculates the fair value of the identifiable tangible and intangible assets acquired and liabilities assumed to allocate the purchase price at the acquisition date. The Company may use the assistance of third-party valuation consultants.

Cash and Cash Equivalents

All highly liquid investments with original maturities of three months or less are considered cash equivalents.

Allowance for Doubtful Accounts

The Company maintains allowances for doubtful accounts for estimated losses resulting from the inability of its customers to make required payments. The Company believes, based on historical results, the likelihood of actual write-offs having a material impact on financial results is low. The allowance for doubtful accounts is estimated using factors such as customer credit ratings, past collection history and general risk profile. Receivables are charged against the allowance for doubtful accounts when it is probable that the receivable will not be recovered.

Inventories

Inventories, including stores and supplies, are stated at the lower of cost and net realizable value. Cost for inventories is determined using the first-in, first-out ("FIFO") method. Cost includes raw materials, direct labor and manufacturing overhead. Cost for stores and supplies is primarily determined by the average cost method.

Investments

• Marketable Securities

The cost of available-for-sale securities sold is determined using the specific identification method.

Investments in Affiliates

Investments where the Company can exercise significant influence over operating and financial policies of an investee, which is generally considered when an investor owns 20% or more of the voting stock of an investee, are accounted for under the equity method of accounting. Investments where the Company does not exercise significant influence are accounted for under the cost method of accounting. The Company determined it cannot exercise significant influence over certain investments where the Company owns greater than a 20% interest due to local government investment in and influence over these entities, limitations on the Company's involvement in the day-to-day operations and the present inability of the entities to provide timely financial information prepared in accordance with US GAAP. Accordingly, these investments are accounted for under the cost method of accounting. In certain instances, the financial information of the Company's equity investees is not available on a timely basis. Accordingly, the Company records its proportional share of the investee's earnings or losses on a consistent lag of no more than one quarter.

When required to assess the recoverability of its investments in affiliates, the Company estimates fair value using a discounted cash flow model. The Company may engage third-party valuation consultants to assist with this process.

Property, Plant and Equipment, Net

Land is recorded at historical cost. Buildings, machinery and equipment, including capitalized interest, and property under capital lease agreements, are recorded at cost less accumulated depreciation. The Company records depreciation and amortization in its consolidated statements of operations as either Cost of sales, Selling, general and administrative expenses or Research and development expenses consistent with the utilization of the underlying assets. Depreciation is calculated on a straight-line basis over the following estimated useful lives of depreciable assets:

Land improvements	20 years
Buildings and improvements	30 years
Machinery and equipment	20 years

Leasehold improvements are amortized over 10 years or the remaining life of the respective lease, whichever is shorter.

Accelerated depreciation is recorded when the estimated useful life is shortened. Ordinary repair and maintenance costs, including costs for planned maintenance turnarounds, that do not extend the useful life of the asset are charged to earnings as incurred. Fully depreciated assets are retained in property and depreciation accounts until sold or otherwise disposed. In the case of disposals, assets and related depreciation are removed from the accounts, and the net amounts, less proceeds from disposal, are included in earnings.

The Company assesses the recoverability of the carrying amount of its property, plant and equipment whenever events or changes in circumstances indicate that the carrying amount of an asset or asset group may not be recoverable. An impairment loss would be assessed when estimated undiscounted future cash flows from the operation and disposition of the asset group are less than the carrying amount of the asset group. Asset groups have identifiable cash flows and are largely independent of other asset groups. Measurement of an impairment loss is based on the excess of the carrying amount of the asset group over its fair value. The Company calculates the fair value using a discounted cash flow model incorporating discount rates commensurate with the risks involved for the asset group, which is classified as a Level 3 fair value measurement. The key assumptions used in the discounted cash flow valuation model include discount rates, growth rates, cash flow projections and terminal value rates. Discount rates, growth rates and cash flow projections involve significant judgment and are based on management's estimate of current and forecasted market conditions and cost structure. Impairment losses are generally recorded to Other (charges) gains, net in the consolidated statements of operations.

Goodwill and Intangible Assets, Net

The Company assesses the recoverability of the carrying amount of its reporting unit goodwill and indefinite-lived intangible assets either qualitatively or quantitatively annually during the third quarter of its fiscal year using June 30 balances or whenever events or changes in circumstances indicate that the carrying amount of the asset may not be fully recoverable. The Company assesses the recoverability of finite-lived intangible assets in the same manner as for property, plant and equipment. Impairment losses are generally recorded to Other (charges) gains, net in the consolidated statements of operations.

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•Goodwill
Recoverability of the carrying amount of goodwill is measured at the reporting unit level. In performing a quantitative analysis, the Company measures the recoverability of goodwill for each reporting unit using a discounted cash flow model incorporating discount rates commensurate with the risks involved, which is classified as a Level 3 fair value measurement. The key assumptions used in the discounted cash flow valuation model include discount rates, growth rates, tax rates, cash flow projections and terminal value rates. Discount rates, growth rates and cash flow projections are the most sensitive and susceptible to change as they require significant management judgment. Discount rates used are similar to the rates estimated by the weighted average cost of capital ("WACC") considering any differences in company-specific risk factors. The Company may engage third-party valuation consultants to assist with this process.
•Indefinite-lived Intangible Assets
Management tests indefinite-lived intangible assets for impairment quantitatively utilizing the relief from royalty method under the income approach to determine the estimated fair value for each indefinite-lived intangible asset, which is classified as a Level 3 fair value measurement. The relief from royalty method estimates the Company's theoretical royalty savings from ownership of the intangible asset. The key assumptions used in this model include discount rates, royalty rates, growth rates, tax rates, sales projections and terminal value rates. Discount rates, royalty rates, growth rates and sales projections are the assumptions most sensitive and susceptible to change as they require significant management judgment. Discount rates used are similar to the rates estimated by the WACC considering any differences in company-specific risk factors. Royalty rates are established by management and are periodically substantiated by third-party valuation consultants.
•Definite-lived Intangible Assets
Customer-related intangible assets and other intangible assets with finite lives are amortized on a straight-line basis over their estimated useful lives, which range from three to 30 years.
Derivative and Hedging Instruments
The Company manages its exposures to interest rates, foreign exchange rates and commodity prices through a risk management program that includes the use of derivative financial instruments. The Company does not use derivative financial instruments for speculative trading purposes. The fair value of derivative instruments other than foreign currency forwards and swaps is recorded as an asset or liability on a net basis at the balance sheet date.
•Interest Rate Risk Management
To reduce the interest rate risk inherent in its variable rate debt, the Company utilizes interest rate swap agreements to convert a portion of its variable rate borrowings into a fixed rate obligation. These interest rate swap agreements fix the London Interbank Offered Rate ("LIBOR") portion of the Company's US dollar denominated variable rate borrowings. Prior to December 2014, all or a portion of these interest rate swap agreements were designated as cash flow hedges. Accordingly, to the extent the cash flow hedge was effective, changes in the fair value of interest rate swaps were included in gain (loss) from cash flow hedges within Accumulated other comprehensive income (loss), net in the consolidated balance sheets. Hedge accounting is discontinued when the interest rate swap is no longer effective in offsetting cash flows attributable to the hedged risk, the interest rate swap expires or the cash flow hedge is dedesignated because it is no longer probable that the forecasted transaction will occur according to the original strategy. In December 2014, the Company dedesignated as cash flow hedges a notional value of $500 million US dollar interest rate swap agreements expiring January 2, 2016. When a cash flow hedge is dedesignated and it is probable that the forecasted transaction will not occur, any related amounts previously included in Accumulated other comprehensive income (loss), net would be reclassified to earnings immediately. Mark-to-market adjustments on dedesignated interest rate swap agreements are included in Interest expense in the consolidated statements of operations through their expiration.
•Foreign Exchange Risk Management
Certain subsidiaries of the Company have assets and liabilities denominated in currencies other than their respective functional currencies, which creates foreign exchange risk. The Company also is exposed to foreign currency fluctuations on transactions with third-party entities as well as intercompany transactions. The Company minimizes its exposure to foreign currency fluctuations by entering into foreign currency forwards and swaps. These foreign currency forwards and swaps are not designated as hedges. Gains and losses on foreign currency forwards and swaps

entered into to offset foreign exchange impacts on intercompany balances are included in Other income (expense), net in the consolidated statements of operations. Gains and losses on foreign currency forwards and swaps entered into to offset foreign exchange impacts on all other assets and liabilities are included in Foreign exchange gain (loss), net in the consolidated statements of operations.

The Company uses non-derivative financial instruments that may give rise to foreign currency transaction gains or losses to hedge the foreign currency exposure of net investments in foreign operations. Accordingly, the effective portion of gains and losses from remeasurement of the non-derivative financial instrument is included in foreign currency translation within Accumulated other comprehensive income (loss), net in the consolidated balance sheets. Gains and losses are reclassified to earnings in the period the hedged investment is sold or liquidated.

Prior to March 2015, the Company used cross-currency swap contracts to hedge its exposure to foreign currency exchange rate risk associated with certain intercompany loans. Under the terms of the contracts, the Company would have exchanged Euro fixed interest for US dollar fixed interest and at maturity would have exchanged Euro notional values for US dollar notional values. The terms of the contracts corresponded to the related hedged intercompany loans. The cross-currency swap contracts were designated as cash flow hedges. Accordingly, the effective portion of the unrealized gains and losses on the contracts was included in gain (loss) from cash flow hedges within Accumulated other comprehensive income (loss), net in the consolidated balance sheets. Gains and losses were reclassified to Interest expense in the consolidated statements of operations over the period that the hedged loans affected earnings. The Euro notional values were marked-to-market based on the current spot rate and gains and losses from remeasurement of the Euro notional values, as well as the foreign exchange impact on the intercompany loans, were included in Other income (expense), net in the consolidated statements of operations. In March 2015, the Company settled its cross-currency swap agreements.

•Commodity Risk Management

The Company has exposure to the prices of commodities in its procurement of certain raw materials. The Company manages its exposure to commodity risk primarily through the use of long-term supply agreements, multi-year purchasing and sales agreements and forward purchase contracts. The Company regularly assesses its practice of using forward purchase contracts and other raw material hedging instruments in accordance with changes in economic conditions. Forward purchases and swap contracts for raw materials are principally settled through physical delivery of the commodity. For qualifying contracts, the Company has elected to apply the normal purchases and normal sales exception based on the probability at the inception and throughout the term of the contract that the Company would not net settle and the transaction would result in the physical delivery of the commodity. Accordingly, realized gains and losses on these contracts are included in the cost of the commodity upon the settlement of the contract.

The Company also uses commodity swaps to hedge the risk of fluctuating price changes in certain raw materials and in which physical settlement does not occur. These commodity swaps fix the variable fee component of the price of certain commodities. All or a portion of these commodity swap agreements may be designated as cash flow hedges. Accordingly, to the extent the cash flow hedge was effective, changes in the fair value of commodity swaps are included in gain (loss) from cash flow hedges within Accumulated other comprehensive income (loss), net in the consolidated balance sheets. Gains and losses are reclassified to earnings in the period that the hedged item affected earnings.

Insurance Loss Reserves

The Company has two wholly-owned insurance companies (the "Captives") that are used as a form of self-insurance for liability and workers compensation risks. Capitalization of the Captives is determined by regulatory guidelines. Premiums written are recognized as revenue based on policy periods. One of the Captives also insures certain third-party risks. The Captives use reinsurance arrangements to reduce their risks, however these arrangements do not relieve the Captives from their obligations to policyholders. The financial condition of the Captives' reinsurers are monitored to minimize exposure to insolvencies. However, failure of the reinsurers to honor their obligations could result in losses to the Captives.

Claim reserves are established when sufficient information is available to indicate a specific policy is involved and the Company can reasonably estimate its liability. These reserves are based on management estimates and periodic actuarial valuations. In addition, reserves have been established to cover exposures for both known and unreported claims. Estimates of these liabilities are reviewed and updated regularly, however it is possible that actual results could differ significantly from the recorded liabilities.

Asset Retirement Obligations

Periodically, the Company will conclude a site no longer has an indeterminate life based on long-lived asset impairment triggering events and decisions made by the Company. Accordingly, the Company will record asset retirement obligations associated with such sites. To measure the fair value of the asset retirement obligations, the Company will use the expected present value technique, which is classified as a Level 3 fair value measurement. The expected present value technique uses a set of cash flows that represent the probability-weighted average of all possible cash flows based on the Company's judgment. The Company uses the following inputs to determine the fair value of the asset retirement obligations based on the Company's experience with fulfilling obligations of this type and the Company's knowledge of market conditions: (a) labor costs; (b) allocation of overhead costs; (c) profit on labor and overhead costs; (d) effect of inflation on estimated costs and profits; (e) risk premium for bearing the uncertainty inherent in cash flows, other than inflation; (f) time value of money represented by the risk-free interest rate commensurate with the timing of the associated cash flows; and (g) nonperformance risk relating to the liability, which includes the Company's own credit risk. The asset retirement obligations are accreted to their undiscounted values until the time at which they are expected to be settled.

The Company has identified but not recognized asset retirement obligations related to certain of its existing operating facilities. Examples of these types of obligations include demolition, decommissioning, disposal and restoration activities. Legal obligations exist in connection with the retirement of these assets upon closure of the facilities or abandonment of the existing operations. However, the Company currently plans on continuing operations at these facilities indefinitely and therefore, a reasonable estimate of fair value cannot be determined at this time. In the event the Company considers plans to abandon or cease operations at these sites, an asset retirement obligation will be reassessed at that time. If certain operating facilities were to close, the related asset retirement obligations could significantly affect the Company's results of operations and cash flows.

Environmental Liabilities

The Company manufactures and sells a diverse line of chemical products throughout the world. Accordingly, the Company's operations are subject to various hazards incidental to the production of industrial chemicals including the use, handling, processing, storage and transportation of hazardous materials. The Company recognizes losses and accrues liabilities relating to environmental matters if available information indicates that it is probable that a liability has been incurred and the amount of loss can be reasonably estimated. Depending on the nature of the site, the Company accrues through 15 years, unless the Company has government orders or other agreements that extend beyond 15 years. The Company estimates environmental liabilities on a case-by-case basis using the most current status of available facts, existing technology, presently enacted laws and regulations and prior experience in remediation of contaminated sites. Recoveries of environmental costs from other parties are recorded as assets when their receipt is deemed probable.

An environmental reserve related to cleanup of a contaminated site might include, for example, a provision for one or more of the following types of costs: site investigation and testing costs, cleanup costs, costs related to soil and water contamination resulting from tank ruptures and post-remediation monitoring costs. These undiscounted reserves do not take into account any claims or recoveries from insurance. The measurement of environmental liabilities is based on the Company's periodic estimate of what it will cost to perform each of the elements of the remediation effort. The Company utilizes third parties to assist in the management and development of cost estimates for its sites. Changes to environmental regulations or other factors affecting environmental liabilities are reflected in the consolidated financial statements in the period in which they occur.

Deferred Financing Costs

Deferred financing costs are amortized using a method that approximates the effective interest rate method over the term of the related debt into Interest expense in the consolidated statements of operations. Upon the extinguishment of the related debt, any unamortized deferred financing costs are immediately expensed and included in Refinancing expense in the consolidated statements of operations. Upon the modification of the related debt, a portion of unamortized deferred financing costs may be immediately expensed and included in Refinancing expense in the consolidated statements of operations. Direct costs of refinancing activities are immediately expensed and included in Refinancing expense in the consolidated statements of operations.

Pension and Other Postretirement Obligations

The Company recognizes a balance sheet asset or liability for each of its pension and other postretirement benefit plans equal to the plan's funded status as of a December 31 measurement date. The amounts recognized in the consolidated financial statements related to pension and other postretirement benefits are determined on an actuarial basis. Various assumptions are used in the calculation of the actuarial valuation of the employee benefit plans. These assumptions include the discount rate, compensation levels, expected long-term rates of return on plan assets and trends in health care costs. In addition, actuarial consultants use factors such as withdrawal and mortality rates to estimate the projected benefit obligation.

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The Company applies the long-term expected rate of return to the fair value of plan assets and immediately recognizes in operating results the change in fair value of plan assets and net actuarial gains and losses annually in the fourth quarter of each fiscal year and whenever a plan is required to be remeasured. Events requiring a plan remeasurement will be recognized in the quarter in which such remeasurement event occurs. The remaining components of pension and other postretirement plan net periodic benefit costs are recorded on a quarterly basis.

The Company allocates the service cost and amortization of prior service cost (or credit) components of its pension and postretirement plans to its business segments. Interest cost, expected return on assets and net actuarial gains and losses are considered financing activities managed at the corporate level and are recorded to Other Activities. The Company believes the expense allocation appropriately matches the cost incurred for active employees to the respective business segment.

Other postretirement benefit plans provide medical and life insurance benefits to retirees who meet minimum age and service requirements. The key determinants of the accumulated postretirement benefit obligation ("APBO") are the discount rate and the health care cost trend rate.

• Discount Rate

As of the measurement date, the Company determines the appropriate discount rate used to calculate the present value of future cash flows currently expected to be required to settle the pension and other postretirement benefit obligations. The discount rate is generally based on the yield on high-quality corporate fixed-income securities.

In the US, the rate used to discount pension and other postretirement benefit plan liabilities is based on a yield curve developed from market data of over 300 Aa-grade non-callable bonds at the measurement date. This yield curve has discount rates that vary based on the duration of the obligations. The estimated future cash flows for the pension and other benefit obligations were matched to the corresponding rates on the yield curve to derive a weighted average discount rate.

The Company determines its discount rates in the Euro zone using the iBoxx Euro Corporate AA Bond indices with appropriate adjustments for the duration of the plan obligations. In other international locations, the Company determines its discount rates based on the yields of high quality government bonds with a duration appropriate to the duration of the plan obligations.

• Change in estimate regarding pension and other postretirement benefits

Beginning in 2016, the Company elected to change the method used to estimate the service and interest cost components of net periodic benefit cost for its significant defined benefit pension plans and other postretirement benefit plans. Previously, the Company estimated the service and interest cost components utilizing a single weighted average discount rate derived from the yield curve used to measure the benefit obligation at the beginning of the period. The Company has elected to use a full yield curve approach in the estimation of these components of net periodic benefit cost by applying the specific spot rates along the yield curve used in the determination of the benefit obligation to the relevant projected cash flows. This change improves the correlation between projected benefit cash flows and the corresponding yield curve spot rates and provides a more precise measurement of service and interest costs. This change does not affect the measurement of the Company's total benefit obligations as the change in service and interest cost will be completely offset in the annual actuarial (gain) loss reported. The Company has accounted for this change as a change in estimate and, accordingly, has accounted for it prospectively beginning in 2016.

• Expected Long-Term Rate of Return on Assets

The Company determines the long-term expected rate of return on plan assets by considering the current target asset allocation, as well as the historical and expected rates of return on various asset categories in which the plans are invested. A single long-term expected rate of return on plan assets is then calculated for each plan as the weighted average of the target asset allocation and the long-term expected rate of return assumptions for each asset category within each plan.

The expected rate of return is assessed annually and is based on long-term relationships among major asset classes and the level of incremental returns that can be earned by the successful implementation of different active investment management strategies. Equity returns are based on estimates of long-term inflation rate, real rate of return, 10-year Treasury bond premium over cash and historical equity risk premium. Fixed income returns are based on maturity, historical long-term inflation, real rate of return and credit spreads.

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Investment Policies and Strategies

The investment objectives for the Company's pension plans are to earn, over a moving twenty-year period, a long-term expected rate of return, net of investment fees and transaction costs, sufficient to satisfy the benefit obligations of the plan, while at the same time maintaining adequate liquidity to pay benefit obligations and proper expenses, and meet any other cash needs, in the short- to medium-term.

The equity and debt securities objectives are to provide diversified exposure across the US and global equity markets and to manage the risks and returns of the plans through the use of multiple managers and strategies. The fixed income strategy is designed to reduce liability-related interest rate risk by investing in bonds that match the duration and credit quality of the plan liabilities. Derivatives-based strategies may be used to mitigate investment risks.

The financial objectives of the qualified pension plans are established in conjunction with a comprehensive review of each plan's liability structure. The Company's asset allocation policy is based on detailed asset/liability analysis. In developing investment policy and financial goals, consideration is given to each plan's demographics, the returns and risks associated with current and alternative investment strategies and the current and projected cash, expense and funding ratios of each plan. Investment policies must also comply with local statutory requirements as determined by each country. A formal asset/liability study of each plan is undertaken every three to five years or whenever there has been a material change in plan demographics, benefit structure or funding status and investment market. The Company has adopted a long-term investment horizon such that the risk and duration of investment losses are weighed against the long-term potential for appreciation of assets. Although there cannot be complete assurance that these objectives will be realized, it is believed that the likelihood for their realization is reasonably high, based upon the asset allocation chosen and the historical and expected performance of the asset classes utilized by the plans. The intent is for investments to be broadly diversified across asset classes, investment styles, market sectors, investment managers, developed and emerging markets and securities in order to moderate portfolio volatility and risk. Investments may be in separate accounts, commingled trusts, mutual funds and other pooled asset portfolios provided they all conform to fiduciary standards.

External investment managers are hired to manage pension assets. Investment consultants assist with the screening process for each new manager hired. Over the long-term, the investment portfolio is expected to earn returns that exceed a composite of market indices that are weighted to match each plan's target asset allocation. The portfolio return should also (over the long-term) meet or exceed the return used for actuarial calculations in order to meet the future needs of each plan.

Commitments and Contingencies

Due to the inherent subjectivity of assessments and unpredictability of outcomes of legal proceedings, the Company's litigation accruals and estimates of possible loss or range of possible loss ("Possible Loss") may not represent the ultimate loss to the Company from legal proceedings. For reasonably possible loss contingencies that may be material, the Company estimates its Possible Loss when determinable, considering that the Company could incur no loss in certain matters.

For some matters, the Company is unable, at this time, to estimate its Possible Loss that is reasonably possible of occurring. Generally, the less progress that has been made in the proceedings or the broader the range of potential results, the more difficult it is for the Company to estimate the Possible Loss that is reasonably possible the Company could incur. The Company may disclose certain information related to a plaintiff's claim against the Company alleged in the plaintiff's pleadings or otherwise publicly available. While information of this type may provide insight into the potential magnitude of a matter, it does not necessarily represent the Company's estimate of reasonably possible or probable loss. Some of the Company's exposure in legal matters may be offset by applicable insurance coverage. The Company does not consider the possible availability of insurance coverage in determining the amounts of any accruals or any estimates of Possible Loss. Thus, the Company's exposure and ultimate losses may be higher or lower, and possibly materially so, than the Company's litigation accruals and estimates of Possible Loss.

Revenue Recognition

The Company recognizes revenue when title and risk of loss have been transferred to the customer, generally at the time of shipment of products, and provided that four basic criteria are met: (a) persuasive evidence of an arrangement exists; (b) delivery has occurred or services have been rendered; (c) the fee is fixed or determinable; and

(d) collectibility is reasonably assured. Shipping and handling fees billed to customers in a sales transaction are recorded in Net sales and shipping and handling costs incurred are recorded in Cost of sales.

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Research and Development
The costs of research and development are charged as an expense in the period in which they are incurred.
Management Compensation Plans
Share-based compensation expense is measured at the grant date, based on the fair value of the award, and is recognized over the participant's requisite service period. Upon termination of a participant's employment with the Company by reason of death or disability, retirement or by the Company without cause (as defined in the respective award agreements), a prorated award will generally vest on the original vesting date. The prorated award is calculated based on the time lapsed between the grant date and the date of termination, reduced by awards previously vested. Upon the termination of a Participant's employment with the Company for any other reason, any unvested portion of the award shall be forfeited and canceled without consideration.
•Restricted Stock Units ("RSUs")
Performance-based RSUs. The Company generally grants performance-based RSUs to the Company's executive officers and certain employees annually in February. The Company may also grant performance-based RSUs to certain new employees or to employees who assume positions of increasing responsibility at the time those events occur. The fair value of the Company's performance-based RSUs with a performance condition is equal to the average of the high and low price of the Company's Series A common stock, par value $0.0001 per share ("Common Stock"), on the grant date less the present value of the expected dividends not received during the vesting period. Outstanding performance-based RSUs granted prior to 2016 generally vest in two equal tranches with the final tranche vesting three years from the grant date. Outstanding performance-based RSUs granted in 2016 and thereafter generally cliff-vest three years from the date of grant. Compensation expense for performance-based RSUs less estimated forfeitures is recognized over the vesting period of the respective grant based on the accelerated attribution method. The number of performance-based RSUs that ultimately vest is dependent on one or both of the following according to the terms of the specific award agreement: the achievement of (a) internal profitability targets (performance condition) and (b) market performance targets measured by the comparison of the Company's stock performance versus a defined peer group (market condition). Based on the achievement of internal profitability targets, the ultimate number of shares of the Company's Common Stock issued will range from zero to stretch, with stretch defined individually under each award, net of shares used to cover minimum statutory personal income taxes withheld. Performance-based RSUs are canceled to the extent actual results do not meet minimum internal profitability measures, as defined individually under each award.
Time-based RSUs. The Company grants non-employee Directors time-based RSUs annually that generally vest one year from the grant date. The Company also grants time-based RSUs to the Company's executives and certain employees that generally vest ratably over three years. The fair value of the time-based RSUs is equal to the average of the high and low price of the Company's Common Stock on the grant date less the present value of the expected dividends not received during the vesting period. Compensation expense for time-based RSUs less estimated forfeitures is recognized over the vesting period of the respective grant on a straight-line basis.
The Company's RSUs are net settled by withholding shares of the Company's Common Stock to cover minimum statutory income taxes and remitting the remaining shares of the Company's Common Stock to an individual brokerage account. Authorized shares of the Company's Common Stock are used to settle RSUs.
Under the 2009 Global Incentive Plan ("2009 GIP"), the Company may not grant RSUs with the right to participate in dividends or dividend equivalents.
Income Taxes
The provision for income taxes is determined using the asset and liability approach of accounting for income taxes. Under this approach, deferred income taxes reflect the net tax effects of temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for income tax purposes and net operating loss and tax credit carryforwards. The amount of deferred taxes on these temporary differences is determined using the tax rates that are expected to apply to the period when the asset is realized or the liability is settled, as applicable, based on tax rates and laws in the respective tax jurisdiction enacted as of the balance sheet date. The Company reviews its deferred tax assets for recoverability and establishes a valuation allowance based on historical taxable income, projected future taxable income, applicable tax strategies and the expected timing of the

reversals of existing

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temporary differences. A valuation allowance is provided when it is more likely than not (likelihood of greater than 50%) that some portion or all of the deferred tax assets will not be realized.

The Company considers many factors when evaluating and estimating its tax positions and tax benefits, which may require periodic adjustments and which may not accurately anticipate actual outcomes. Tax positions are recognized only when it is more likely than not (likelihood of greater than 50%), based on technical merits, that the positions will be sustained upon examination. Tax positions that meet the more-likely-than-not threshold are measured using a probability weighted approach as the largest amount of tax benefit that is greater than 50% likely of being realized upon settlement. Whether the more-likely-than-not recognition threshold is met for a tax position is a matter of judgment based on the individual facts and circumstances of that position evaluated in light of all available evidence. The Company recognizes interest and penalties related to uncertain tax positions in Income tax (provision) benefit in the consolidated statements of operations.

Functional and Reporting Currencies

For the Company's international operations where the functional currency is other than the US dollar, assets and liabilities are translated using period-end exchange rates, while the statement of operations amounts are translated using the average exchange rates for the respective period. Differences arising from the translation of assets and liabilities in comparison with the translation of the previous periods or from initial recognition during the period are included as a separate component of Accumulated other comprehensive income (loss), net.

3. Recent Accounting Pronouncements

The following table provides a brief description of recent Accounting Standard Updates ("ASU") issued by the Financial Accounting Standards Board ("FASB"):

Standard	Description	Effective Date	Effect on the Financial Statements or Other Significant Matters
In October 2016, the FASB issued ASU 2016-16, Intra-Entity Transfers of Assets Other Than Inventory.	The new guidance requires the income tax consequences of an intra-entity transfer of assets other than inventory to be recognized when the transfer occurs rather than deferring until an outside sale has occurred.	January 1, 2018. Early adoption is permitted.	The Company does not expect adoption will have a material impact on its financial statements and related disclosures.
In August 2016, the FASB issued ASU 2016-15, Classification of Certain Cash Receipts and Cash Payments.	The new guidance clarifies the presentation and classification of certain cash receipts and cash payments in the statement of cash flows.	January 1, 2018. Early adoption is permitted.	The Company does not expect adoption will have a material impact on its financial statements and related disclosures.
In March 2016, the FASB issued ASU 2016-09, Improvements to Employee Share-Based Payment Accounting.	The new guidance simplifies several aspects of the accounting for share-based payment transactions, including the timing of recognizing income tax consequences, classification of awards as either equity or liabilities and classification on the statement of cash flows.	January 1, 2017. Early adoption is permitted.	The Company does not expect adoption will have a material impact on its financial statements and related disclosures.
In February 2016, the FASB issued ASU 2016-02, Leases.	The new guidance supersedes the lease guidance under FASB Accounting Standards Codification ("ASC") Topic 840, Leases, resulting in the creation of FASB ASC Topic 842, Leases. The guidance requires a lessee to recognize in the statement of financial position a liability to make lease payments and a right-of-use asset representing its right to use the underlying asset for the lease term for both finance and operating leases.	January 1, 2019. Early adoption is permitted.	The Company is currently evaluating its population of leases, and is continuing to assess all potential impacts of the standard, but currently believes the most significant impact relates to its accounting for manufacturing and logistics equipment, and real estate operating leases. The Company anticipates recognition of additional assets and corresponding liabilities related to leases upon adoption. The Company plans to adopt the standard effective January 1, 2019.

In November 2015, the FASB issued ASU 2015-17, Balance Sheet Classification of Deferred Taxes.	The new guidance requires deferred tax liabilities and assets to be classified as noncurrent in a classified statement of financial position.	January 1, 2017. Early adoption is permitted.	The Company elected to early adopt the new guidance prospectively during the three months ended March 31, 2016 in accordance with the FASB's disclosure simplification initiatives. The adoption of this ASU resulted in a reclassification from current to noncurrent deferred tax assets and deferred tax liabilities as of March 31, 2016 of $68 million and $30 million, respectively. Prior periods were not adjusted.
In May 2014, the FASB issued ASU 2014-09, Revenue from Contracts with Customers. Since that date, the FASB has issued additional ASUs clarifying certain aspects of ASU 2014-09.	The new guidance requires entities to recognize revenue in a way that depicts the transfer of promised goods or services to customers in an amount that reflects the consideration to which the entity expects to be entitled to in exchange for those goods or services. The new guidance provides alternative methods of adoption. Subsequent guidance issued after May 2014 did not change the core principle of ASU 2014-09.	January 1, 2018. Earlier adoption was permitted, but not before December 15, 2016.	The Company is currently scoping its revenue contracts to assess the potential impact on its consolidated financial statements. The Company plans to adopt the revenue guidance effective January 1, 2018, although it has not yet selected a transition method. The Company currently does not expect the adoption to have a material impact on its consolidated financial statements and related disclosures. Further, it does not expect to change the manner or timing of recognizing revenue as a majority of its revenue transactions are recognized when product is delivered.

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4. Acquisitions, Dispositions and Plant Closures
Acquisitions
• SO.F.TER. S.p.A.
On December 1, 2016, the Company acquired 100% of the stock of the Forli, Italy based SO.F.TER. S.p.A. ("SOFTER"), a leading thermoplastic compounder. The acquisition of SOFTER increases the Company's global engineered materials product platforms, extends the operational model, technical and industry solutions capabilities and expands project pipelines. The acquisition was accounted for as a business combination and the acquired operations are included in the Advanced Engineered Materials segment.
Pro forma financial information since the respective acquisition date has not been provided as the acquisition did not have a material impact on the Company's financial information. The Company allocated the purchase price of the acquisition to identifiable assets acquired and liabilities assumed based on their estimated fair values as of the acquisition date. The excess of the purchase price over the aggregate fair values was recorded as goodwill (Note 2 and Note 11). The Company calculated the fair value of the assets acquired using the income, market, or cost approach (or a combination thereof). Fair values were determined based on Level 3 inputs (Note 2) including estimated future cash flows, discount rates, royalty rates, growth rates, sales projections, retention rates and terminal values, all of which require significant management judgment and are susceptible to change. The purchase price allocation is based upon preliminary information and is subject to change if additional information about the facts and circumstances that existed at the acquisition date becomes available. The final fair value of the net assets acquired may result in adjustments to the assets and liabilities, including goodwill. However, any subsequent measurement period adjustments are not expected to have a material impact on the Company's results of operations.
The preliminary purchase price allocation for the SOFTER acquisition is as follows:

	As of December 1, 2016 (In $ millions)
Cash and cash equivalents	11
Trade receivables - third party and affiliates	53
Inventories	58
Property, plant and equipment, net	68
Intangible assets (Note 11)	79
Goodwill (Note 11)(1)	106
Other assets(2)	33
Total fair value of assets acquired	408
Trade payables - third party and affiliates	(41)
Total debt (Note 14)	(103)
Deferred income taxes	(30)
Other liabilities	(45)
Total fair value of liabilities assumed	(219)
Net assets acquired	189

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(1) Goodwill consists of expected revenue and operating synergies resulting from the acquisition. None of the goodwill is deductible for income tax purposes.
(2) Includes a $23 million indemnity receivable for uncertain tax positions related to the acquisition.
Transaction related costs of $3 million were expensed as incurred to Selling, general and administrative expenses in the consolidated statements of operations. The amount of pro forma Net earnings (loss) of SOFTER included in the Company's consolidated statement of operations was approximately 2% (unaudited) of its consolidated Net earnings (loss) had the acquisition occurred as of the beginning of 2016. The amount of SOFTER Net earnings (loss)

consolidated by the Company since the acquisition date was not material.

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• Cool Polymers

In October 2014, the Company completed the acquisition of substantially all of the assets of Cool Polymers, Inc., including CoolPoly®, a portfolio of thermally conductive polymers for cash plus contingent consideration (Note 25), to support the strategic growth of the Company's engineered materials business. The acquired operations are included in the Company's Advanced Engineered Materials segment. Pro forma financial information since the respective acquisition date has not been provided as the acquisition did not have a material impact on the Company's financial information. The Company allocated the purchase price of the acquisition to identifiable assets acquired and liabilities assumed based on their estimated fair values as of the acquisition date. The excess of the purchase price over the aggregate fair values was recorded as goodwill (Note 2).

Plant Closures

• Lanaken, Belgium

In December 2015, the Company announced it had ceased 50% of its manufacturing operations at its acetate tow facility in Lanaken, Belgium. The exit costs related to the capacity reduction at its Lanaken facility are included in Other (charges) gains, net in the consolidated statements of operations (Note 18). The Lanaken, Belgium operations are included in the Company's Consumer Specialties segment.

• Tarragona, Spain

In December 2015, the Company announced the sale of its conventional emulsions production facility. The Company was unable to find a credible buyer for the vinyl acetate ethylene ("VAE") emulsions facility, resulting in its closure. The Company completed the information and consultation process with employee representatives pursuant to which the Company ceased all manufacturing operations at the VAE emulsions facility. The exit costs, including long-lived asset impairment losses, related to the closure of the Tarragona VAE facility and the sale of the conventional facility are included in Other (charges) gains, net in the consolidated statements of operations (Note 18). The Tarragona, Spain operations are included in the Company's Industrial Specialties segment.

• Meredosia, Illinois

In December 2015, the Company ceased operation of its VAE emulsions facility in Meredosia, Illinois. The exit costs, including long-lived asset impairment losses, related to the closure of the VAE facility are included in Other (charges) gains, net in the consolidated statements of operations (Note 18). The Meredosia, Illinois operations are included in the Company's Industrial Specialties segment.

During the year ended December 31, 2015, the Company also recorded $39 million in accelerated depreciation expense related to property, plant and equipment no longer in use at the Company's ethanol technology development unit in Clear Lake, Texas. The accelerated depreciation is included in Research and development expenses in the consolidated statements of operations and is included in the Company's Acetyl Intermediates segment.

5. Ventures and Variable Interest Entities

Consolidated Variable Interest Entities

In February 2014, the Company formed a joint venture, Fairway Methanol LLC ("Fairway"), with Mitsui & Co., Ltd., of Tokyo, Japan ("Mitsui"), in which the Company owns 50% of Fairway, for the production of methanol at the Company's integrated chemical plant in Clear Lake, Texas. The methanol unit utilizes natural gas in the US Gulf Coast region as a feedstock and benefits from the existing infrastructure at the Company's Clear Lake facility. Both Mitsui and the Company supply their own natural gas to Fairway in exchange for methanol tolling under a cost-plus off-take arrangement.

The Company determined that Fairway is a variable interest entity ("VIE") in which the Company is the primary beneficiary. Under the terms of the joint venture agreements, the Company provides site services and day-to-day operations for the methanol facility. In addition, the joint venture agreements provide that the Company indemnifies Mitsui for environmental obligations that exceed a specified threshold, as well as an equity option between the partners. Accordingly, the Company consolidates the venture and records a noncontrolling interest for the share of the venture owned by Mitsui. Fairway is included in the Company's Acetyl Intermediates segment.

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The carrying amount of the assets and liabilities associated with Fairway included in the consolidated balance sheets are as follows:

	As of December 31,	
	2016	2015
	(In $ millions)	
Cash and cash equivalents	18	7
Trade receivables, net - third party & affiliates	8	12
Property, plant and equipment (net of accumulated depreciation - 2016: $50; 2015: $10)	734	772
Intangible assets (net of accumulated amortization - 2016: $1; 2015: $0)	26	27
Other assets	9	13
Total assets[(1)]	795	831
Trade payables	15	9
Other liabilities[(2)]	2	5
Total debt	5	5
Deferred income taxes	2	2
Total liabilities	24	21

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(1) Assets can only be used to settle the obligations of Fairway.

(2) Primarily represents amounts owed by Fairway to the Company for reimbursement of expenditures.

Nonconsolidated Variable Interest Entities

The Company holds variable interests in entities that supply certain raw materials and services to the Company. The variable interests primarily relate to cost-plus contractual arrangements with the suppliers and recovery of capital expenditures for certain plant assets plus a rate of return on such assets. Liabilities for such supplier recoveries of capital expenditures have been recorded as capital lease obligations. The entities are not consolidated because the Company is not the primary beneficiary of the entities as it does not have the power to direct the activities of the entities that most significantly impact the entities' economic performance. The Company's maximum exposure to loss as a result of its involvement with these VIEs as of December 31, 2016 relates primarily to the recovery of capital expenditures for certain property, plant and equipment.

The carrying amount of the assets and liabilities associated with the obligations to nonconsolidated VIEs, as well as the maximum exposure to loss relating to these nonconsolidated VIEs are as follows:

	As of December 31,	
	2016	2015
	(In $ millions)	
Property, plant and equipment, net	60	73
Trade payables	53	47
Current installments of long-term debt	10	10
Long-term debt	91	109
Total liabilities	154	166
Maximum exposure to loss	240	268

The difference between the total liabilities associated with obligations to unconsolidated VIEs and the maximum exposure to loss primarily represents take-or-pay obligations for services included in the Company's unconditional purchase obligations (Note 24).

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6. Marketable Securities, at Fair Value

The Company's nonqualified trusts hold available-for-sale securities for funding requirements of the Company's nonqualified pension plans (Note 15) as follows:

	As of December 31, 2016	2015
	(In $ millions)	
Amortized cost	30	30
Gross unrealized gain	—	—
Gross unrealized loss	—	—
Fair value	30	30

7. Receivables, Net

	As of December 31, 2016	2015
	(In $ millions)	
Trade receivables - third party and affiliates	807	712
Allowance for doubtful accounts - third party and affiliates	(6)	(6)
Trade receivables - third party and affiliates, net	801	706

	As of December 31, 2016	2015
	(In $ millions)	
Non-income taxes receivable	83	121
Reinsurance receivables	16	18
Income taxes receivable	43	79
Other	81	67
Non-trade receivables, net	223	285

8. Inventories

	As of December 31, 2016	2015
	(In $ millions)	
Finished goods	506	498
Work-in-process	45	43
Raw materials and supplies	169	141
Total	720	682

9. Investments in Affiliates

Entities in which the Company has an investment accounted for under the cost or equity method of accounting are considered affiliates; any transactions or balances with such companies are considered affiliate transactions.

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Equity Method

Equity method investments and ownership interests by business segment are as follows:

	Ownership as of December 31,		Carrying Value as of December 31,		Share of Earnings (Loss) Year Ended December 31,			Dividends and Other Distributions Year Ended December 31,		
	2016	2015	2016	2015	2016	2015	2014	2016	2015	2014
	(In percentages)		(In $ millions)							
Advanced Engineered Materials										
Ibn Sina	25	25	113	87	38	88	115	(18)	(98)	(85)
Fortron Industries LLC	50	50	100	100	9	11	9	(9)	(8)	(7)
Korea Engineering Plastics Co., Ltd.	50	50	137	127	25	16	10	(11)	(10)	(16)
Polyplastics Co., Ltd.	45	45	156	168	50	35	27	(54)	(20)	(3)
Other Activities[1]										
InfraServ GmbH & Co. Gendorf KG	39	39	38	37	7	7	9	(5)	(5)	(7)
InfraServ GmbH & Co. Hoechst KG[2]	32	32	132	147	22	21	72	(30)	(32)	(26)
InfraServ GmbH & Co. Knapsack KG	27	27	18	18	4	4	4	(4)	(3)	(4)
Consumer Specialties										
Sherbrooke Capital Health and Wellness, L.P.[3]	10	10	3	3	—	(1)	—	—	—	—
Total			697	687	155	181	246	(131)	(176)	(148)

(1) InfraServ real estate service companies ("InfraServ Entities") own and operate sites in Frankfurt am Main-Hoechst, Gendorf and Knapsack, Germany. The InfraServ Entities were created to own land and property and to provide various technical and administrative services at these manufacturing locations.

(2) InfraServ GmbH & Co. Hoechst KG is owned primarily by an entity included in the Company's Other Activities. The Company's Consumer Specialties segment and Acetyl Intermediates segment also each hold an ownership percentage. During the three months ended June 30, 2014, InfraServ GmbH & Co. Hoechst KG restructured the debt of a subsidiary resulting in additional equity in net earnings of affiliates of $48 million.

(3) The Company accounts for its ownership interest in Sherbrooke Capital Health and Wellness, L.P. under the equity method of accounting because the Company is able to exercise significant influence.

Cost Method

Cost method investments and ownership interests by business segment are as follows:

	Ownership as of December 31,		Carrying Value as of December 31,		Dividend Income for the Year Ended December 31,		
	2016	2015	2016	2015	2016	2015	2014
	(In percentages)		(In $ millions)				
Consumer Specialties							
Kunming Cellulose Fibers Co. Ltd.	30	30	14	14	14	14	15
Nantong Cellulose Fibers Co. Ltd.	31	31	106	106	80	79	87
Zhuhai Cellulose Fibers Co. Ltd.	30	30	30	22	13	13	13
Other Activities							
InfraServ GmbH & Co. Wiesbaden KG	8	8	5	5	1	1	1

Other	—	4	—	—	—
Total	155	151	108	107	116

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Transactions with Affiliates

The Company owns manufacturing facilities at the InfraServ location in Frankfurt am Main-Hoechst, Germany and has contractual agreements with the InfraServ Entities and certain other equity affiliates and investees accounted for under the cost method. These contractual agreements primarily relate to energy purchases, site services and purchases of product for consumption and resale.

Transactions and balances with affiliates are as follows:

	Year Ended December 31,		
	2016	2015	2014
	(In $ millions)		
Purchases	203	195	231
Sales	2	—	—

	As of December 31,	
	2016	2015
	(In $ millions)	
Non-trade receivables	26	23
Total due from affiliates	26	23
Short-term borrowings[(1)]	17	16
Trade payables	45	34
Current Other liabilities	8	6
Total due to affiliates	70	56

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(1) The Company has agreements with certain affiliates whereby excess affiliate cash is lent to and managed by the Company at variable interest rates governed by those agreements.

10. Property, Plant and Equipment, Net

	As of December 31,	
	2016	2015
	(In $ millions)	
Land	38	39
Land improvements	70	60
Buildings and building improvements	695	679
Machinery and equipment	4,753	4,609
Construction in progress	260	261
Gross asset value	5,816	5,648
Accumulated depreciation	(2,239)	(2,039)
Net book value	3,577	3,609

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Assets under capital leases, net, included in the amounts above are as follows:

	As of December 31, 2016	2015
	(In $ millions)	
Buildings	13	13
Machinery and equipment	291	289
Accumulated depreciation	(149)	(138)
Net book value	155	164

Capitalized interest costs and depreciation expense are as follows:

	Year Ended December 31, 2016	2015	2014
	(In $ millions)		
Capitalized interest	5	15	16
Depreciation expense	281	346	272

During 2016 and 2015, certain long-lived assets were impaired (Note 18). No long-lived assets were impaired during 2014.

11. Goodwill and Intangible Assets, Net

Goodwill

	Advanced Engineered Materials	Consumer Specialties	Industrial Specialties	Acetyl Intermediates	Total
	(In $ millions)				
As of December 31, 2014	295	240	41	173	749
Acquisitions (Note 4)	—	—	—	—	—
Exchange rate changes	(13)	(10)	(2)	(19)	(44)
As of December 31, 2015	282	230	39	154	705
Acquisitions (Note 4)	106	—	—	—	106
Exchange rate changes	(3)	(5)	(1)	(6)	(15)
As of December 31, 2016[1]	385	225	38	148	796

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[1] There were $0 million of accumulated impairment losses as of December 31, 2016.

In connection with the Company's annual goodwill impairment assessment, the Company did not record an impairment loss to goodwill during the nine months ended September 30, 2016 as the estimated fair value for each of the Company's reporting units exceeded the carrying amount of the underlying assets by a substantial margin (Note 2). No events or changes in circumstances occurred during the three months ended December 31, 2016 that would indicate that the carrying amount of the assets may not be fully recoverable. Accordingly, no additional impairment analysis was performed during that period.

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Intangible Assets, Net

Finite-lived intangible assets are as follows:

	Licenses	Customer-Related Intangible Assets	Developed Technology	Covenants Not to Compete and Other	Total
	(In $ millions)				
Gross Asset Value					
As of December 31, 2014	32	495	33	49	609
Acquisitions (Note 5)	7	—	2	1	10 [1]
Exchange rate changes	(1)	(39)	—	—	(40)
As of December 31, 2015	38	456	35	50	579
Acquisitions (Note 4)	—	64	—	3	67 [2]
Exchange rate changes	(2)	(11)	—	—	(13)
As of December 31, 2016	36	509	35	53	633
Accumulated Amortization					
As of December 31, 2014	(23)	(483)	(23)	(27)	(556)
Amortization	(3)	(4)	(2)	(2)	(11)
Exchange rate changes	1	38	—	—	39
As of December 31, 2015	(25)	(449)	(25)	(29)	(528)
Amortization	(3)	(2)	(2)	(2)	(9)
Exchange rate changes	1	11	1	—	13
As of December 31, 2016	(27)	(440)	(26)	(31)	(524)
Net book value	9	69	9	22	109

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(1) Primarily related to intangible assets acquired by Fairway (Note 5) during the year ended December 31, 2015, with a weighted average amortization period of 16 years.

(2) Primarily related to intangible assets acquired from SOFTER (Note 4) during the year ended December 31, 2016, with a weighted average amortization period of 12 years.

Indefinite-lived intangible assets are as follows:

	Trademarks and Trade Names
	(In $ millions)
As of December 31, 2014	79
Acquisitions (Note 4)	—
Impairment loss (Note 2)	—
Exchange rate changes	(5)
As of December 31, 2015	74
Acquisitions (Note 4)	12
Impairment loss (Note 2)	—
Exchange rate changes	(1)
As of December 31, 2016	85

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In connection with the Company's annual indefinite-lived intangible assets impairment assessment, the Company did not record an impairment loss to indefinite-lived intangible assets during the nine months ended September 30, 2016 as the estimated fair value for each of the Company's indefinite-lived intangible assets exceeded the carrying amount of the underlying asset by a substantial margin (Note 2). No events or changes in circumstances occurred during the three months ended December 31, 2016 that would indicate that the carrying amount of the assets may not be fully recoverable. Accordingly, no additional impairment analysis was performed during that period.

The Company's trademarks and trade names have an indefinite life. For the year ended December 31, 2016, the Company did not renew or extend any intangible assets.

Estimated amortization expense for the succeeding five fiscal years is as follows:

	(In $ millions)
2017	14
2018	12
2019	10
2020	8
2021	8

12. Current Other Liabilities

	As of December 31,	
	2016	2015
	(In $ millions)	
Asset retirement obligations	9	10
Benefit obligations (Note 15)	31	31
Customer rebates	51	45
Derivatives (Note 22)	3	2
Environmental (Note 16)	14	11
Insurance	6	10
Interest	15	16
Restructuring (Note 18)	16	30
Salaries and benefits	97	109
Sales and use tax/foreign withholding tax payable	21	13
Other	59	53
Total	322	330

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13. Noncurrent Other Liabilities

	As of December 31,	
	2016	2015
	(In $ millions)	
Asset retirement obligations	20	26
Deferred proceeds	41	43
Deferred revenue	9	13
Environmental (Note 16)	50	61
Income taxes payable	6	7
Insurance	46	50
Other	43	47
Total	215	247

Changes in asset retirement obligations are as follows:

	Year Ended December 31,		
	2016	2015	2014
	(In $ millions)		
Balance at beginning of year	36	37	47
Additions[1]	2	—	4
Accretion	1	1	1
Payments	(10)	(4)	(8)
Revisions to cash flow estimates[2]	—	2	(7)
Exchange rate changes	—	—	—
Balance at end of year	29	36	37

(1) Primarily relates to sites which management no longer considers to have an indeterminate life.

(2) Primarily relates to revisions to the estimated cost and timing of future obligations.

Included in the asset retirement obligations for the years ended December 31, 2016 and 2015 is $10 million and $10 million, respectively, related to indemnifications received for a business acquired in 2005. The corresponding $10 million receivable is included in noncurrent Other assets in the consolidated balance sheet as of December 31, 2016.

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14. Debt

	As of December 31, 2016	2015
	(In $ millions)	
Short-Term Borrowings and Current Installments of Long-Term Debt - Third Party and Affiliates		
Current installments of long-term debt	27	56
Short-term borrowings, including amounts due to affiliates[1]	68	52
Short-term SOFTER bank loans (Note 4)[2]	23	—
Revolving credit facility[3]	—	350
Accounts receivable securitization facility[4]	—	55
Total	118	513

(1) The weighted average interest rate was 3.1% and 3.3% as of December 31, 2016 and 2015, respectively.
(2) The weighted average interest rate was 1.2% as of December 31, 2016.
(3) The weighted average interest rate was 1.8% as of December 31, 2015.
(4) The weighted average interest rate was 0.8% as of December 31, 2015.

	As of December 31, 2016	2015
	(In $ millions)	
Long-Term Debt		
Senior credit facilities - Term C-2 loan due 2016[1]	—	30
Senior credit facilities - Term C-3 loan due 2018[2]	—	878
Senior unsecured term loan due 2021[3]	500	—
Senior unsecured notes due 2019, interest rate of 3.250%	316	327
Senior unsecured notes due 2021, interest rate of 5.875%	400	400
Senior unsecured notes due 2022, interest rate of 4.625%	500	500
Senior unsecured notes due 2023, interest rate of 1.125%	788	—
Pollution control and industrial revenue bonds due at various dates through 2030, interest rates ranging from 5.70% to 6.70%	—	169
Pollution control and industrial revenue bonds due at various dates through 2030, interest rates ranging from 4.05% to 5.00%	170	—
SOFTER bank loans due at various dates through 2021 (Note 4)[4]	47	—
Obligations under capital leases due at various dates through 2054	217	238
Subtotal	2,938	2,542
Unamortized debt issuance costs[5]	(21)	(18)
Current installments of long-term debt	(27)	(56)
Total	2,890	2,468

(1) The margin for borrowings under the Term C-2 loan facility was 2.0% above the Euro Interbank Offered Rate ("EURIBOR").
(2) The margin for borrowings under the Term C-3 loan facility was 2.25% above LIBOR (for US dollars) and 2.25% above EURIBOR (for Euros), as applicable.
(3) The margin for borrowings under the senior unsecured term loan due 2021 was 1.5% above LIBOR at current Celanese credit ratings.
(4) The weighted average interest rate was 1.6% as of December 31, 2016.

(5) Related to the Company's long-term debt, excluding obligations under capital leases.

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Senior Credit Facilities

On July 15, 2016, Celanese, Celanese US and certain subsidiaries entered into a new senior credit agreement (the "New Credit Agreement") consisting of a $500 million senior unsecured term loan and a $1.0 billion senior unsecured revolving credit facility (with a letter of credit sublimit), each maturing in 2021. The proceeds from the new senior unsecured term loan and $409 million of borrowings under the new senior unsecured revolving credit facility were used to repay the Company's Term C-2 and C-3 loans under its previous senior secured credit facilities. The New Credit Agreement is guaranteed by Celanese, Celanese US and substantially all of its domestic subsidiaries ("the Subsidiary Guarantors").

The Company's debt balances and amounts available for borrowing under its senior unsecured revolving credit facility are as follows:

	As of December 31, 2016 (In $ millions)
Revolving Credit Facility	
Borrowings outstanding[1]	—
Letters of credit issued	—
Available for borrowing[2]	1,000

(1) The Company borrowed $409 million and repaid $411 million under its new senior unsecured revolving credit facility during the year ended December 31, 2016. The Company borrowed $245 million and repaid $595 million under its previous secured revolving credit facility during the year ended December 31, 2016.

(2) The margin for borrowings under the senior unsecured revolving credit facility was 1.5% above LIBOR at current Company credit ratings.

Senior Notes

The Company has outstanding senior unsecured notes, issued in public offerings registered under the Securities Act of 1933 ("Securities Act"), as amended (collectively, the "Senior Notes"). The Senior Notes were issued by Celanese US and are guaranteed on a senior unsecured basis by Celanese and the Subsidiary Guarantors. Celanese US may redeem some or all of each of the Senior Notes, prior to their respective maturity dates, at a redemption price of 100% of the principal amount, plus a "make-whole" premium as specified in the applicable indenture, plus accrued and unpaid interest, if any, to the redemption date.

On September 26, 2016, Celanese US completed an offering of €750 million in principal amount of 1.125% senior unsecured notes due September 26, 2023 (the "1.125% Notes") in a public offering registered under the Securities Act. The 1.125% Notes were issued under a base indenture dated May 6, 2011. The 1.125% Notes were issued at a discount to par at a price of 99.713%, which is being amortized to Interest expense in the consolidated statements of operations over the term of the 1.125% Notes. Net proceeds from the sale of the 1.125% Notes were used to repay $411 million of outstanding borrowings under the new senior unsecured revolving credit facility and for general corporate purposes. Commencing June 26, 2023 through the redemption date, September 26, 2023, Celanese US may redeem some or all of the 1.125% Notes at any time and from time to time at a redemption price of 100% of the principal amount, plus accrued and unpaid interest, if any, to the redemption date.

In October 2014, Celanese US redeemed its $600 million of principal amount of 6.625% unsecured senior notes due 2018 ("6.625% Notes") at a redemption price of 103.313% of the face amount for a total principal and premium payment of $620 million plus accrued interest of $20 million. Proceeds from the issuance of €300 million in principal amount of 3.250% senior unsecured notes due October 15, 2019 were used to partially fund the redemption of the 6.625% Notes, as well as cash on hand. The Company recognized a loss on the extinguishment of the 6.625% Notes comprised of the redemption premium of $20 million and accelerated amortization of deferred financing costs of $4 million, which were included in Refinancing expense in the consolidated statement of operations for the year ended December 31, 2014.

SOFTER Bank Loans

In January 2017, the Company repaid $69 million of the $70 million SOFTER bank loans outstanding at December 31, 2016 with cash on hand.

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Pollution Control and Industrial Revenue Bonds

On March 3, 2016, the State of Wisconsin Public Finance Authority completed an offering of pollution control and industrial revenue bonds, the proceeds of which were loaned to Celanese US and used to repay the pollution control and industrial revenue bonds previously issued for the benefit of the Company.

Accounts Receivables Securitization Facility

The Company has a US accounts receivable securitization facility involving receivables of certain of its domestic subsidiaries of the Company transferred to a wholly-owned, "bankruptcy remote" special purpose subsidiary of the Company ("SPE"). The securitization facility, which permits cash borrowings and letters of credit, was scheduled to expire on August 28, 2016. On July 8, 2016, certain of the Company's subsidiaries entered into an amendment of the accounts receivable securitization facility, extending its maturity to July 2019 and decreasing the available amount to $120 million. All of the SPE's assets have been pledged to the administrative agent in support of the SPE's obligations under the facility.

The Company's debt balances and amounts available for borrowing under its securitization facility are as follows:

	As of December 31, 2016 (In $ millions)
Accounts Receivables Securitization Facility	
Borrowings outstanding[1]	—
Letters of credit issued	52
Available for borrowing	52
Total borrowing base	104
Maximum borrowing base[2]	120

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[1] The Company repaid $55 million during the year ended December 31, 2016.

[2] Outstanding accounts receivable transferred to the SPE was $148 million.

Principal payments scheduled to be made on the Company's debt, including short-term borrowings, are as follows:

	(In $ millions)
2017	118
2018	62
2019	407
2020	87
2021	804
Thereafter	1,551
Total	3,029

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Net deferred financing costs are as follows:

	(In $ millions)
As of December 31, 2013	27
Financing costs deferred(1)	10
Accelerated amortization due to refinancing activity(2)	(5)
Amortization	(5)
As of December 31, 2014(3)	27
Financing costs deferred	—
Accelerated amortization due to refinancing activity	—
Amortization	(5)
As of December 31, 2015(3)	22
Financing costs deferred(4)	13
Accelerated amortization due to refinancing activity(5)	(3)
Amortization	(5)
As of December 31, 2016(3)	27

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(1) Includes $6 million related to the issuance of the 3.250% Notes and $4 million related to the September 2014 amendment to the Celanese US existing senior secured credit facilities.

(2) Includes $4 million related to the 6.625% Notes redemption and $1 million related to the Term C-2 loan facility conversion.

(3) Includes $6 million, $4 million and $5 million as of December 31, 2016, 2015 and 2014, respectively, related to the Company's revolving credit facility and accounts receivables securitization facility, which are included in noncurrent Other assets in the consolidated balance sheets.

(4) Includes $5 million, $6 million and $2 million related to the New Credit Agreement, the 1.125% Notes and the pollution control and industrial revenue bonds, respectively, all of which are being amortized through the term of the respective financing arrangement.

(5) Includes $2 million and $1 million related to the senior secured credit facilities and the pollution control and industrial revenue bonds, respectively, which are included in Refinancing expense in the consolidated statement of operations during the year ended December 31, 2016.

Covenants

The Company's material financing arrangements contain customary covenants, including the maintenance of certain financial ratios, events of default and change of control provisions. Failure to comply with these covenants, or the occurrence of any other event of default, could result in acceleration of the borrowings and other financial obligations. The Company is in compliance with all of the covenants related to its debt agreements as of December 31, 2016.

15. Benefit Obligations

Pension Obligations

The Company sponsors defined benefit pension plans in North America, Europe and Asia. Independent trusts or insurance companies administer the majority of these plans. Pension obligations are established for benefits payable in the form of retirement, disability and surviving dependent pensions. The commitments result from participation in defined contribution and defined benefit plans, primarily in the US. Benefits are dependent on years of service and the employee's compensation. Supplemental retirement benefits provided to certain employees are nonqualified for US tax purposes. Separate nonqualified trusts have been established for certain US nonqualified plan obligations. Pension costs under the Company's retirement plans are actuarially determined.

In October 2014, the Company offered a limited-time, voluntary program to certain participants of the Company's US qualified defined benefit pension plan with a vested benefit who terminated from the Company on or before May 31, 2014. The limited-time opportunity ended in November 2014 and included an offer of a single lump sum payment in December 2014 or to begin

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monthly annuity payments, regardless of age, or to continue to defer benefits until retirement age. If an election was not made by the eligible participant, the participant will begin receiving payments when otherwise eligible under the terms of the US qualified defined benefit pension plan. The Company made lump sum payments under this program of $143 million in December 2014 using trust assets of the US qualified defined benefit pension plan. These actions resulted in the recognition of a settlement gain of $78 million in the consolidated statements of operations for the year ended December 31, 2014.

Effective June 2014, the Company's US qualified defined benefit plan was amended and benefits offered to all current union participants of the Cash Balance Plan (hired on or after January 1, 2001) at the Company's Narrows, Virginia facility have been frozen and the US qualified defined benefit plan was closed to future union participants at the facility. Accumulated benefits earned and service rendered through May 2014 under the Plan provisions for the Cash Balance Plan Participants will continue to be considered for purposes of determining retirement benefits. Effective May 2014, the Company's US qualified defined benefit plan was amended and benefits offered to all current union participants of the Flat Rate Plan at the Company's Narrows, Virginia facility have been frozen and the US qualified defined benefit plan was closed to future union participants at the facility. Accumulated benefits earned and service rendered through December 2014 under the Plan provisions for the Flat Rate Plan Participants will continue to be considered for purposes of determining retirement benefits and eligibility for early retirement. These actions did not result in a curtailment gain or loss as the projected benefit obligation does not rely on salary assumptions.

Effective December 2013, benefits offered to all US non-union eligible employees in the Company's US qualified defined benefit pension plan have been frozen and the US qualified defined benefit pension plan was closed to new participants. Accumulated benefits earned and service rendered through December 31, 2013 under the US qualified defined benefit pension plan provisions will continue to be considered for purposes of determining retirement benefits and eligibility for early retirement.

The Company participates in a multiemployer defined benefit plan and a multiemployer defined contribution plan in Germany covering certain employees. The Company's contributions to the multiemployer defined benefit plan are based on specified percentages of employee contributions as outlined in a works council agreement, covering all German entity employees hired prior to January 1, 2012. As of January 1, 2012, the multiemployer defined benefit pension plan described above was closed to new employees. Qualifying employees hired in Germany after December 31, 2011 are covered by a multiemployer defined contribution plan. The Company's contributions to the multiemployer defined contribution plan are based on specified percentages of employee contributions, similar to the multiemployer defined benefit plan, but at a lower rate.

Statutory regulations and the works council agreement require the contributions to fully fund the multiemployer plans. The risks of participating in the multiemployer plans are different from single-employer plans in the following aspects:

- Assets contributed to the multiemployer plan by one employer may be used to provide benefits to employees of other participating employers.
- If a participating employer stops contributing to the plan, any underfunding may be borne by the remaining participants, especially since regulations strictly enforce funding requirements.
- If the Company chooses to stop participating in the multiemployer plan, the Company may be required to pay the plan an amount based on the underfunded status of the plan, referred to as the withdrawal liability.

Based on the 2016 unaudited and 2015 audited multiemployer defined benefit plan's financial statements, the plan is 100% funded in 2016, 2015 and 2014. The number of employees covered by the Company's multiemployer defined benefit plan remained relatively stable year over year from 2014 to 2016, resulting in minimal changes to employer contributions. Participation in the German multiemployer defined benefit plan is not considered individually significant to the Company.

Contributions made by the Company to the German multiemployer plan are as follows:

	Year Ended December 31,		
	2016	2015	2014
	(In $ millions)		

Multiemployer defined benefit plan	7	6	8

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Other Postretirement Obligations

Certain retired employees receive postretirement health care and life insurance benefits under plans sponsored by the Company, which has the right to modify or terminate these plans at any time. The cost for coverage is shared between the Company and the retiree. The cost of providing retiree health care and life insurance benefits is actuarially determined and accrued over the service period of the active employee group. The Company's policy is to fund benefits as claims and premiums are paid. The US postretirement health care plan was closed to new participants effective January 1, 2006.

In November 2013, the Company announced it would amend its primary US postretirement health care plan to (a) eliminate eligibility for all current and future US non-union employees; (b) terminate its US postretirement health care plan on December 31, 2014 for all US participants; and (c) offer certain eligible US participants a lump-sum buyout payment if they irrevocably waive all future benefits under the US postretirement health care plan and end their participation before December 31, 2014. These actions generated a prior service credit of $92 million, which was amortized ratably into the consolidated statements of operations from November 1, 2013 through December 31, 2014. Effective March 2014, the Company eliminated eligibility in its US postretirement health care plan for all current and future employees represented by the bargaining unit at the Company's Narrows, Virginia facility. These actions generated a prior service credit of $5 million, which was amortized ratably into the consolidated statements of operations from April 1, 2014 through December 31, 2014.

The Company recognized $84 million of prior service credit amortization and made $40 million in lump-sum buyout payments as of December 31, 2014.

Postemployment Obligations

The Company provides benefits to certain employees after employment but prior to retirement, including severance and disability-related benefits offered pursuant to ongoing benefit arrangements. The cost of providing postemployment benefits is actuarially determined and recorded when the obligation is probable of occurring and can be reasonably estimated.

Postemployment obligations are as follows:

	As of December 31,	
	2016	2015
	(In $ millions)	
Postemployment benefits	9	11

Defined Contribution Plans

The Company sponsors various defined contribution plans in North America, Europe and Asia covering certain employees. Employees may contribute to these plans and the Company will match these contributions in varying amounts. The Company's matching contribution to the defined contribution plans are based on specified percentages of employee contributions.

Beginning in 2014, the Company took the following actions as it relates to the US defined contribution plan:

- Increased its employer match for those employees participating in the US defined contribution plan;
- Added an annual retirement contribution for US employees who are employed as of December 31st each year (or have died during that year), regardless of whether the employee contributes to the US defined contribution plan; and
- For certain eligible US employees, provides an incremental retirement contribution through 2017, based on years of service and specified percentages of eligible compensation.

The amount of costs recognized for the Company's defined contribution plans are as follows:

	Year Ended December 31,		
	2016	2015	2014
	(In $ millions)		
Defined contribution plans	43	44	40

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Summarized information on the Company's pension and postretirement benefit plans is as follows:

	Pension Benefits As of December 31,		Postretirement Benefits As of December 31,	
	2016	2015	2016	2015
	(In $ millions)			
Change in Projected Benefit Obligation				
Projected benefit obligation as of beginning of period	3,635	3,915	66	85
Service cost	8	12	—	1
Interest cost	113	139	2	3
Participant contributions	—	—	—	1
Plan amendments	—	—	—	(6)
Net actuarial (gain) loss[1]	102	(141)	3	(8)
Settlements	(1)	—	—	—
Benefits paid	(232)	(234)	(4)	(5)
Federal subsidy on Medicare Part D	—	—	—	—
Curtailments	—	(1)	—	—
Special termination benefits	3	2	—	—
Exchange rate changes	(18)	(65)	—	(5)
Other	—	8	—	—
Projected benefit obligation as of end of period	3,610	3,635	67	66
Change in Plan Assets				
Fair value of plan assets as of beginning of period	2,508	2,789	—	—
Actual return on plan assets	177	(67)	—	—
Employer contributions	346	59	4	4
Participant contributions	—	—	—	1
Settlements	(1)	—	—	—
Benefits paid[2]	(232)	(234)	(4)	(5)
Exchange rate changes	(14)	(39)	—	—
Fair value of plan assets as of end of period	2,784	2,508	—	—
Funded status as of end of period	(826)	(1,127)	(67)	(66)
Amounts Recognized in the Consolidated Balance Sheets Consist of:				
Noncurrent Other assets	22	16	—	—
Current Other liabilities	(25)	(25)	(5)	(4)
Benefit obligations	(823)	(1,118)	(62)	(62)
Net amount recognized	(826)	(1,127)	(67)	(66)
Amounts Recognized in Accumulated Other Comprehensive Income Consist of:				
Net actuarial (gain) loss[3]	18	16	—	—
Prior service (benefit) cost	(1)	(1)	(1)	(4)
Net amount recognized[4]	17	15	(1)	(4)

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(1) Primarily relates to change in discount rates.

(2) Includes benefit payments to nonqualified pension plans of $22 million and $22 million as of December 31, 2016 and 2015, respectively.

(3) Relates to the pension plans of the Company's equity method investments.

(4) Amount shown net of an income tax benefit of $4 million and $3 million as of December 31, 2016 and 2015, respectively, in the consolidated statements of equity (Note 17).

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The percentage of US and international projected benefit obligation at the end of the period is as follows:

	Pension Benefits As of December 31,		Postretirement Benefits As of December 31,	
	2016	2015	2016	2015
	(In percentages)			
US plans	85	86	57	61
International plans	15	14	43	39
Total	100	100	100	100

The percentage of US and international fair value of plan assets at the end of the period is as follows:

	Pension Benefits As of December 31,	
	2016	2015
	(In percentages)	
US plans	88	87
International plans	12	13
Total	100	100

Pension plans with projected benefit obligations in excess of plan assets are as follows:

	As of December 31,	
	2016	2015
	(In $ millions)	
Projected benefit obligation	3,559	3,588
Fair value of plan assets	2,711	2,445

Included in the above table are pension plans with accumulated benefit obligations in excess of plan assets as follows:

	As of December 31,	
	2016	2015
	(In $ millions)	
Accumulated benefit obligation	3,538	3,570
Fair value of plan assets	2,708	2,442

The accumulated benefit obligation for all defined benefit pension plans is as follows:

	As of December 31,	
	2016	2015
	(In $ millions)	
Accumulated benefit obligation	3,591	3,619

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Beginning in 2016, the Company adopted a full yield curve approach to estimate the service and interest cost components of net periodic benefit cost (Note 2). The Company's adoption of the full yield curve approach reduced 2016 service and interest cost by $29 million as compared to the previous single weighted average discount rate method.

The components of net periodic benefit cost are as follows:

	Pension Benefits Year Ended December 31,			Postretirement Benefits Year Ended December 31,		
	2016	2015	2014	2016	2015	2014
	(In $ millions)					
Service cost	8	12	11	—	1	1
Interest cost	113	139	168	2	3	4
Expected return on plan assets	(177)	(209)	(214)	—	—	—
Amortization of prior service cost / (credit)	—	—	—	(3)	—	(83)
Recognized actuarial (gain) loss	101 [1]	134 [2]	339 [3]	2	(7)	11
Curtailment (gain) loss	—	(3)	—	—	—	—
Settlement (gain) loss	—	—	(78)	—	—	—
Special termination benefit	3	2	—	—	—	—
Total	48	75	226	1	(3)	(67)

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(1) Includes a gain of $48 million reflecting the incorporation of the RP-2016 mortality tables into the actuarial assumptions for the US pension plans.

(2) Includes a gain of $62 million reflecting the incorporation of the RP-2015 mortality tables into the actuarial assumptions for the US pension plans.

(3) Includes a loss of $53 million reflecting the incorporation of the RP-2014 mortality tables into the actuarial assumptions for the US pension plans.

Amortization of Accumulated other comprehensive income (loss), net into net periodic benefit cost in 2017 is expected to be as follows:

	Pension Benefits	Postretirement Benefits
	(In $ millions)	
Prior service cost	—	(2)

The Company maintains nonqualified pension plans funded with nonqualified trusts for certain US employees as follows:

	As of December 31,	
	2016	2015
	(In $ millions)	
Nonqualified Trust Assets		
Marketable securities, at fair value	30	30
Noncurrent Other assets, consisting of insurance contracts	49	55
Nonqualified Pension Obligations		
Current Other liabilities	22	22
Benefit obligations	241	246

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Expense relating to the nonqualified pension plans included in net periodic benefit cost, excluding returns on the assets held by the nonqualified trusts, is as follows:

	Year Ended December 31,		
	2016	2015	2014
	(In $ millions)		
Total	18	— [(1)]	43

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(1) Actuarial gain offset interest cost.

Valuation

The principal weighted average assumptions used to determine benefit obligation are as follows:

	Pension Benefits As of December 31,		Postretirement Benefits As of December 31,	
	2016	2015	2016	2015
	(In percentages)			
Discount Rate Obligations				
US plans	3.9	4.2	3.8	4.0
International plans	2.1	2.6	3.3	3.6
Combined	3.7	4.0	3.4	3.7
Rate of Compensation Increase				
US plans	N/A	N/A		
International plans	2.8	2.7		
Combined	2.8	2.7		

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The principal weighted average assumptions used to determine net periodic benefit cost are as follows:

	Pension Benefits Year Ended December 31,			Postretirement Benefits Year Ended December 31,		
	2016	2015	2014	2016	2015	2014
	(In percentages)					
Discount Rate Obligations						
US plans	4.2	3.9	4.7	4.0	3.7	4.3
International plans	2.6	2.4	3.7	3.6	3.5	4.5
Combined	4.0	3.7	4.6	3.9	3.6	4.4
Discount Rate Service Cost[(1)]						
US plans	4.5	3.9	4.7	4.2	3.7	4.3
International plans	3.1	2.4	3.7	3.8	3.5	4.5
Combined	3.1	3.7	4.6	3.8	3.6	4.4
Discount Rate Interest Cost[(1)]						
US plans	3.4	3.9	4.7	3.1	3.7	4.3
International plans	2.2	2.4	3.7	3.1	3.5	4.5
Combined	3.2	3.7	4.6	3.1	3.6	4.4
Expected Return on Plan Assets						
US plans	7.5	8.0	8.5			
International plans	6.1	6.0	6.2			
Combined	7.3	7.8	8.2			
Rate of Compensation Increase						
US plans	N/A	N/A	3.0			
International plans	2.7	2.8	2.8			
Combined	2.7	2.8	3.0			

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(1) Weighted-average discount rates in 2016 reflect the adoption of the full yield curve approach.

The Company's health care cost trend assumptions for US postretirement medical plan's net periodic benefit cost are as follows:

	As of December 31,		
	2016	2015	2014
	(In percentages, except year)		
Health care cost trend rate assumed for next year	9.5	10.0	7.0
Health care cost trend ultimate rate	5.0	5.0	5.0
Health care cost trend ultimate rate year	2026	2026	2020

Assumed health care cost trend rates for US postretirement medical plans have a significant effect on the amounts reported for the health care plans.

The impact of a one percentage point change in the assumed health care cost trend is as follows:

	Trend Rate Change	
	Decreases 1%	Increases 1%
	(In $ millions)	
Postretirement obligations	2	2
Service and interest cost	—	—

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Plan Assets

The weighted average target asset allocations for the Company's pension plans in 2016 are as follows:

	US Plans	International Plans
	(In percentages)	
Bonds - domestic to plans	54	58
Equities - domestic to plans	26	16
Equities - international to plans	20	—
Other	—	26
Total	100	100

On average, the actual return on the US qualified defined pension plans' assets over the long-term (20 years) has exceeded the expected long-term rate of asset return assumption. The US qualified defined benefit plans' actual return on assets for the year ended December 31, 2016 was 6.9% versus an expected long-term rate of asset return assumption of 7.5%. The expected long-term rate of asset return assumption used to determine 2017 net periodic benefit cost is 7.5% for the US qualified defined benefit plans.

The Company's defined benefit plan assets are measured at fair value on a recurring basis (Note 2) as follows:

Cash and Cash Equivalents: Foreign and domestic currencies as well as short term securities are valued at cost plus accrued interest, which approximates fair value.

Equity securities, treasuries and corporate debt: Valued at the closing price reported on the active market in which the individual securities are traded. Automated quotes are provided by multiple pricing services and validated by the plan custodian. These securities are traded on exchanges as well as in the over the counter market.

Registered Investment Companies: Composed of various mutual funds and other investment companies whose diversified portfolio is comprised of foreign and domestic equities, fixed income securities, and short term investments. Investments are valued at the net asset value of units held by the plan at year-end.

Common/Collective Trusts: Composed of various funds whose diversified portfolio is comprised of foreign and domestic equities, fixed income securities, and short term investments. Investments are valued at the net asset value of units held by the plan at year-end.

Derivatives: Derivative financial instruments are valued in the market using discounted cash flow techniques. These techniques incorporate Level 1 and Level 2 fair value measurement inputs such as interest rates and foreign currency exchange rates. These market inputs are utilized in the discounted cash flow calculation considering the instrument's term, notional amount, discount rate and credit risk. Significant inputs to the derivative valuation for interest rate swaps, foreign currency forwards and swaps, and options are observable in the active markets and are classified as Level 2 in the fair value measurement hierarchy.

Mortgage backed securities: Fair value is estimated based on valuations obtained from third-party pricing services for identical or comparable assets. Mortgage Backed Securities are traded in the over the counter broker/dealer market.

Insurance contracts: Valued at contributions made, plus earnings, less participant withdrawals and administrative expenses, which approximates fair value.

Short-term investment funds: Composed of various funds whose portfolio is comprised of foreign and domestic currencies as well as short-term securities. Investments are valued at the net asset value of units held by the plan at year-end.

Other: Composed of real estate investment trust common stock valued at closing price as reported on the active market in which the individual securities are traded.

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	Fair Value Measurement					
	Quoted Prices in Active Markets for Identical Assets (Level 1)		Significant Other Observable Inputs (Level 2)		Total	
	As of December 31,					
	2016	2015	2016	2015	2016	2015
	(In $ millions)					
Assets						
Cash and cash equivalents	2	4	—	—	2	4
Derivatives						
Swaps	—	—	2	25	2	25
Other	—	—	—	—	—	—
Equity securities						
US companies	260	241	—	—	260	241
International companies	345	327	—	—	345	327
Fixed income						
Corporate debt	—	—	798	692	798	692
Treasuries, other debt	37	25	793	742	830	767
Mortgage backed securities	—	—	7	5	7	5
Insurance contracts	—	—	31	32	31	32
Other	24	18	—	—	24	18
Total investments, at fair value[(1)]	668	615	1,631	1,496	2,299	2,111
Liabilities						
Derivatives						
Swaps	—	—	2	25	2	25
Other	—	—	1	—	1	—
Total liabilities	—	—	3	25	3	25
Total net assets[(2)]	668	615	1,628	1,471	2,296	2,086

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(1) In accordance with ASU 2015-07 (Note 2), certain investments that are measured at fair value using the NAV per share practical expedient have not been classified in the fair value hierarchy. Total investments, at fair value, for the year ended December 31, 2016 excludes investments in common/collective trusts, registered investment companies and short-term investment funds with fair values of $195 million, $134 million and $149 million, respectively. Total investments, at fair value, for the year ended December 31, 2015 excludes investments in common/collective trusts, registered investment companies and short-term investment funds with fair values of $251 million, $117 million and $43 million, respectively.

(2) Total net assets excludes non-financial plan receivables and payables of $20 million and $10 million, respectively, as of December 31, 2016 and $25 million and $14 million, respectively, as of December 31, 2015. Non-financial items include due to/from broker, interest receivables and accrued expenses.

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Benefit obligation funding is as follows:

	Total Expected 2017
	(In $ millions)
Cash contributions to defined benefit pension plans	20
Benefit payments to nonqualified pension plans	22
Benefit payments to other postretirement benefit plans	4

The Company's estimates of its US defined benefit pension plan contributions reflect the provisions of the Pension Protection Act of 2006.

Pension and postretirement benefits expected to be paid are as follows:

	Pension Benefit Payments[1]	Company Portion of Postretirement Benefit Cost[2]
	(In $ millions)	
2017	233	5
2018	231	5
2019	229	4
2020	228	4
2021	225	4
2022-2026	1,093	19

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(1) Payments are expected to be made primarily from plan assets.

(2) Payments are expected to be made primarily from Company assets.

16. Environmental

The Company is subject to environmental laws and regulations worldwide that impose limitations on the discharge of pollutants into the air and water, establish standards for the treatment, storage and disposal of solid and hazardous wastes, and impose record keeping and notification requirements. Failure to timely comply with these laws and regulations may expose the Company to penalties. The Company believes that it is in substantial compliance with all applicable environmental laws and regulations and engages in an on going process of updating its controls to mitigate compliance risks. The Company is also subject to retained environmental obligations specified in various contractual agreements arising from the divestiture of certain businesses by the Company or one of its predecessor companies.

The components of environmental remediation reserves are as follows:

	As of December 31,	
	2016	2015
	(In $ millions)	
Demerger obligations (Note 24)	18	22
Divestiture obligations (Note 24)	16	17
Active sites	16	18
US Superfund sites	11	13
Other environmental remediation reserves	3	2
Total	64	72

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Remediation

Due to its industrial history and through retained contractual and legal obligations, the Company has the obligation to remediate specific areas on its own sites as well as on divested, demerger, orphan or US Superfund sites (as defined below). In addition, as part of the demerger agreement between the Company and Hoechst AG ("Hoechst"), a specified portion of the responsibility for environmental liabilities from a number of Hoechst divestitures was transferred to the Company (Note 24). The Company provides for such obligations when the event of loss is probable and reasonably estimable. The Company believes that environmental remediation costs will not have a material adverse effect on the financial position of the Company, but may have a material adverse effect on the results of operations or cash flows in any given period.

The Company did not record any insurance recoveries during 2016 or have any receivables for insurance recoveries related to these matters as of December 31, 2016. As of December 31, 2016 and 2015, there were receivables of $2 million and $4 million, respectively, from the former owner of the Company's Spondon, Derby, United Kingdom acetate flake, tow and film business, which was acquired in 2007.

German InfraServ Entities

The Company's InfraServ Entities (Note 9) are liable for any residual contamination and other pollution because they own the real estate on which the individual facilities operate. In addition, Hoechst, and its legal successors, as the responsible party under German public law, is liable to third parties for all environmental damage that occurred while it was still the owner of the plants and real estate (Note 24). The contribution agreements entered into in 1997 between Hoechst and the respective operating companies, as part of the divestiture of these companies, provide that the operating companies will indemnify Hoechst, and its legal successors, against environmental liabilities resulting from the transferred businesses. Additionally, the InfraServ Entities have agreed to indemnify Hoechst, and its legal successors, against any environmental liability arising out of or in connection with environmental pollution of any site.

The InfraServ partnership agreements provide that, as between the partners, each partner is responsible for any contamination caused predominantly by such partner. Any liability, which cannot be attributed to an InfraServ partner and for which no third party is responsible, is required to be borne by the InfraServ partnership. Also, under lease agreements entered into by an InfraServ partner as landlord, the tenants agreed to pay certain remediation costs on a pro rata basis.

If an InfraServ partner defaults on its respective indemnification obligations to eliminate residual contamination, the owners of the remaining participation in the InfraServ companies have agreed to fund such liabilities, subject to a number of limitations. To the extent that any liabilities are not satisfied by either the InfraServ Entities or their owners, these liabilities are to be borne by the Company in accordance with the demerger agreement. However, Hoechst, and its legal successors, will reimburse the Company for two-thirds of any such costs. Likewise, in certain circumstances the Company could be responsible for the elimination of residual contamination on several sites that were not transferred to InfraServ companies, in which case Hoechst, and its legal successors, must also reimburse the Company for two-thirds of any costs so incurred.

The Company's ownership interest and environmental liability participation percentages for such liabilities, which cannot be attributed to an InfraServ partner are as follows:

	As of December 31, 2016		
	Ownership	Liability	Reserves[1]
	(In percentages)		(In $ millions)
InfraServ GmbH & Co. Gendorf KG	39	10	10
InfraServ GmbH & Co. Hoechst KG	32	40	62
InfraServ GmbH & Co. Knapsack KG	27	22	1

(1) Gross reserves maintained by the respective InfraServ entity.

US Superfund Sites

In the US, the Company may be subject to substantial claims brought by US federal or state regulatory agencies or private individuals pursuant to statutory authority or common law. In particular, the Company has a potential liability under the US Federal Comprehensive Environmental Response, Compensation and Liability Act of 1980, as amended, and related state laws (collectively referred to as "Superfund") for investigation and cleanup costs at certain sites. At most of these sites, numerous companies, including the Company, or one of its predecessor companies, have been notified that the US Environmental

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Protection Agency ("EPA"), state governing bodies or private individuals consider such companies to be potentially responsible parties ("PRP") under Superfund or related laws. The proceedings relating to these sites are in various stages. The cleanup process has not been completed at most sites, and the status of the insurance coverage for some of these proceedings is uncertain. Consequently, the Company cannot accurately determine its ultimate liability for investigation or cleanup costs at these sites.

As events progress at each site for which it has been named a PRP, the Company accrues, as appropriate, a liability for site cleanup. Such liabilities include all costs that are probable and can be reasonably estimated. In establishing these liabilities, the Company considers its shipment of waste to a site, its percentage of total waste shipped to the site, the types of wastes involved, the conclusions of any studies, the magnitude of any remedial actions that may be necessary and the number and viability of other PRPs. Often the Company joins with other PRPs to sign joint defense agreements that settle, among PRPs, each party's percentage allocation of costs at the site. Although the ultimate liability may differ from the estimate, the Company routinely reviews the liabilities and revises the estimate, as appropriate, based on the most current information available.

One such site is the Diamond Alkali Superfund Site, which is comprised of a number of sub-sites, including the Lower Passaic River Study Area, which is the lower 17-mile stretch of the Passaic River ("Lower Passaic River Site"), and the Newark Bay Area. The Company and 70 other companies are parties to a May 2007 Administrative Order on Consent with the EPA to perform a Remedial Investigation/Feasibility Study ("RI/FS") at the Lower Passaic River Site in order to identify the levels of contaminants and potential cleanup actions, including the potential migration of contaminants between the Lower Passaic River Site and the Newark Bay Area. Work on the RI/FS is ongoing, with a goal to complete it in 2018.

On March 3, 2016, the EPA issued its final Record of Decision concerning the remediation of the lower 8.3 miles of the Lower Passaic River Site ("Lower 8.3 Miles"). The Company owned and/or operated facilities in the vicinity of the Lower 8.3 Miles, but has found no evidence that it contributed any of the primary contaminants of concern to the Passaic River. Pursuant to the EPA's Record of Decision, the Lower 8.3 Miles must be dredged bank to bank and an engineered cap must be installed at an EPA estimated cost of approximately $1.4 billion. The Company is vigorously defending this matter and currently believes that its ultimate allocable share of the cleanup costs with respect to the Lower Passaic River Site, estimated at less than 1%, will not be material.

17. Stockholders' Equity

Common Stock

The Company's Board of Directors follows a policy of declaring, subject to legally available funds, a quarterly cash dividend on each share of the Company's Common Stock, unless the Company's Board of Directors, in its sole discretion, determines otherwise.

The Company's Board of Directors approved increases in the Company's Common Stock cash dividend rates as follows:

	Increase	Quarterly Common Stock Cash Dividend	Annual Common Stock Cash Dividend	Effective Date
	(In percentages)	(In $ per share)		
April 2014	39	0.25	1.00	May 2014
April 2015	20	0.30	1.20	May 2015
April 2016	20	0.36	1.44	May 2016

On February 9, 2017, the Company declared a quarterly cash dividend of $0.36 per share on its Common Stock amounting to $51 million. The cash dividend is for the period from November 1, 2016 to January 31, 2017 and will be paid on March 3, 2017 to holders of record as of February 21, 2017.

Treasury Stock

The Company's Board of Directors authorizes repurchases of Common Stock from time to time. These authorizations give management discretion in determining the timing and conditions under which shares may be repurchased. This repurchase program does not have an expiration date.

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The share repurchase activity pursuant to this authorization is as follows:

	Year Ended December 31, 2016	2015	2014	Total From February 2008 Through December 31, 2016
Shares repurchased	7,034,420	6,640,601[1]	4,338,488	34,342,216
Average purchase price per share	$71.08	$ 63.31	$ 57.61	$ 53.44
Amount spent on repurchased shares (in millions)	$500	$ 420	$ 250	$ 1,835
Aggregate Board of Directors repurchase authorizations during the period (in millions)[2]	$—	$ 1,000	$ 473	$ 2,366

(1) The year ended December 31, 2015 excludes 9,264 shares withheld from an executive officer to cover statutory minimum withholding requirements for personal income taxes related to the vesting of restricted stock. Restricted stock awards are considered outstanding at the time of issuance. Accordingly, the shares withheld are treated as treasury shares.

(2) These authorizations give management discretion in determining the timing and conditions under which shares may be repurchased. This repurchase program began in February 2008 and does not have an expiration date.

The purchase of treasury stock reduces the number of shares outstanding. The repurchased shares may be used by the Company for compensation programs utilizing the Company's stock and other corporate purposes. The Company accounts for treasury stock using the cost method and includes treasury stock as a component of stockholders' equity.

Other Comprehensive Income (Loss), Net

	Year Ended December 31, 2016 Gross Amount	Income Tax (Provision) Benefit	Net Amount	2015 Gross Amount	Income Tax (Provision) Benefit	Net Amount	2014 Gross Amount	Income Tax (Provision) Benefit	Net Amount
	(In $ millions)								
Unrealized gain (loss) on marketable securities	—	—	—	—	—	—	—	1	1
Foreign currency translation	(22)	11	(11)	(193)	5	(188)	(188)	40	(148)
Gain (loss) on cash flow hedges	5	—	5	3	(1)	2	—	40	40
Pension and postretirement benefits	(5)	1	(4)	4	(1)	3	(84)	30	(54)
Total	(22)	12	(10)	(186)	3	(183)	(272)	111	(161)

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Adjustments to Accumulated other comprehensive income (loss), net, are as follows:

	Unrealized Gain (Loss) on Marketable Securities (Note 6)	Foreign Currency Translation	Gain (Loss) from Cash Flow Hedges (Note 22)	Pension and Postretirement Benefits (Note 15)	Accumulated Other Comprehensive Income (Loss), Net
	(In $ millions)				
As of December 31, 2013	—	(3)	(44)	43	(4)
Other comprehensive income (loss) before reclassifications	—	(188)	(9)	(1)	(198)
Amounts reclassified from accumulated other comprehensive income (loss)	—	—	9	(83)	(74)
Income tax (provision) benefit	1	40	40	30	111
As of December 31, 2014	1	(151)	(4)	(11)	(165)
Other comprehensive income (loss) before reclassifications	—	(193)	(2)	6	(189)
Amounts reclassified from accumulated other comprehensive income (loss)	—	—	5	(2)	3
Income tax (provision) benefit	—	5	(1)	(1)	3
As of December 31, 2015	1	(339)	(2)	(8)	(348)
Other comprehensive income (loss) before reclassifications	—	(22)	7	(3)	(18)
Amounts reclassified from accumulated other comprehensive income (loss)	—	—	(2)	(2)	(4)
Income tax (provision) benefit	—	11	—	1	12
As of December 31, 2016	1	(350)	3	(12)	(358)

18. Other (Charges) Gains, Net

	Year Ended December 31,		
	2016	2015	2014
	(In $ millions)		
Employee termination benefits (Note 4)[1]	(11)	(53)	(7)
Asset impairments	(2)	(126)	—
Other plant/office closures	—	—	2
Singapore contract termination	—	(174)	—
Commercial disputes	2	2	11
Other	—	—	9
Total	(11)	(351)	15

(1) Includes $3 million and $1 million of special termination benefits included in Benefit obligations in the consolidated balance sheet as of December 31, 2016 and 2015, respectively.

2016

During the year ended December 31, 2016, the Company recorded $11 million of employee termination benefits primarily related to the Company's ongoing efforts to align its businesses around its core value drivers.

2015

During the year ended December 31, 2015, the Company recorded $21 million of employee termination benefits related to the Company's ongoing efforts to align its businesses around its core value drivers. In addition, the Company recorded $24 million of employee termination benefits related to a 50% capacity reduction at its Lanaken, Belgium acetate tow facility (Note 4).

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In addition, during the year ended December 31, 2015, the Company recorded $6 million of employee termination benefits and $1 million of long-lived asset impairment losses related to the closure of its VAE emulsions facility in Tarragona, Spain (Note 4). In addition, the Company recorded $1 million of employee termination benefits and $1 million of long-lived asset impairment losses related to the closure of its VAE emulsions facility in Meredosia, Illinois (Note 4). The long-lived asset impairment losses related to both VAE facilities were measured at the dates of impairment to write-off the related property, plant and equipment at each facility (Note 2 and Note 4).

During the three months ended December 31, 2015, the Company determined its ethanol production unit at its acetyl facility in Nanjing, China should be assessed for impairment based on market conditions affecting demand for ethanol and downstream products, the cost to operate the unit and contractual obligations. As a result, the Company concluded that certain long-lived ethanol related assets were fully impaired. Accordingly, the Company recorded long-lived asset impairment losses, measured at the date of impairment (Note 2), of $123 million to fully write-off certain ethanol related assets. The Nanjing, China asset impairment is included in the Company's Acetyl Intermediates segment.

In December 2015, the Company made a payment terminating an existing agreement with a raw materials supplier in Singapore and recognized a $174 million charge, which reflects a discounted amount previously owed under that contract. This termination payment was determined not to have future economic benefit, and the contract's original terms substantially contributed to cumulative losses which resulted in a full impairment of the production assets in 2013. This charge is recorded in Other (charges) gains net, which is included in the Company's Acetyl Intermediates segment.

2014

During the year ended December 31, 2014, the Company received consideration of $8 million in connection with the settlement of a claim against a bankrupt supplier. The Company also recorded $12 million of damages in connection with the settlement of a claim by a raw materials supplier. These commercial dispute resolutions are included in the Acetyl Intermediates segment. In addition, the Company recovered $15 million from an arbitration award against a former utility operator at its cellulose derivatives manufacturing facility in Narrows, Virginia, which is included in the Consumer Specialties segment.

During the year ended December 31, 2014 the Company recorded $4 million of employee termination benefits related to the closure of its acetic anhydride facility in Roussillon, France and its vinyl acetate monomer ("VAM") facility in Tarragona, Spain. In addition, the Company recorded $2 million of contract termination adjustments related to the closure of its VAM facility in Tarragona, Spain.

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The changes in the restructuring reserves by business segment are as follows:

	Advanced Engineered Materials	Consumer Specialties	Industrial Specialties	Acetyl Intermediates	Other	Total
	(In $ millions)					
Employee Termination Benefits						
As of December 31, 2014	4	1	1	5	3	14
Additions	7	25	9	2	9	52
Cash payments	(4)	(12)	(4)	(5)	(3)	(28)
Other changes	(3)	—	—	—	(3)	(6)
Exchange rate changes	(1)	—	—	(1)	—	(2)
As of December 31, 2015	3	14	6	1	6	30
Additions	2	2	2	1	3	10
Cash payments	(3)	(6)	(6)	(1)	(5)	(21)
Other changes	(1)	—	—	—	(1)	(2)
Exchange rate changes	—	(1)	—	—	—	(1)
As of December 31, 2016	1	9	2	1	3	16
Other Plant/Office Closures						
As of December 31, 2014	—	—	—	7	—	7
Additions	—	—	—	—	—	—
Cash payments	—	—	—	(6)	—	(6)
Other changes	—	—	—	—	—	—
Exchange rate changes	—	—	—	(1)	—	(1)
As of December 31, 2015	—	—	—	—	—	—
Additions	—	—	—	—	—	—
Cash payments	—	—	—	—	—	—
Other changes	—	—	—	—	—	—
Exchange rate changes	—	—	—	—	—	—
As of December 31, 2016	—	—	—	—	—	—
Total	1	9	2	1	3	16

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19. Income Taxes

Income Tax Provision

Earnings (loss) from continuing operations before tax by jurisdiction are as follows:

	Year Ended December 31,		
	2016	2015	2014
	(In $ millions)		
US	326	231	534
International[1]	704	257	407
Total	1,030	488	941

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[1] Includes aggregate earnings generated by operations in Bermuda, Luxembourg, the Netherlands and Hong Kong of $621 million, $330 million and $308 million for the years ended December 31, 2016, 2015 and 2014, respectively, which have an aggregate effective income tax rate of 1.9%, 6.1% and 4.8% for each year, respectively.

The income tax provision (benefit) consists of the following:

	Year Ended December 31,		
	2016	2015	2014
	(In $ millions)		
Current			
US	(22)	28	108
International	60	152	56
Total	38	180	164
Deferred			
US	108	54	156
International	(24)	(33)	(6)
Total	84	21	150
Total	122	201	314

A reconciliation of the significant differences between the US federal statutory tax rate of 35% and the effective income tax rate on income from continuing operations is as follows:

	Year Ended December 31,		
	2016	2015	2014
	(In $ millions, except percentages)		
Income tax provision computed at US federal statutory tax rate	361	171	329
Change in valuation allowance	(18)	124	49
Equity income and dividends	(60)	(33)	(50)
(Income) expense not resulting in tax impact, net	(152)	(32)	(34)
US tax effect of foreign earnings and dividends	302	15	49
Foreign tax credits	(293)	(4)	(34)
Other foreign tax rate differentials	(44)	(41)	(33)
Tax-deductible interest on foreign equity investments and other related items	—	—	12
State income taxes, net of federal benefit	8	6	9
Other, net	18	(5)	17
Income tax provision (benefit)	122	201	314
Effective income tax rate	12 %	41 %	33 %

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Federal and state income taxes have not been provided on accumulated but undistributed earnings of $4.3 billion as of December 31, 2016 as such earnings have been permanently reinvested in the business or may be remitted substantially free of incremental US federal tax liability. The determination of the amount of the unrecognized deferred tax liability related to the undistributed earnings is not practicable.

The lower effective tax rate for the year ended December 31, 2016 is primarily attributable to the release of valuation allowances in foreign jurisdictions due to internal restructuring in Canada, improved operating results in China and settlement of uncertain tax positions and technical clarifications in Germany and the US. The higher effective rate for the year ended December 31, 2015 was due to increased losses in jurisdictions with no tax benefit. The increased losses primarily related to a $123 million long-lived asset impairment recorded to fully write-off certain ethanol related assets at the Company's acetyl facility in Nanjing, China and a $174 million charge related to the termination of a raw materials contract with a supplier in Singapore (Note 18). These losses without tax benefit impacted 2015, but did not recur in 2016. The tax impact of these events was partially offset by decreases in uncertain tax positions of $29 million due to audit closures and technical jurisdictional clarifications.

In February 2015, the Company established a centralized European headquarters for the purpose of improving the operational efficiencies and profitability of its European operations and certain global product lines. These activities directly impacted the Company's mix of earnings and product flows and resulted in net favorable tax rate impacts in the jurisdictions in which the Company operates. These impacts have been reflected in (Income) expense not resulting in tax impact, net and Other foreign tax rate differentials included in the reconciliation of the significant differences between the US federal statutory tax rate and the effective income tax rate.

Deferred Income Taxes

Deferred income taxes reflect the net tax effects of temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for income tax purposes. Significant components of the consolidated deferred tax assets and liabilities are as follows:

	As of December 31,	
	2016	2015
	(In $ millions)	
Deferred Tax Assets		
Pension and postretirement obligations	313	434
Accrued expenses	61	40
Inventory	11	14
Net operating loss	661	683
Tax credit carryforwards	136	88
Other	161	202
Subtotal	1,343	1,461
Valuation allowance[1]	(386)	(448)
Total	957	1,013
Deferred Tax Liabilities[2]		
Depreciation and amortization	366	380
Investments in affiliates	475	395
Other	87	114
Total	928	889
Net deferred tax assets (liabilities)	29	124

(1) Includes deferred tax asset valuation allowances for the Company's deferred tax assets in the US, Luxembourg, Spain, China, Singapore, the United Kingdom, Canada and France. These valuation allowances relate primarily to net operating loss carryforward benefits and other net deferred tax assets, all of which may not be realizable.

(2) Includes deferred tax liabilities from the acquisition of SOFTER (Note 4).

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For the year ended December 31, 2016, the valuation allowance decreased by $62 million primarily due to internal restructuring in Canada, improved operating results in China, foreign currency fluctuation and net operating loss adjustments and expirations.

Net Operating Loss Carryforwards

As of December 31, 2016, the Company has US federal net operating loss carryforwards of $36 million that are subject to limitation. These net operating loss carryforwards begin to expire in 2021. At December 31, 2016, the Company also had state net operating loss carryforwards, net of federal tax impact, of $54 million, $50 million of which are offset by a valuation allowance due to uncertain recoverability. The Company also has foreign net operating loss carryforwards as of December 31, 2016 of $2.3 billion primarily for Luxembourg, Spain, Canada, China, Singapore and the United Kingdom, with various expiration dates. Net operating loss carryforwards of $418 million in China are set to expire beginning in 2017 through 2021. Net operating losses in most other foreign jurisdictions do not have an expiration date.

Uncertain Tax Positions

Activity related to uncertain tax positions is as follows:

	Year Ended December 31,		
	2016	2015	2014
	(In $ millions)		
As of the beginning of the year	158	228	244
Increases in tax positions for the current year	9	13	7
Increases in tax positions for prior years[1]	11	76	24
Decreases in tax positions for prior years	(9)	(126)	(46)
Decreases due to settlements	(55)	(33)	(1)
As of the end of the year	114	158	228
Total uncertain tax positions that if recognized would impact the effective tax rate	87	144	245
Total amount of interest expense (benefit) and penalties recognized in the consolidated statements of operations[2]	(16)	(12)	2
Total amount of interest expense and penalties recognized in the consolidated balance sheets	26	43	67

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(1) Includes uncertain tax positions related to the SOFTER acquisition (Note 4) of $19 million for the year ended December 31, 2016.

(2) This amount reflects interest on uncertain tax positions and release of certain tax positions as a result of audit closure that was reflected in the consolidated statements of operations. In addition, for the years ended December 31, 2016 and 2015, the Company also paid an additional $1 million and $12 million, respectively, of previously accrued amounts due to settlements of tax examinations.

The Company primarily operates in the US, Germany, Belgium, Canada, China, Mexico and Singapore. Examinations are ongoing in a number of these jurisdictions. The Company's US tax returns for the years 2009 through 2012 are currently under audit by the US Internal Revenue Service. Outside of the US, the Company's German tax returns for the years 2008 through 2010 are under audit as well as certain of the Company's other subsidiaries within their respective jurisdictions.

The decrease in uncertain tax positions for the year-ended December 31, 2016 is primarily due to audit closures and technical judicial clarifications. It is reasonably possible that a further change in the unrecognized tax benefits may occur within the next twelve months related to the settlement of one or more of these audits.

In connection with the Company's US federal income tax audit for 2009 and 2010, the Company has received $192 million of proposed pre-tax adjustments related to various intercompany charges. In the event the Company is wholly unsuccessful in its defense, an actual tax assessment would result in the consumption of up to $67 million of prior foreign tax credit carryforwards. The Company believes these proposed adjustments to be without merit and is vigorously defending its position.

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20. Management Compensation Plans

General Plan Description

The Company issues stock-based awards under its 2009 GIP, which enables the compensation committee of the Board of Directors to award incentive and nonqualified stock options, stock appreciation rights, shares of Common Stock, restricted stock awards, RSUs and incentive bonuses (which may be paid in cash or stock or a combination thereof), any of which may be performance-based, with vesting and other award provisions that provide effective incentive to Company employees (including officers), non-management directors and other service providers.

Total shares available for awards and total shares subject to outstanding awards are as follows:

	As of December 31, 2016		
	Shares Available for Awards	Shares Subject to Outstanding Awards	
2009 GIP	5,429,360	1,798,343	
2004 Stock Incentive Plan	—	12,500	(1)

(1) No RSUs remain outstanding under the 2004 Stock Incentive Plan.

The Company realized income tax benefits from stock option exercises and RSU vestings as follows:

	Year Ended December 31,		
	2016	2015	2014
	(In $ millions)		
Income tax benefit realized	7	2	2
Amount reversed in current year related to prior year	—	—	—

Stock Options

The summary of changes in stock options outstanding is as follows:

	Number of Options	Weighted Average Exercise Price	Weighted Average Remaining Contractual Term	Aggregate Intrinsic Value
	(In thousands)	(In $)	(In years)	(In $ millions)
As of December 31, 2015	249	35.19	2.4	9
Granted	—	—		
Exercised	(195)	33.08		
Forfeited	—	—		
Expired	—	—		
As of December 31, 2016(1)	54	42.77	2.0	2

(1) All stock options outstanding as of December 31, 2016 were vested and exercisable.

The total intrinsic value of stock options exercised is as follows:

	Year Ended December 31,		
	2016	2015	2014
	(In $ millions)		
Intrinsic value	7	4	7

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Restricted Stock Units

A summary of changes in nonvested performance-based RSUs outstanding is as follows:

	Number of Units	Weighted Average Grant Date Fair Value
	(In thousands)	(In $)
As of December 31, 2015	1,231	50.24
Granted	446	56.24
Additional performance-based RSUs granted[1]	483	48.03
Vested	(966)	48.03
Canceled	—	—
Forfeited	(109)	53.55
As of December 31, 2016	1,085	53.36

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(1) Represents additional performance-based RSU grants in 2013 and 2014 that were awarded in 2016 as a result of achieving internal profitability targets.

The fair value of shares vested for performance-based RSUs is as follows:

	Year Ended December 31,		
	2016	2015	2014
	(In $ millions)		
Total	64	27	—

A summary of changes in nonvested time-based RSUs outstanding is as follows:

	Employee Time-Based RSUs		Director Time-Based RSUs	
	Number of Units	Weighted Average Grant Date Fair Value	Number of Units	Weighted Average Grant Date Fair Value
	(In thousands)	(In $)	(In thousands)	(In $)
As of December 31, 2015	105	60.78	14	64.94
Granted	291	67.82	15	69.76
Vested	(42)	59.13	(15)	65.03
Forfeited	(24)	59.28	—	—
As of December 31, 2016	330	67.32	14	69.88

The fair value of shares vested for time-based RSUs is as follows:

	Year Ended December 31,		
	2016	2015	2014
	(In $ millions)		
Total	4	6	9

As of December 31, 2016, there was $35 million of unrecognized compensation cost related to RSUs, excluding actual forfeitures, which is expected to be recognized over a weighted average period of two years.

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21. Leases

Future minimum lease payments under non-cancelable rental and lease agreements, which have initial or remaining terms in excess of one year are as follows:

	As of December 31, 2016 Capital Leases (In $ millions)
2017	46
2018	44
2019	45
2020	44
2021	44
Later years	146
Sublease income	—
Minimum lease commitments	369
Less amounts representing interest	(152)
Present value of net minimum lease obligations	217

	As of December 31, 2016 Operating Leases (In $ millions)
2017	57
2018	53
2019	48
2020	42
2021	29
Later years	166
Sublease income	—
Minimum lease commitments	395

The Company expects that, in the normal course of business, leases that expire will be renewed or replaced by other leases.

Rent expense recorded under all operating leases is as follows:

	Year Ended December 31, 2016	2015	2014
	(In $ millions)		
Total	154	154	161

22. Derivative Financial Instruments

Cash Flow Hedges

Cross-currency Swaps

In March 2015, the Company settled its cross-currency swap agreements with notional values of $250 million/€193 million, expiring on September 11, 2020, and $225 million/€162 million, expiring on April 17, 2019, in exchange for cash of $88 million. The Company classifies cash flows from derivative instruments designated as cash flow hedges in the same category of the consolidated statement of cash flows as the cash flows from the items being hedged. Accordingly, the settlement of the cross-currency swap agreements was included in Net cash provided by (used in) operating activities in the consolidated statement of cash flows for the year ended December 31, 2015.

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Net Investment Hedges

The total notional amount of foreign currency denominated debt designated as a net investment hedge of net investments in foreign operations are as follows:

	As of December 31,	
	2016	2015
	(In € millions)	
Total	850	328

Foreign Currency Forwards and Swaps

Each of the contracts included in the table below will have approximately offsetting effects from actual underlying payables, receivables, intercompany loans or other assets or liabilities subject to foreign exchange remeasurement. The total US dollar equivalents of net foreign exchange exposure related to (short) long foreign exchange forward contracts outstanding by currency are as follows:

	2017 Maturity
	(In $ millions)
Currency	
Brazilian real	(19)
British pound sterling	(78)
Canadian dollar	33
Chinese renminbi	(41)
Euro	138
Hungarian forint	9
Indonesian rupiah	(6)
Korean won	10
Singapore dollar	30
Total	76

Gross notional values of the foreign currency forwards and swaps are as follows:

	As of December 31,	
	2016	2015
	(In $ millions)	
Total	508	502

Hedging activity for interest rate swaps, cross-currency swaps and commodity swaps is as follows:

	Year Ended December 31,			Statement of Operations Classification
	2016	2015	2014	
	(In $ millions)			
Hedging activities	2	2	(4)	Cost of sales; Interest income (expense)
Ineffective portion of hedging activities	—	—	—	Other income (expense), net

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Information regarding changes in the fair value of the Company's derivative and non-derivative instruments is as follows:

	Gain (Loss) Recognized in Other Comprehensive Income (Loss)			Gain (Loss) Recognized in Earnings (Loss)			Statement of Operations Classification
	Year Ended December 31,			Year Ended December 31,			
	2016	2015	2014	2016	2015	2014	
	(In $ millions)						
Designated as Cash Flow Hedges							
Commodity swaps	7	—	—	2	—	—	Cost of sales
Interest rate swaps	—	—	(1)	—	—	(4)	Interest expense
Cross-currency swaps	—	—	(8)	—	46	46	Other income (expense), net or Interest expense
Total	7	—	(9)	2	46	42	
Designated as a Net Investment Hedge							
Foreign currency denominated debt (Note 14)	61	48	23	—	—	—	N/A
Total	61	48	23	—	—	—	
Not Designated as Hedges							
Interest rate swaps	—	—	—	—	(1)	(3)	Interest expense
Foreign currency forwards and swaps	—	—	—	14	(82)	(15)	Foreign exchange gain (loss), net; Other income (expense), net
Total	—	—	—	14	(83)	(18)	

See Note 23 - Fair Value Measurements for additional information regarding the fair value of the Company's derivative instruments.

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Information regarding the gross amounts of the Company's derivative instruments and the amounts offset in the consolidated balance sheets is as follows:

	As of December 31,	
	2016	2015
	(In $ millions)	
Derivative Assets		
Gross amount recognized	14	2
Gross amount offset in the consolidated balance sheets	4	—
Net amount presented in the consolidated balance sheets	10	2
Gross amount not offset in the consolidated balance sheets	2	—
Net amount	8	2

	As of December 31,	
	2016	2015
	(In $ millions)	
Derivative Liabilities		