Celanese Corp
Form 10-K
February 07, 2019
Table of Contents

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, 2018
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	98-0420726
(State or Other Jurisdiction of Incorporation or Organization)	(I.R.S. Employer Identification No.)
222 West Las Colinas Blvd., Suite 900N, Irving, TX	75039-5421
(Address of Principal Executive Offices)	(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
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
1.250% Senior Notes due 2025	New York Stock Exchange
2.125% Senior Notes due 2027	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 every Interactive Data File required to be submitted 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 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, a smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer,"

"accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act.

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

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

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

The aggregate market value of the registrant's common stock held by non-affiliates as of June 30, 2018 (the last business day of the registrants' most recently completed second fiscal quarter) was $14,934,861,283.

The number of outstanding shares of the registrant's common stock, $0.0001 par value, as of January 31, 2019 was 128,100,117.

DOCUMENTS INCORPORATED BY REFERENCE

Certain portions of the registrant's Definitive Proxy Statement relating to the 2019 annual meeting of stockholders, to be filed with the Securities and Exchange Commission, are incorporated by reference into Part III.

Table of Contents

CELANESE CORPORATION

Form 10-K
For the Fiscal Year Ended December 31, 2018

TABLE OF CONTENTS

Table of Contents

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.

Table of Contents

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 a leading global producer of high performance engineered polymers that are used in a variety of high-value applications, as well as one of the world's largest producers of acetyl products, which are intermediate chemicals, for nearly all major industries. 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 automotive, chemical additives, construction, consumer and industrial adhesives, consumer and medical, energy storage, filtration, food and beverage, paints and coatings, paper and packaging, performance industrial and textiles. 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 across 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 differentiated business models and a clear focus on growth and value creation. Known for operational excellence, reliability and execution of our business strategies, we partner with our customers around the globe to deliver 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 32 global production facilities and an additional 9 strategic affiliate production facilities. As of December 31, 2018, we employed 7,684 people worldwide.

Business Segment Overview

During 2018, we reorganized our operating and reportable segments to align with recent structural and management reporting changes. These changes reflect: (1) the movement of our food ingredients business from the Consumer Specialties reportable segment into our Engineered Materials reportable segment, (2) the renaming of the former Consumer Specialties reportable segment as the Acetate Tow segment, (3) the renaming of the former Advanced Engineered Materials reportable segment as the Engineered Materials segment and (4) the combination of the former Industrial Specialties and former Acetyl Intermediates operating and reportable segments into the Acetyl Chain operating and reportable segment.

We operate principally through three business segments: Engineered Materials, Acetate Tow and Acetyl Chain. See Business Segments below and Note 26 - Segment Information and Note 27 - Revenue in the accompanying consolidated financial statements for further information.

Business Segments
Engineered Materials

Products	Major End-Use Applications	Principal Competitors	Key Raw Materials
• Polyoxymethylene ("POM") • Ultra-high molecular weight polyethylene ("UHMW-PE") • Polybutylene terephthalate ("PBT") • Long-fiber reinforced thermoplastics ("LFRT") • Liquid crystal polymers ("LCP") • Thermoplastic elastomers ("TPE") • Nylon compounds or formulations • Polypropylene compounds or formulations • Polyphenylene sulfide ("PPS") • Acesulfame potassium ("Ace-K") • Potassium sorbate • Sorbic acid	• Automotive • Medical • Industrial • Energy storage • Consumer electronics • Appliances • Filtration equipment • Telecommunications • Beverages • Confections • Baked goods	• Ajinomoto Co. Inc. • Anhui Jinhe Industry Co., Ltd. • BASF SE • Daicel Corporation • E. I. du Pont de Nemours and Company • Koninklijke DSM N.V. • Nantong Acetic Acid Chemical Co., Ltd. • The NutraSweet Company • SABIC Innovative Plastics • Solvay S.A. • Suzhou Hope Technology Co., Ltd. • Tate & Lyle plc 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) • PA6 (for nylon) • PA66 (for nylon) • Para-dichlorobenzene (for PPS) • Diketene (for Ace-K) For potassium sorbate and sorbic acid: • Acetic acid • Crotonaldehyde • Ethylene • Potassium hydroxide

• Overview

Our Engineered Materials segment includes our engineered materials business, our food ingredients 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.

Engineered Materials is a project-based business where growth is driven by increasing new project commercializations from the pipeline. 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, Japan, Mexico, South Korea, the United Kingdom and the US, along with sites associated with our four strategic affiliates in Japan, Malaysia, Saudi Arabia, South Korea and the US.

Our broad marketplace presence reflects our deep understanding of global and customer trends, including the growing global demand for more sophisticated 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 and appearance, low emissions, heat resistance and low-friction for medical applications, that we are uniquely positioned to address with our materials portfolio. In addition, the opportunity pipeline process identifies a number of emerging trends early, enabling faster growth.

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.

Table of Contents

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. Thermoplastic elastomers offer unique attributes for use in automotive, appliances, consumer goods, electrical, electronic and industrial applications. Nylon compounds are used in a range of applications including automotive, consumer, electrical, electronic and industrial. These value-added applications in diverse end uses support the business' global growth objectives.

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.

Our differentiated 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 broad access allows us to create a demand pull for our solutions. 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.

We are a leading global supplier of Ace-K for the food and beverage industry and a leading producer of food protection ingredients, such as potassium sorbate and sorbic acid. We have over fifty years of experience in developing and marketing specialty ingredients for the food and beverage industry and are the only western producer of Ace-K. We have a production facility in Germany, with sales and distribution facilities in all major regions of the world.

On January 2, 2019, we completed the acquisition of 100% of the ownership interests of Next Polymers Ltd., an India-based engineering thermoplastics ("ETP") compounder. The acquisition strengthens our position in the Indian ETP market and further expands our global manufacturing footprint. See Note 30 - Subsequent Events in the accompanying consolidated financial statements for further information.

On October 18, 2018, we announced a capital efficient debottlenecking project of our POM production unit in Frankfurt, Germany to support the continued growth of our Engineered Materials segment. We expect to expand the production capacity by 20kt. This project is expected to be completed in 2020.

On February 1, 2018, we completed the acquisition of 100% of the ownership interests of Omni Plastics, L.L.C. and its subsidiaries ("Omni Plastics"). Omni Plastics specializes in custom compounding of various engineered thermoplastic materials. The acquisition further strengthens our global asset base by adding compounding capacity in the Americas. See Note 4 - Acquisitions, Dispositions and Plant Closures in the accompanying consolidated financial statements for further information.

In October 2017, we announced plans to expand the capacity of our global compounding assets and certain product-specific manufacturing production sites to support the significant growth in our Engineered Materials segment. We expect these new production lines and expansions to add approximately 50-60kt per year in compounding capacity. We also expect the debottlenecking of existing global production lines to provide an additional 10-15kt per year capacity of compounded material production capability and an additional 10-15kt per year of capacity to LFRT production lines. We expect a new production line to add approximately 15kt of GUR® UHMW-PE product capacity. These projects are expected to be completed during 2019.

•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.

Table of Contents

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.
Sales of POM amounted to 11%, 12% and 12% of our consolidated net sales for the years ended December 31, 2018, 2017 and 2016, respectively.
UHMW-PE. Celanese is a 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.
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.
Nylon. Our nylon products include Nylfor® A (PA 6.6), Nylfor® B (PA 6), NILAMID® (PA 6, PA 66, PPA), FRIANYL® (flame retardant PA 6, PA 66, PPA compounds) and ECOMID® (recycled polyamide) 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.
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.
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.
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.
Food protection ingredients. Our food protection ingredients, potassium sorbate and sorbic acid, are mainly used in foods, beverages and personal care products.
Customers
Engineered Materials' principal customers are original equipment manufacturers and their suppliers serving the automotive, medical, industrial and consumer industries. We utilize our customer options mapping process to collaborate with our customers to identify customized solutions that leverage our broad range of polymers and technical expertise. Our engineered materials business has long-standing relationships through multi-year and annual arrangements with many of its major customers and utilizes distribution partners to expand its customer base. We primarily sell Sunett® sweetener to a limited number of large multinational and regional customers in the food and beverage industry under multi-year 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.

Table of Contents

As Engineered Materials is a project-based business focused on solutions, the pricing of products in this segment is primarily based on the value-in-use 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 in the short-term.
See Note 27 - Revenue in the accompanying consolidated financial statements for further information.

Acetate Tow

Products	Major End-Use Applications	Principal Competitors	Key Raw Materials
• Acetate tow • Acetate flake	• Filtration • Films • Flexible packaging	• Blackstone Rhodia • Daicel Corporation • Eastman Chemical Company • Mitsubishi Rayon Co., Ltd	• Wood pulp • Acetic acid • Acetic anhydride

• Overview

Our Acetate Tow business is a leading global producer and supplier of acetate tow and acetate flake, primarily used in filter products applications. 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 over three decades. Our Acetate Tow business has production sites in Belgium, Mexico and the US, along with sites at our three Acetate Tow strategic affiliates in China.
In June 2017, we, through various subsidiaries, entered into an agreement with affiliates of The Blackstone Group L.P. (the "Blackstone Entities") to form a joint venture which would combine substantially all of the operations of our Acetate Tow business and the operations of the Rhodia Acetow cellulose acetate business formerly operated by Solvay S.A. and acquired by the Blackstone Entities in June 2017. The parties were subsequently unable to reach an agreement with the European Commission on acceptable conditions to allow the proposed joint venture to proceed. The demands by the European Commission eliminated the primary advantages of the transaction. As a result, on March 19, 2018, we and the Blackstone Entities abandoned our agreement to form the proposed joint venture. See Note 4 - Acquisitions, Dispositions and Plant Closures in the accompanying consolidated financial statements for further information.

• Key Products

Acetate tow and acetate flake. 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 intermediate chemistry business. Acetate flake is then further processed into acetate tow.
Sales of acetate tow amounted to 8%, 10% and 14% of our consolidated net sales for the years ended December 31, 2018, 2017 and 2016, 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.
The pricing of products within the Acetate Tow segment is sensitive to demand and is primarily based on the value-in-use. Many sales 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 in the short to medium term due to other factors, such as the intense level of competition in the industry.
See Note 27 - Revenue in the accompanying consolidated financial statements for further information.

Table of Contents

Acetyl Chain

Products	Major End-Use Applications	Principal Competitors	Key Raw Materials
Intermediate chemistry			
• Acetic acid • VAM • Acetic anhydride • Acetaldehyde • Ethyl acetate • Formaldehyde • Butyl acetate	• Paints • Coatings • Adhesives • Lubricants • Pharmaceuticals • Films • Textiles • Inks • Plasticizers • Solvents	• BASF SE • BP PLC • Chang Chun Petrochemical Co., Ltd. • Daicel Corporation • DowDupont Inc. • 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 Vinyl acetate monomer ("VAM"): • Carbon monoxide • Methanol • Ethylene For solvents and derivatives: • Methanol • Acetic acid
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	• 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 • Hot melt adhesives	• Arkema • E. I. du Pont de Nemours and Company • ExxonMobil Chemical	• VAM • Ethylene

Overview

The Acetyl Chain segment, which includes our intermediate chemistry, emulsion polymers and EVA polymers businesses, is active in every major global industrial sector and serves diverse 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 intermediate chemistry business 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.

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. We are a global industry leader, with a broad acetyls product portfolio, leading technology, low cost production footprint and a global supply chain. 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 metric tons at a

Table of Contents

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.

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®, Dur-O-Set®, 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 Canada.

Our intermediate chemistry business 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 including production at our VAE emulsions unit in Singapore, supporting growing demand for ecologically friendly materials in Southeast Asia. In addition to geographic growth, the 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

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, leverage global supply and demand fundamentals. The principal raw materials in these products are carbon monoxide, 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 purpose-made in close proximity.

We have 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. 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 January 2019, we announced a global reconfiguration of the acetic acid production footprint by expanding the acetic acid capacity at our Clear Lake, Texas production facility to approximately 2 million tons by late 2021, with limited net change in our total system tonnage via equivalent productivity options in Singapore and Nanjing, China. Further, we announced the signing of an agreement to acquire a 365kt synthesis gas production unit from Linde, located at our Clear Lake, Texas facility.

In April 2018, we announced a series of capital efficient debottlenecking projects across our global network of acetyls manufacturing plants. We expect these technology-oriented process improvement projects to add 140kt per year of capacity for acetic acid and 150kt per year of capacity for VAM, when required by demand growth, through 2020.

Sales from acetyl products amounted to 31%, 27% and 29% of our consolidated net sales for the years ended December 31, 2018, 2017 and 2016, respectively.

Table of Contents

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;
- Butyl acetate, an acetate ester that is a solvent used in inks, pharmaceuticals and perfume; and
- 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.

Emulsion Polymers. 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. VAE emulsions are in high demand in Europe and Asia as they enable low volatile organic compound paints, specifically in interior paints.

Sales from emulsion polymer products amounted to 13%, 13% and 15% of our consolidated net sales for the years ended December 31, 2018, 2017 and 2016, respectively.

EVA Polymers. 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.

- 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 a mix of short- and long-term agreements. 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.

Emulsion and EVA polymers 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 the Acetyl Chain segment 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 products. This impact to pricing typically lags changes in raw material costs over months or quarters and impacts profit margins over those periods.

See Note 27 - Revenue in the accompanying consolidated financial statements for further information.

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. Ongoing merger, acquisition and integration related costs are also included in Other Activities.

Table of Contents

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.

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.

Our strategic affiliates contribute substantial earnings and cash flows to us. During the year ended December 31, 2018, our equity method strategic affiliates generated combined sales of $2.6 billion, resulting in our recording $203 million of equity in net earnings of affiliates and $187 million of dividends.

Our strategic affiliates as of December 31, 2018 are as follows:

	Location of Headquarters	Ownership	Partner(s)	Year Entered
Equity Investments				
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
Equity Investments Without Readily Determinable Fair Value				
Acetate Tow				
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 constructed a 50,000 metric ton POM production facility in Saudi Arabia. The facility supplies POM to support Engineered Materials' future growth plans as well as our venture partners' regional business development and was declared commercially operational in the fourth quarter of 2017. Upon successful startup of the POM facility, our indirect economic interest in Ibn Sina increased from 25% to 32.5%.

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.

12

Table of Contents

Acetate Tow strategic ventures. Our Acetate Tow ventures generally fund their operations using operating cash flow and pay dividends based on each ventures' performance in the preceding year. In 2018, 2017 and 2016, we received cash dividends of $112 million, $107 million and $107 million, respectively.

Although our ownership interest in each of our Acetate Tow ventures exceeds 20%, we account for these investments at cost after considering observable price changes for similar instruments, minus impairment, if any, 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. Further, these investments were determined not to have a readily determinable fair value.

Other Equity Method Investments

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

	As of December 31, 2018
	(In percentages)
InfraServ GmbH & Co. Gendorf KG	30
InfraServ GmbH & Co. Hoechst KG	32
InfraServ GmbH & Co. Knapsack KG	22

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. Amcel®, AOPlus®, Ateva®, Avicor®, Celanese®, Celanex®, Celanyl™, Celcon®, Celstran®, Celvolit®, Clarifoil®, Dur-O-Set®, ECOMID®, EcoVAE®, Factor®, Forflex®, Forprene®, FRIANYL®, Fortron®, GHR®, Gumfit®, GUR®, Hostaform®, Laprene®, MetaLX®, Mowilith®, MT®, NILAMID®, Nutrinova®, Nylfor®, OmniLon®, Pibiflex®, Pibifor®, Pibiter®, Polifor®, Resyn®, Riteflex®, SlideX®, Sofprene®, Sofpur®, Sunett®, Talcoprene®, Tecnoprene®, Thermx®, TufCOR®, VAntage®, Vectra®, Vinac®, 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® and NILAMID® are registered trademarks 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.

Table of Contents

Employees

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

	Employees as of December 31, 2018
North America	
US	2,693
Canada	201
Mexico	648
Total	3,542
Europe	
Germany	1,574
Other Europe	1,350
Total	2,924
Asia	1,083
Rest of World	135
Total	7,684

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.

Table of Contents

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, any future withdrawal or renegotiation of trade agreements, or the failure to reach agreement over trade agreements, or the imposition of new or increased tariffs on our products or raw materials, or the more aggressive prosecution of trade disputes with countries like China, may increase costs or reduce profitability, or 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 2018, sales originating in Europe accounted for approximately 40% of our net sales. Adverse conditions in the European economy related to the United Kingdom's exit from the European Union ("EU") membership or otherwise may negatively impact our overall financial results due to reduced economic growth and resulting in 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 our intermediate chemistry business, 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 emulsion polymers and EVA polymer businesses, 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 acetate tow. 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 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.

Table of Contents

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 site 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.

Almost all 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.

Production at our manufacturing facilities, or at our suppliers', 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, or our suppliers, 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 Engineered

Table of Contents

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, construction, 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 one of our products fails to perform in a manner consistent with applicable 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 and our rights to use our intellectual property. 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 monitor intellectual property of others, especially patents that could impact our rights to commercially implement research and development, our rights to manufacture and market our products, and our rights to use know-how and trade secrets. We will not intentionally infringe upon the valid intellectual property rights of others, and we will continue to assess and take actions as necessary to protect our positions. 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. We also monitor the trademarks of others and take action when our trademark rights are being infringed upon. If we are not successful in protecting or maintaining our patent, license, trademark or other intellectual property rights, or protecting our rights to commercially make, market and sell our products, our net sales, results of operations and cash flows may be adversely affected.

Table of Contents

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 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, including the more aggressive enforcement of such laws and 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. In addition, enforcement of environmental or other governmental policy may result in plant shut downs or significantly decreased production, such as in China on high pollution days. Any of these conditions, including the failure to obtain or maintain operating permits for our business, may have an effect on our business and financial results as a whole and may result in volatile current and future prices for our products and raw materials.

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 and labeled in a manner that would adversely affect demand for such products. For example, in 2012 the International Agency for Research on Cancer ("IARC"), a research agency within the World Health Organization, classified formaldehyde as carcinogenic to humans (Group 1) based on epidemiological studies linking formaldehyde exposure to nasopharyngeal cancer, a rare cancer in humans, and leukemia. In

Table of Contents

2011, a similar conclusion was reached by the National Toxicology Program ("NTP"), a U.S. inter-agency research program. We anticipate that the results of the IARC's and the NTP's reviews will continue to be examined and considered by government regulatory agencies with responsibility for setting worker and environmental exposure standards and labeling requirements.

Other 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 Frank R. Lautenberg Chemical Safety for the 21st Century Act which amended the Toxic Substances Control Act (TSCA), the United States primary chemicals management law, as well as various European Commission regulatory programs, such as REACH (Registration, Evaluation, Authorization and Restriction of Chemicals), and new initiatives in Asia and other regions. These assessments may result in heightened concerns about the chemicals involved and additional regulatory requirements being placed on the production, handling, labeling and/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. The CFATS Extension Act of 2019 ("HR 251") was signed into law by the President on January 19, 2019. HR 251 extends CFATS for 15 months, until April 19, 2020. This extension does not make any changes to the program and is intended to provide lawmakers the needed time to discuss improvements to CFATS and provides for a longer term authorization. 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. 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.

Table of Contents

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 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, have changed or 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.
On December 31, 2017, the Tax Cuts and Jobs Act (the "TCJA") was enacted and was effective January 1, 2018. In accordance with Accounting Standards Codification 740, Accounting for Income Taxes, which requires companies to recognize the effects of tax law changes in the period of enactment. This overhaul of the US tax law made a number of substantial changes, including the reduction of the corporate tax rate from 35% to 21%, establishing a dividends received deduction for dividends paid by foreign subsidiaries to the US, elimination or limitation of certain deductions (interest, domestic production activities and executive compensation), imposing a mandatory tax on previously unrepatriated earnings accumulated offshore since 1986 and establishing global minimum income tax and base erosion tax provisions related to offshore activities and affiliated party payments. Due to the timing and significance of the TCJA, the Staff of the Securities and Exchange Commission issued Staff Accounting Bulletin No. 118, which provided registrants a measurement period through 2018 to report the impact of the new US tax law.
The US Treasury issued several proposed regulations supplementing the TCJA in 2018. These proposed regulations are intended to be applicable retroactively and would not materially impact our 2018 tax rate if finalized in current form. We currently do not expect them to have a material impact on income tax expense upon final adoption. See Note 19 - Income Taxes in the accompanying consolidated financial statements for further information.
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

Table of Contents

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.

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.

Table of Contents

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, 2018, we had 7,684 employees globally. Approximately 16% of our 2,693 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 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 joint venture transactions or successfully integrate them 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, the ability to obtain regulatory approvals necessary to consummate a planned transaction, and by our financial resources, including available cash and borrowing capacity. Acquisitions and joint venture transactions 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 transactions 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.

Table of Contents

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.

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 "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, €750 million in aggregate principal amount of 1.125% senior unsecured notes due 2023, €300 million in aggregate principal amount of 1.250% senior unsecured notes due 2025 and €500 million in aggregate principal amount of 2.125% senior unsecured notes due 2027 (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 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

Table of Contents

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.

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 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 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 Credit Agreement could permit lenders to accelerate the maturity of our indebtedness under the Credit Agreement and to terminate any commitments to lend. If the lenders under the 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 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 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

Table of Contents

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 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 Credit Agreement, the Indentures, the guarantee of Celanese US's obligations under the Credit Agreement and the Indentures by Celanese, or our other indebtedness.

Item 1B. Unresolved Staff Comments

None.

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, 2018.

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
Engineered Materials		
Auburn Hills, Michigan, US	Leased	Automotive Development Center
Bishop, Texas, US	Owned	Polyoxymethylene ("POM"), Ultra-high molecular weight polyethylene ("UHMW-PE"), Compounding
Campo Bom, Brazil	Leased	Compounding
Evansville, Indiana, US	Owned	Compounding
Ferrara, Italy	Leased	Compounding
Florence, Kentucky, US	Owned	Compounding
Forli, Italy	Leased	Compounding
Frankfurt am Main, Germany[(1)(3)]	Owned by InfraServ GmbH & Co. Hoechst KG[(5)]	POM, Compounding, Sorbates, Sunett® sweetener
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, POM
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

Table of Contents

Site	Leased/Owned	Products/Functions
Engineered Materials		
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
Spondon, Derby, United Kingdom	Owned	Acetate film
Suzano, Brazil[1]	Leased	Compounding
Suzhou, China[8]	Owned	Compounding
Ulsan, South Korea	Owned by Korea Engineering Plastics Co., Ltd.[5]	POM
Utzenfeld, Germany	Owned	Compounding
Wehr, Germany	Owned	Compounding
Wilmington, North Carolina, US	Owned by Fortron Industries LLC[5]	Polyphenylene sulfide
Winona, Minnesota, US	Owned	LFRT
Acetate Tow		
Kunming, China	Leased by Kunming Cellulose Fibers Co. Ltd.[6]	Acetate tow
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 flake
Zhuhai, China	Leased by Zhuhai Cellulose Fibers Co. Ltd.[6]	Acetate tow
Acetyl Chain		
Bay City, Texas, US[1]	Leased	Vinyl acetate monomer ("VAM")
Bishop, Texas, US	Owned	Formaldehyde, Paraformaldehyde
Boucherville, Quebec, Canada	Owned	Conventional emulsions
Cangrejera, Mexico	Owned	Acetic anhydride, Ethyl acetate, Acetone derivatives
Clear Lake, Texas, US[4]	Owned	Acetic acid, VAM, Methanol
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]	Acetaldehyde, Conventional emulsions, VAE emulsions, VAM
Geleen, Netherlands	Owned	VAE emulsions
Jurong Island, Singapore[1]	Leased	Acetic acid, Butyl acetate, Ethyl acetate, VAE emulsions, VAM
Nanjing, China[2]	Owned	Acetic acid, Acetic anhydride, Conventional emulsions, VAE emulsions, VAM
Perstorp, Sweden	Owned	Conventional emulsions, VAE emulsions

[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.

Table of Contents

(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 equity investment without a readily determinable fair value. The investment owns the assets on this site and leases the land from China National Tobacco Corporation.
(7) A Celanese equity investment without a readily determinable fair value. 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) Celanese owns the assets on this site. Celanese also owns the land through "land use right grants" for 41 years with the right to transfer, mortgage or lease such land during the term of the respective land use right grant.

Item 3. Legal Proceedings

The Company is involved in legal and regulatory proceedings, lawsuits, claims and investigations incidental to the normal conduct of its business, relating to such matters as product liability, land disputes, contracts, employment, antitrust and competition, intellectual property, personal injury and other actions in tort, workers' compensation, chemical exposure, asbestos exposure, taxes, trade compliance, acquisitions and divestitures, claims of legacy stockholders, past waste disposal practices and release of chemicals into the environment. The Company is actively defending those matters where it is named as a defendant. 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 may not represent the ultimate loss to the Company from legal proceedings. See Note 16 - Environmental and Note 24 - Commitments and Contingencies in the accompanying consolidated financial statements for a discussion of material environmental matters and material commitments and contingencies related to legal and regulatory proceedings. See Item 1A. Risk Factors for certain risk factors relating to these legal proceedings.

Item 4. Mine Safety Disclosures

None.

Executive Officers of the Registrant

The names, ages and biographies of our executive officers as of February 7, 2019 are as follows:

Name	Age	Position
Mark C. Rohr	67	Chairman of the Board of Directors and Chief Executive Officer, President
Scott M. Sutton	54	Chief Operating Officer
Scott A. Richardson	42	Senior Vice President and Chief Financial Officer
Shannon L. Jurecka	49	Senior Vice President and Chief Human Resources Officer

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.

Scott M. Sutton has served as our Chief Operating Officer since March 2017 and 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.

Table of Contents

Scott A. Richardson was named Chief Financial Officer for Celanese Corporation in February 2018 after serving as Senior Vice President of the Engineered Materials business since December 2015, where he had global responsibility for strategy, product and business management, planning and portfolio development, and pipeline management. Previously, Richardson served as Vice President and General Manager of the Acetyl Chain since 2011. Richardson has progressed through several Celanese roles including global commercial director, Acetyls; manager of Investor Relations; business analysis manager, Acetyls; and business line controller, Polyols and Solvents. He joined Celanese in 2005. Prior to joining Celanese, Richardson held various finance, operational and leadership roles at American Airlines. He earned a Bachelor of Arts in Accounting from Westminster College and a Master of Business Administration from Texas Christian University.

Shannon L. Jurecka has served as our Senior Vice President and Chief Human Resources Officer since July 2017. Prior to her current role, Ms. Jurecka served as Vice President of Human Resources for Materials Solutions and the Human Resource leader for Mergers and Acquisitions. Immediately prior to joining the Company in 2016, Ms. Jurecka served as a Human Resources Executive with Bank of America Merrill Lynch for 10 years where she supported multiple businesses during her tenure, including her most recent role supporting over 20,000 operations employees in more than 25 locations across seven states. She also served as the Dallas and Fort Worth Market Human Resource Executive responsible for market strategic talent objectives. Prior to Bank of America, she worked at Dell as a Mechanical Engineering Project Manager prior to moving into Learning and Leadership Development. Ms. Jurecka holds a bachelor's degree in speech communication from Sam Houston State University and a master's degree in organizational leadership and ethics from St. Edwards University. She holds a secondary education teaching certificate in the State of Texas.

Table of Contents

PART II

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

Market Information

Our 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.

Holders

As of January 31, 2019, there were 27 holders of record of our Common Stock. By including persons holding shares in broker accounts under street names, however, we estimate we have approximately 113,142 beneficial holders.

Dividend Policy

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. Certain indentures for notes issued prior to 2016 have provisions that restrict the amount available to us to pay cash dividends in the event of a ratings downgrade below investment grade by two or more credit rating agencies. Also, the general corporation law of the State of Delaware imposes additional restrictions on the payment of dividends by all Delaware corporations that do not currently limit our ability to pay cash dividends. See Note 17 - Stockholders' Equity in the accompanying consolidated financial statements for further information.

Celanese Purchases of its Equity Securities

Information regarding repurchases of our Common Stock during the three months ended December 31, 2018 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, 2018	715,208		$97.15	715,208	$1,211,000,000
November 1 - 30, 2018	3,863,626		$101.67	3,863,626	$818,000,000
December 1 - 31, 2018	1,175,800		$89.30	1,175,800	$713,000,000
Total	5,754,634	(3)		5,754,634	

____

(1) May include shares withheld from employees to cover their withholding requirements for personal income taxes related to the vesting of restricted stock.

(2) Our Board of Directors has authorized the aggregate repurchase of $3.9 billion of our Common Stock since February 2008.

(3) Excludes 1,700 common shares reacquired pursuant to an employee clawback agreement.

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

Table of Contents

Performance Graph

The following performance graph compares the cumulative total return on Celanese Corporation common stock from December 31, 2013 through December 31, 2018 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, 2013. 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.

Table of Contents

Item 6. Selected Financial Data

The balance sheet data as of December 31, 2018 and 2017 and the statements of operations data for the years ended December 31, 2018, 2017 and 2016, 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 and the statements of operations data for the years ended December 31, 2017, 2016, 2015 and 2014, set forth below were derived from previously issued financial statements, adjusted for a change in accounting principle for defined benefit pension plans and other postretirement benefit plans and a change in accounting policy for debt issuance costs, as applicable.

	Year Ended December 31,				
	2018	2017	2016	2015	2014
	(In $ millions, except per share data)				
Statement of Operations Data					
Net sales	7,155	6,140	5,389	5,674	6,802
Other (charges) gains, net	9	(59)	(8)	(349)	15
Operating profit (loss)	1,334	857	934	385	905
Earnings (loss) from continuing operations before tax	1,510	1,075	1,030	488	941
Earnings (loss) from continuing operations	1,218	862	908	287	627
Earnings (loss) from discontinued operations	(5)	(13)	(2)	(2)	(7)
Net earnings (loss) attributable to Celanese Corporation	1,207	843	900	304	624
Earnings (loss) per common share					
Continuing operations — basic	9.03	6.21	6.22	2.03	4.07
Continuing operations — diluted	8.95	6.19	6.19	2.01	4.04
Balance Sheet Data (as of the end of period)					
Total assets	9,313	9,538	8,357	8,586	8,796
Total debt	3,531	3,641	3,008	2,981	2,723
Total Celanese Corporation stockholders' equity	2,984	2,887	2,588	2,378	2,818
Other Financial Data					
Depreciation and amortization	343	305	290	357	292
Capital expenditures[1]	333	281	247	483	681
Dividends paid per common share[2]	2.08	1.74	1.38	1.15	0.93

(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, 2018 consist of one quarterly dividend payment of $0.46 per share and three quarterly dividend payments of 0.54 per share. Annual dividends for the year ended December 31, 2017 consist of one quarterly dividend payment of $0.36 per share and three quarterly dividend payments of $0.46 per share. See Note 17 - Stockholders' Equity in the accompanying consolidated financial statements for further information.

Table of Contents

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 ("MD&A") 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," and "will," and similar expressions, as they relate to us are intended to identify forward-looking statements. These statements reflect our current views and beliefs with respect to future events at the time that the statements are made, are not historical facts or guarantees of future performance and involve risks and uncertainties that are difficult to predict and many of which are outside of our control. 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.

Risk Factors

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, expansions and maintenance;
- 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;
- the ability to identify desirable potential acquisition targets and to consummate acquisition or investment transactions, including obtaining regulatory approvals, consistent with our strategy;
- market acceptance of our technology;
- the ability to obtain governmental approvals and to construct facilities on terms and schedules acceptable to us;

Table of Contents

- changes in tax rates or legislation throughout the world including, but not limited to, adjustments, changes in estimates or interpretations that may impact recorded or future tax impacts associated with the Tax Cuts and Jobs Act (the "TCJA") enacted in December 2017;
- 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;
- 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 claims or litigation, including investigations or enforcement actions, 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.

Effective January 1, 2018, we adopted Accounting Standards Update 2017-07, Improving the Presentation of Net Periodic Pension Cost and Net Periodic Postretirement Benefit Cost, which clarifies the presentation and classification of the components of net periodic benefit costs in the consolidated statements of operations. See Note 3 - Recent Accounting Pronouncements in the accompanying consolidated financial statements for further information.

Also during the year ended December 31, 2018, we reorganized our operating and reportable segments to align with recent structural and management reporting changes. These changes reflect: (1) the movement of our food ingredients business from the Consumer Specialties reportable segment into our Engineered Materials reportable segment, (2) the renaming of the former Consumer Specialties reportable segment as the Acetate Tow segment, (3) the renaming of the former Advanced Engineered Materials reportable segment as the Engineered Materials segment and (4) the combination of the former Industrial Specialties and former Acetyl Intermediates operating and reportable segments into the Acetyl Chain operating and reportable segment. See Note 26 - Segment Information in the accompanying consolidated financial statements for further information.

Results of Operations

Financial Highlights

	Year Ended December 31,			Year Ended December 31,		
	2018	2017 As Adjusted (Note 3)	Change	2017 As Adjusted (Note 3)	2016	Change
	(In $ millions, except percentages)					
Statement of Operations Data						
Net sales	7,155	6,140	1,015	6,140	5,389	751
Gross profit	1,972	1,511	461	1,511	1,405	106
Selling, general and administrative ("SG&A") expenses	(546)	(496)	(50)	(496)	(378)	(118)
Other (charges) gains, net	9	(59)	68	(59)	(8)	(51)
Operating profit (loss)	1,334	857	477	857	934	(77)
Equity in net earnings (loss) of affiliates	233	183	50	183	155	28
Non-operating pension and other postretirement employee benefit (expense) income	(62)	44	(106)	44	(41)	85
Interest expense	(125)	(122)	(3)	(122)	(120)	(2)
Refinancing expense	(1)	—	(1)	—	(6)	6
Dividend income - equity investments	117	108	9	108	108	—
Earnings (loss) from continuing operations before tax	1,510	1,075	435	1,075	1,030	45
Earnings (loss) from continuing operations	1,218	862	356	862	908	(46)
Earnings (loss) from discontinued operations	(5)	(13)	8	(13)	(2)	(11)
Net earnings (loss)	1,213	849	364	849	906	(57)
Net earnings (loss) attributable to Celanese Corporation	1,207	843	364	843	900	(57)
Other Data						
Depreciation and amortization	343	305	38	305	290	15
SG&A expenses as a percentage of Net sales	7.6 %	8.1 %		8.1 %	7.0 %	
Operating margin[1]	18.6 %	14.0 %		14.0 %	17.3 %	
Other (charges) gains, net						
Restructuring	(4)	(3)	(1)	(3)	(8)	5
InfraServ ownership change	—	(4)	4	(4)	—	(4)
Asset impairments	—	—	—	—	(2)	2
Plant/office closures	13	(52)	65	(52)	—	(52)
Commercial disputes	—	—	—	—	2	(2)
Total Other (charges) gains, net	9	(59)	68	(59)	(8)	(51)

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

Table of Contents

	As of December 31,	
	2018	2017
	(In $ millions)	
Balance Sheet Data		
Cash and cash equivalents	439	576
Short-term borrowings and current installments of long-term debt - third party and affiliates	561	326
Long-term debt, net of unamortized deferred financing costs	2,970	3,315
Total debt	3,531	3,641

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, 2018 Compared to Year Ended December 31, 2017

	Volume	Price	Currency	Other	Total
	(In percentages)				
Engineered Materials	9	6	2	—	17
Acetate Tow	—	(3)	—	—	(3)
Acetyl Chain	1	19	2	(2)	20
Total Company	4	12	2	(1)	17

Year Ended December 31, 2017 Compared to Year Ended December 31, 2016

	Volume	Price	Currency	Other	Total
	(In percentages)				
Engineered Materials	44	(2)	1	—	43
Acetate Tow	(11)	(8)	—	—	(19)
Acetyl Chain	(4)	12	—	—	8
Total Company	9	5	—	—	14

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, 2018 Compared to Year Ended December 31, 2017

	Engineered Materials	Acetate Tow	Acetyl Chain	Other Activities	Total
	(In $ millions)				
Service cost	—	—	1	(1)	—
Interest cost and expected return on plan assets	—	—	—	(14)	(14)
Amortization of prior service credit	—	—	1	—	1
Special termination benefit	—	—	—	1	1
Recognized actuarial (gain) loss	—	—	—	119	119
Curtailment / settlement (gain) loss	—	—	(1)	—	(1)
Total	—	—	1	105	106

Table of Contents

Year Ended December 31, 2017 Compared to Year Ended December 31, 2016

	Engineered Materials	Acetate Tow	Acetyl Chain	Other Activities	Total
	(In $ millions)				
Service cost	1	—	1	—	2
Interest cost and expected return on plan assets	—	—	—	(28)	(28)
Amortization of prior service credit	—	—	2	—	2
Special termination benefit	(1)	—	(1)	—	(2)
Recognized actuarial (gain) loss	—	—	—	(57)	(57)
Total	—	—	2	(85)	(83)

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

Consolidated Results

Year Ended December 31, 2018 Compared to Year Ended December 31, 2017

Net sales increased $1.0 billion, or 16.5%, for the year ended December 31, 2018 compared to the same period in 2017 primarily due to:

- higher pricing in our Acetyl Chain and Engineered Materials segments; and
- higher volume in our Engineered Materials segment, primarily related to our base business driven by new project launches and pipeline growth, and Net sales generated from acquisitions. See Note 4 - Acquisitions, Dispositions and Plant Closures in the accompanying consolidated financial statements for further information.

Selling, general and administrative expenses increased $50 million, or 10.1% for the year ended December 31, 2018 compared to the same period in 2017 primarily due to:

- an increase in functional spending and incentive compensation costs of $42 million in Other Activities.

Operating profit increased $477 million, or 55.7% for the year ended December 31, 2018 compared to the same period in 2017 primarily due to:

- higher Net sales in our Acetyl Chain and Engineered Materials segments; and
- a favorable impact of $63 million to Other (charges) gains, net in our Acetyl Chain segment. During the year ended December 31, 2017, we provided notice of termination of a contract with a key raw materials supplier at our ethanol production unit in Nanjing, China. As a result, we recorded a $22 million contract termination charge and a $21 million reduction to our non-income tax receivable, which did not recur in the current year. In addition, during the year ended December 31, 2018, we received a $13 million non-income tax receivable refund from Nanjing, China. See Note 18 - Other (Charges) Gains, Net in the accompanying consolidated financial statements for further information;

partially offset by:

- higher raw material costs across all of our segments;
- higher spending of $72 million and $34 million in our Engineered Materials and Acetyl Chain segments, respectively; and
- an increase in SG&A expenses.

Equity in net earnings (loss) of affiliates increased $50 million for the year ended December 31, 2018 compared to the same period in 2017 primarily due to:

- an increase in equity investment in earnings of $38 million from our Ibn Sina strategic affiliate primarily as a result of an increase in our indirect economic ownership from 25% to 32.5% due to the startup of its polyoxymethylene ("POM") production facility in Saudi Arabia during the three months ended December 31, 2017.

Table of Contents

Non-operating pension and other postretirement employee benefit expense increased $106 million during the year ended December 31, 2018 compared to the same period in 2017 primarily due to:

- an increase in recognized actuarial loss of $119 million as a result of lower asset returns, partially offset by an increase in the weighted average discount rate used to determine benefit obligations from 3.3% to 3.8%.

Our effective tax rate for the year ended December 31, 2018 was 19% compared to 20% for the year ended 2017. The effective tax rate for 2018 was slightly less than the statutory US tax rate primarily due to the positive impact from our jurisdictional mix of earnings, largely offset by increased valuation allowances established on certain deferred tax assets, particularly related to increases in provisionally recorded estimates of valuation allowances on foreign tax credits in the US and net operating loss carryforwards in Luxembourg, due to certain restructuring transactions completed to facilitate future repatriation of cash to the US.

On December 31, 2017, the TCJA was enacted and was effective January 1, 2018. Due to the timing and significance of the TCJA, the Staff of the Securities and Exchange Commission issued Staff Accounting Bulletin No. 118, which provided registrants a measurement period through 2018 to report the impact of the new US tax law.

In 2017, we previously recorded provisional amounts for several of the impacts of the new tax law including: the deemed repatriation tax on post-1986 accumulated earnings and profits, the deferred tax rate change effect of the new law, gross foreign tax credit carryforwards and related valuation allowances to offset foreign tax credit carryforwards. As of December 31, 2018, we have completed our accounting for the TCJA, including the proposed 2018 clarifying guidance. See Note 19 - Income Taxes in the accompanying consolidated financial statements for further information.

Year Ended December 31, 2017 Compared to Year Ended December 31, 2016

Net sales increased $751 million, or 13.9%, for the year ended December 31, 2017 compared to the same period in 2016 primarily due to:

- higher volume in our Engineered Materials segment, primarily related to Net sales generated from SO.F.TER. S.r.l. ("SOFTER") and from the nylon compounding division of Nilit Group ("Nilit"), as well as within our base business, which was driven by new project launches and pipeline growth globally; and
- higher pricing for most of our products in our Acetyl Chain segment;

partially offset by:

- lower acetate tow pricing and volume in our Acetate Tow segment; and
- lower volume for ethanol in our Acetyl Chain segment.

Selling, general and administrative expenses increased $118 million, or 31.2% for the year ended December 31, 2017 compared to the same period in 2016 primarily due to:

- an increase in spending of approximately $100 million in our Engineered Materials segment and Other Activities primarily related to ongoing merger, acquisition and integration related costs.

Operating profit decreased $77 million, or 8.2%, for the year ended December 31, 2017 compared to the same period in 2016 primarily due to:

- higher raw material costs, primarily in our Acetyl Chain segment;
- higher plant spending of $138 million in our Engineered Materials segment, primarily related to our acquisitions of SOFTER and Nilit, as these acquired businesses incurred ongoing plant spending;
- an increase in SG&A expenses; and

- an unfavorable impact of $47 million to Other (charges) gains, net in our Acetyl Chain segment. During the year ended December 31, 2017, we provided notice of termination of a contract with a key raw materials supplier at our ethanol production unit in Nanjing, China. As a result, we recorded a $22 million contract termination charge and a $21 million reduction to our non-income tax receivable. See Note 18 - Other (Charges) Gains, Net in the accompanying consolidated financial statements for further information;

partially offset by:

- higher Net sales in our Engineered Materials and Acetyl Chain segments; and
- cost savings in our Acetyl Chain and Acetate Tow segments, primarily due to productivity initiatives.

Equity in net earnings (loss) of affiliates increased $28 million for the year ended December 31, 2017 compared to the same period in 2016 primarily due to:

- an increase in equity in net earnings (loss) of affiliates of $20 million from our Ibn Sina strategic affiliate as a result of higher pricing and timing of turnaround activity.

Non-operating pension and other postretirement employee benefit income increased $85 million for the year ended December 31, 2017 compared to the same period in 2016 primarily due to:

- a decrease in recognized actuarial loss of $57 million as a result of higher asset returns, partially offset by a decrease in the weighted average discount rate used to determine benefit obligations from 3.7% to 3.3%.

Our effective income tax rate for the year ended December 31, 2017 was 20% compared to 12% for the year ended 2016. The 2017 effective tax rate was impacted by the enactment of the TCJA in December 2017. We recognized net tax expense of $197 million in the fourth quarter of 2017 to reflect the deemed repatriation of foreign earnings accumulated offshore since 1986. This expense of $197 million was partially offset by a $107 million reduction of our deferred tax liabilities as a result of lowering the US tax rate from 35% to 21% and other technical provisions in the TCJA. We also recognized a net tax benefit of $76 million related to foreign tax credits generated as a result of various reorganization transactions to separate certain Acetate Tow assets to reorganize the holdings of its various foreign subsidiaries. No material cash impact is expected from the deemed repatriation due to existing foreign tax credit carryforwards. The 2016 effective income tax rate was favorably impacted primarily due to settlement of uncertain tax positions and technical clarifications in Germany and the US of $55 million. See Note 19 - Income Taxes in the accompanying consolidated financial statements for further information.

Table of Contents

Business Segments

Engineered Materials

	Year Ended December 31,		Change	% Change	Year Ended December 31,		Change	% Change
	2018	2017			2017	2016 As Adjusted (Note 3)		
	(In $ millions, except percentages)							
Net sales	2,593	2,213	380	17.2 %	2,213	1,552	661	42.6 %
Net Sales Variance								
Volume	9 %				44 %			
Price	6 %				(2) %			
Currency	2 %				1 %			
Other	— %				— %			
Other (charges) gains, net	—	(2)	2	100.0 %	(2)	(2)	—	— %
Operating profit (loss)	460	412	48	11.7 %	412	377	35	9.3 %
Operating margin	17.7 %	18.6 %			18.6 %	24.3 %		
Equity in net earnings (loss) of affiliates	218	171	47	27.5 %	171	125	46	36.8 %
Depreciation and amortization	126	111	15	13.5 %	111	95	16	16.8 %

Year Ended December 31, 2018 Compared to Year Ended December 31, 2017

Net sales increased for the year ended December 31, 2018 compared to the same period in 2017 primarily due to:

- higher volume within our base business driven by new project launches and pipeline growth, and Net sales generated from acquisitions;
- higher pricing for most of our products, primarily due to pricing efforts to align with rising raw material and distribution costs; and
- a favorable currency impact resulting from a strong Euro relative to the US dollar.

Operating profit increased for the year ended December 31, 2018 compared to the same period in 2017 primarily due to:

- higher Net sales;

partially offset by:

- higher spending of $72 million, primarily related to our acquisitions of Omni Plastics, L.L.C. and its subsidiaries ("Omni Plastics") and Nilit, as these acquired businesses incur ongoing spending, as well as increased distribution costs driven by higher volume and expansion;
- higher raw material costs, primarily for methanol and polymer; and
- higher depreciation and amortization expense, primarily related to our acquired businesses.

Equity in net earnings (loss) of affiliates increased for the year ended December 31, 2018 compared to the same period in 2017 primarily due to:

- an increase in equity investment in earnings of $38 million from our Ibn Sina strategic affiliate primarily as a result of an increase in our indirect economic ownership from 25% to 32.5% due to the startup of its POM production facility in Saudi Arabia during the three months ended December 31, 2017 and an increase in methyl tertiary-butyl ether pricing, as well as $7 million from our Polyplastics Co., Ltd. strategic affiliate as a result of higher demand.

Table of Contents

On January 2, 2019, we completed the acquisition of 100% of the ownership interests of Next Polymers Ltd., an India-based engineering thermoplastics ("ETP") compounder. The acquisition strengthens our position in the Indian ETP market and further expands our global manufacturing footprint. See Note 30 - Subsequent Events in the accompanying consolidated financial statements for further information.

On February 1, 2018, we completed the acquisition of 100% of the ownership interests of Omni Plastics. Omni Plastics specializes in custom compounding of various engineered thermoplastic materials. The acquisition further strengthens our global asset base by adding compounding capacity in the Americas. See Note 4 - Acquisitions, Dispositions and Plant Closures in the accompanying consolidated financial statements for further information.

Year Ended December 31, 2017 Compared to Year Ended December 31, 2016

Net sales increased for the year ended December 31, 2017 compared to the same period in 2016 primarily due to:

- higher volume primarily due to Net sales generated from SOFTER and from Nilit, and within our base business driven by new project launches and pipeline growth globally;

slightly offset by:

- lower pricing for most of our products due to customer and regional mix.

Operating profit increased for the year ended December 31, 2017 compared to the same period in 2016 primarily due to:

- higher Net sales;

partially offset by:

- higher plant spending of $138 million, primarily related to our acquisitions of SOFTER and Nilit, as these acquired businesses incur ongoing plant spending;
- higher energy and raw material costs, primarily related to methanol; and
- higher depreciation and amortization expense, primarily related to our acquisitions of SOFTER and Nilit.

Equity in net earnings (loss) of affiliates increased for the year ended December 31, 2017 compared to the same period in 2016 primarily due to:

- an increase in equity investment in earnings of $20 million from our Ibn Sina strategic affiliate as a result of higher pricing and timing of turnaround activity;
- an increase in equity investment in earnings of $11 million from our InfraServ GmbH & Co. Hoechst KG affiliate as a result of an ownership change between our Engineered Materials and Other Activities segments. See Note 9 - Investment in Affiliates in the accompanying consolidated financial statements for further information; and
- an increase in equity investment in earnings of $8 million and $7 million from our Fortron Industries LLC ("Fortron") and Polyplastics strategic affiliates, respectively, as a result of higher demand.

In May 2017, we acquired the nylon compounding division of Nilit, an independent producer of high performance nylon resins, fibers and compounds. We acquired the nylon compounding product portfolio, customer agreements and manufacturing, technology and commercial facilities. The acquisition of Nilit increases our global engineered materials product platforms, extends the operational model, technical and industry solutions capabilities and expands project pipelines. See Note 4 - Acquisitions, Dispositions and Plant Closures in the accompanying consolidated financial statements for further information.

Table of Contents

Acetate Tow

	Year Ended December 31,			%	Year Ended December 31,			%
	2018	2017	Change	Change	2017	2016	Change	Change
	(In $ millions, except percentages)							
Net sales	649	668	(19)	(2.8)%	668	821	(153)	(18.6)%
Net Sales Variance								
Volume	— %				(11)%			
Price	(3)%				(8)%			
Currency	— %				— %			
Other	— %				— %			
Other (charges) gains, net	(2)	(2)	—	— %	(2)	(1)	(1)	(100.0)%
Operating profit (loss)	130	189	(59)	(31.2)%	189	276	(87)	(31.5)%
Operating margin	20.0 %	28.3%			28.3 %	33.6%		
Dividend income - equity investments	116	107	9	8.4 %	107	107	—	— %
Depreciation and amortization	58	41	17	41.5 %	41	42	(1)	(2.4)%

Year Ended December 31, 2018 Compared to Year Ended December 31, 2017

Net sales decreased for the year ended December 31, 2018 compared to the same period in 2017 primarily due to:

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

Operating profit decreased for the year ended December 31, 2018 compared to the same period in 2017 primarily due to:

- lower Net sales;
- higher depreciation and amortization expense of $17 million, primarily due to the closure of our acetate tow manufacturing unit in Ocotlán, Mexico in 2018. See Note 4 - Acquisitions, Dispositions and Plant Closures in the accompanying consolidated financial statements for further information; and
- higher raw material costs, primarily related to acetic acid.

Year Ended December 31, 2017 Compared to Year Ended December 31, 2016

Net sales decreased for the year ended December 31, 2017 compared to the same period in 2016 primarily due to:

- lower acetate tow volume and pricing due to lower global industry utilization.

Operating profit decreased for the year ended December 31, 2017 compared to the same period in 2016 primarily due to:

- lower Net sales;

partially offset by:

- lower spending and raw material costs of $37 million primarily related to productivity initiatives.

In June 2017, Celanese, through various subsidiaries, entered into an agreement with affiliates of the Blackstone Group L.P. (the "Blackstone Entities") to form a joint venture which combines substantially all of the operations of our Acetate Tow business and the operations of the Rhodia Acetow cellulose acetate business formerly operated by Solvay S.A. and acquired by the Blackstone Entities in June 2017. The parties were subsequently unable to reach an agreement with the European Commission on acceptable conditions to allow the proposed joint venture to proceed. The demands by the European Commission eliminated the primary advantages of the transaction. As a result, on March 19, 2018, we and the Blackstone Entities abandoned our agreement to form the proposed joint venture.

Table of Contents

Acetyl Chain

	Year Ended December 31, 2018	Year Ended December 31, 2017 As Adjusted (Note 3)	Change	% Change	Year Ended December 31, 2017 As Adjusted (Note 3)	Year Ended December 31, 2016	Change	% Change
	(In $ millions, except percentages)							
Net sales	4,042	3,371	671	19.9 %	3,371	3,132	239	7.6 %
Net Sales Variance								
Volume	1 %				(4) %			
Price	19 %				12 %			
Currency	2 %				— %			
Other	(2) %				— %			
Other (charges) gains, net	11	(52)	63	121.2 %	(52)	(5)	(47)	(940.0)%
Operating profit (loss)	1,024	509	515	101.2 %	509	443	66	14.9 %
Operating margin	25.3 %	15.1 %			15.1 %	14.1 %		
Equity in net earnings (loss) of affiliates	6	6	—	— %	6	6	—	— %
Depreciation and amortization	148	143	5	3.5 %	143	141	2	1.4 %

Year Ended December 31, 2018 Compared to Year Ended December 31, 2017

Net sales increased for the year ended December 31, 2018 compared to the same period in 2017 primarily due to:

- higher pricing due to higher industry utilization rates, which positively impacted pricing for most of our products;
- a favorable currency impact resulting from a strong Euro relative to the US dollar; and
- higher volume for acetic acid, primarily due to higher demand and competitor outages, which represents substantially all of the increase in volume.

Operating profit increased for the year ended December 31, 2018 compared to the same period in 2017 primarily due to:

- higher Net sales; and
- a favorable impact of $63 million to Other (charges) gains, net. During the year ended December 31, 2017, we provided notice of termination of a contract with a key raw materials supplier at our ethanol production unit in Nanjing, China. As a result, we recorded a $22 million contract termination charge and a $21 million reduction to our non-income tax receivable, which did not recur in the current year. In addition, during the year ended December 31, 2018, we received a $13 million non-income tax receivable refund from Nanjing, China. See Note 18 - Other (Charges) Gains, Net in the accompanying consolidated financial statements for further information;

partially offset by:

- higher distribution and raw material costs, primarily for acetic acid, VAM and methanol, each approximately one-third of the increase; and
- higher spending of $34 million, primarily due to a duty exception in the free trade agreement between Europe and Mexico recognized during the year ended December 31, 2017, which did not recur in the current year, as well as increased freight costs.

Table of Contents

Year Ended December 31, 2017 Compared to Year Ended December 31, 2016

Net sales increased for the year ended December 31, 2017 compared to the same period in 2016 primarily due to:

- higher pricing due to higher feedstock costs, such as methanol, which positively impacted pricing for most of our products;

partially offset by:

- lower volume for ethanol in our intermediate chemistry business, which represents substantially all of the decrease in volume, due to the shutdown at our ethanol production unit in Nanjing, China.

Operating profit increased for the year ended December 31, 2017 compared to the same period in 2016 primarily due to:

- higher Net sales; and
- cost savings of $22 million in our intermediate chemistry business, primarily related to productivity initiatives and a duty exception in the free trade agreement between Europe and Mexico;

partially offset by:

- higher raw material costs, primarily for methanol, ethylene and carbon monoxide, with methanol making up approximately one-half of the increase and ethylene and carbon monoxide making up most of the remainder of the increase in raw material costs;
- an unfavorable impact of $47 million to Other (charges) gains, net. During the year ended December 31, 2017, we provided notice of termination of a contract with a key raw materials supplier at our ethanol production unit in Nanjing, China. As a result, we recorded a $22 million contract termination charge and a $21 million reduction to our non-income tax receivable. See Note 18 - Other (Charges) Gains, Net in the accompanying consolidated financial statements for further information; and
- an unfavorable impact of $19 million in direct costs associated with the planned turnaround at our Clear Lake, Texas site.

Other Activities

	Year Ended December 31,			%	Year Ended December 31,			%
	2018	2017	Change	Change	2017	2016	Change	Change
		As Adjusted (Note 3)			As Adjusted (Note 3)			
	(In $ millions)							
Other (charges) gains, net	—	(3)	3	100.0 %	(3)	—	(3)	(100.0)%
Operating profit (loss)	(280)	(253)	(27)	(10.7)%	(253)	(163)	(90)	(55.2)%
Equity in net earnings (loss) of affiliates	9	6	3	50.0 %	6	24	(18)	(75.0)%
Non-operating pension and other postretirement employee benefit (expense) income	(62)	42	(104)	(247.6)%	42	(42)	84	200.0 %
Dividend income - equity investments	1	1	—	— %	1	1	—	— %
Depreciation and amortization	11	10	1	10.0 %	10	12	(2)	(16.7)%

Table of Contents

Year Ended December 31, 2018 Compared to Year Ended December 31, 2017

Operating loss increased for the year ended December 31, 2018 compared to the same period in 2017 primarily due to:

- higher functional spending and incentive compensation costs of $42 million;

slightly offset by:

- lower project spending of $7 million.

Non-operating pension and other postretirement employee benefit expense increased for the year ended December 31, 2018 compared to the same period in 2017 primarily due to:

- an increase in recognized actuarial loss of $119 million as a result of lower asset returns, partially offset by an increase in the weighted average discount rate used to determine benefit obligations from 3.3% to 3.8%.

Year Ended December 31, 2017 Compared to Year Ended December 31, 2016

Operating loss increased for the year ended December 31, 2017 compared to the same period in 2016 primarily due to:

- higher spending of approximately $60 million, primarily related to ongoing merger, acquisition and integration related costs; and
- higher incentive compensation cost of $26 million.

Equity in net earnings (loss) of affiliates decreased for the year ended December 31, 2017 compared to the same period in 2016 primarily due to:

- a decrease in equity investment in earnings of $11 million from our InfraServ GmbH & Co. Hoechst KG affiliate as a result of an ownership change between our Engineered Materials and Other Activities segments. See Note 9 - Investment in Affiliates in the accompanying consolidated financial statements for further information; and
- a decrease in equity investment in earnings of $4 million for InfraServ GmbH & Co. Gendorf KG and InfraServ GmbH & Co. Knapsack KG associated with a reserve for dividends received from these investments since the partner's option exercise notification was received. See Note 18 - Other (Charges) Gains, Net in the accompanying consolidated financial statements for further information.

Non-operating pension and other postretirement employee benefit income increased for the year ended December 31, 2017 compared to the same period in 2016 primarily due to:

- a decrease in recognized actuarial loss of $57 million as a result of higher asset returns, partially offset by a decrease in the weighted average discount rate used to determine benefit obligations from 3.7% to 3.3%.

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, 2018 we have $960 million available for borrowing under our senior unsecured revolving credit facility and $14 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, for the next twelve months. 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 $350 million to $400 million in 2019 primarily due to additional investments in growth opportunities in our Engineered Materials and Acetyl Chain 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 common stock, par value $0.0001 per share ("Common Stock").

We are subject to capital controls and exchange restrictions imposed by the local governments in certain jurisdictions where we operate, such as China, India, and Indonesia. Capital controls impose limitations on our ability to exchange currencies, repatriate earnings or capital, lend via intercompany loans or create cross-border cash pooling arrangements. Our largest exposure to a country with capital controls is in China. Pursuant to applicable regulations, foreign-invested enterprises in China may pay dividends only out of their accumulated profits, if any, determined in accordance with Chinese accounting standards and regulations. In addition, the Chinese government imposes certain currency exchange controls on cash transfers out of China, puts certain limitations on duration, purpose and amount of intercompany loans, and restricts cross-border cash pooling.

Cash Flows

Cash and cash equivalents decreased $137 million to $439 million as of December 31, 2018 compared to December 31, 2017. As of December 31, 2018, $368 million of the $439 million of cash and cash equivalents was held by our foreign subsidiaries. Under the TCJA, we have incurred a charge associated with the repatriation of previously unremitted foreign earnings, including foreign held cash. These funds are largely accessible, if needed in the US to fund operations. See Note 19 - Income Taxes in the accompanying consolidated financial statements for further information.

- Net Cash Provided by (Used in) Operating Activities

Year Ended December 31, 2018 Compared to Year Ended December 31, 2017

Net cash provided by operating activities increased $755 million to $1.6 billion for the year ended December 31, 2018 compared to $803 million for the same period in 2017. Net cash provided by operations for the year ended December 31, 2018 increased primarily due to:

- an increase in net earnings; and
- a decrease of $316 million in pension and other postretirement contributions;

slightly offset by:

- unfavorable trade working capital of $110 million related to timing of settlement of trade payables.

45

Table of Contents

Year Ended December 31, 2017 Compared to Year Ended December 31, 2016

Net cash provided by operating activities decreased $90 million to $803 million for the year ended December 31, 2017 compared to $893 million for the same period in 2016. Net cash provided by operations for the year ended December 31, 2017 decreased primarily due to:

- a decrease in net earnings; and
- unfavorable trade working capital of $37 million primarily due to an increase in accounts receivable and inventory related to SOFTER.

Net Cash Provided by (Used in) Investing Activities

Year Ended December 31, 2018 Compared to Year Ended December 31, 2017

Net cash used in investing activities decreased $42 million to $507 million for the year ended December 31, 2018 compared to $549 million for the same period in 2017, primarily due to:

- a net cash outflow of $269 million related to the acquisition of Nilit in May 2017, which did not recur in the current year;

partially offset by:

- a net cash outflow of $144 million related to the acquisition of Omni Plastics in February 2018; and
- an increase of $70 million in capital expenditures related to growth opportunities in our Acetyl Chain and Engineered Materials segments.

Year Ended December 31, 2017 Compared to Year Ended December 31, 2016

Net cash used in investing activities increased $110 million to $549 million for the year ended December 31, 2017 compared to $439 million for the same period in 2016, primarily due to:

- a net increase in cash outflows of $91 million related to the acquisition of Nilit in May 2017.

Net Cash Provided by (Used in) Financing Activities

Year Ended December 31, 2018 Compared to Year Ended December 31, 2017

Net cash used in financing activities increased $814 million to $1.2 billion for the year ended December 31, 2018 compared to $351 million for the same period in 2017, primarily due to:

- an increase of $305 million in share repurchases of our Common Stock during the year ended December 31, 2018;
- a decrease in net proceeds from long-term debt of $249 million, primarily as a result of the repayment of our senior unsecured term loan during the year ended December 31, 2018 with proceeds from the issuance of €500 million in principal amount of 2.125% senior unsecured notes due March 1, 2027 ("2.125% Notes"), as discussed below;
- a decrease in net borrowings on short-term debt of $234 million, primarily as a result of higher net borrowings under our revolving credit facility and accounts receivable securitization facility during the year ended December 31, 2017 in connection with the acquisition of Nilit, which did not recur in the current year; and
- an increase in Common Stock cash dividends of $39 million. During the year ended December 31, 2018, we increased our Common Stock quarterly cash dividend rate from $0.46 to $0.54 per share.

Table of Contents

Year Ended December 31, 2017 Compared to Year Ended December 31, 2016

Net cash used in financing activities decreased $408 million to $351 million for the year ended December 31, 2017 compared to $759 million for the same period in 2016. The decrease in cash used in financing activities is primarily due to:

- an increase in net borrowings on short-term debt of $558 million, primarily as a result of borrowings under our senior unsecured revolving credit facility and accounts receivable securitization facility during the year ended December 31, 2017, as well as repayments of borrowings under our senior unsecured revolving credit facility during the year ended December 31, 2016, which did not recur in 2017;

partially offset by:

- a decrease in net proceeds from long-term debt of $108 million, primarily due to the refinancing of our senior secured credit facilities during the year ended December 31, 2016, partially offset by the senior unsecured debt issuance during the year ended December 31, 2017, as discussed below; and
- an increase in Common Stock cash dividends of $40 million. During the year ended December 31, 2017, we increased our Common Stock quarterly cash dividend rate from $0.36 to $0.46 per share.

In addition, exchange rates had an unfavorable impact of $23 million on cash and cash equivalents, a favorable impact of $35 million on cash and cash equivalents and an unfavorable impact of $24 million on cash and cash equivalents for the years ended December 31, 2018, 2017 and 2016, respectively.

Debt and Other Obligations

- Senior Credit Facilities

In July 2016, Celanese, Celanese US and certain subsidiaries entered into a new senior credit agreement ("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 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 $940 million and repaid $997 million under our senior unsecured revolving credit facility during the year ended December 31, 2018. See Note 30 - Subsequent Events in the accompanying consolidated financial statements for further information.

- 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
2.125% Notes	November 2018	€500	2.125	March 1		March 1, 2027
1.250% Notes	December 2017	€300	1.250	February 11		February 11, 2025
1.125% Notes	September 2016	€750	1.125	September 26		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

Table of Contents

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 November 5, 2018, Celanese US completed an offering of the 2.125% Notes in a public offering registered under the Securities Act. The 2.125% Notes were issued under a base indenture dated May 6, 2011. The 2.125% Notes were issued at a discount to par at a price of 99.231%. Net proceeds from the sale of the 2.125% Notes were used to repay $463 million of our senior unsecured term loan and for general corporate purposes.

In December 2017, Celanese US completed an offering of the 1.250% Notes in a public offering registered under the Securities Act. The 1.250% Notes were issued under a base indenture dated May 6, 2011. The 1.250% Notes were issued at a discount to par at a price of 99.810%. Net proceeds from the sale of the 1.250% Notes were used to make a discretionary contribution into our US pension plans of $316 million and for general corporate purposes.

In September 2016, Celanese US completed an 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.

•Other Financing Arrangements

During the year ended December 31, 2018, we entered into a factoring agreement with a global financial institution to sell certain accounts receivable on a non-recourse basis. These transactions are treated as a sale and are accounted for as a reduction in accounts receivable because the agreement transfers effective control over and risk related to the receivables to the buyer. We have no continuing involvement in the transferred receivables, other than collection and administrative responsibilities and, once sold, the accounts receivable are no longer available to satisfy creditors in the event of bankruptcy. We de-recognized $117 million of accounts receivable during the year ended December 31, 2018.

In July 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 borrowed $25 million and repaid $28 million during the year ended December 31, 2018.

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, 2018.

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

Share Capital

On September 17, 2018, we filed with the Secretary of State of Delaware a Certificate of Amendment (the "Certificate of Amendment") to our Second Amended and Restated Certificate of Incorporation, as amended, to remove all references to our Series B Common Stock, par value $0.0001 per share, therefrom and to redesignate our Series A Common Stock, par value $0.0001 per share, as "Common Stock." Following the filing of the Certificate of Amendment, we no longer have series of our class of common stock.

On February 6, 2019, we declared a quarterly cash dividend of $0.54 per share on our Common Stock amounting to $69 million. The cash dividend will be paid on March 1, 2019 to holders of record as of February 19, 2019.

Our Board of Directors has authorized the aggregate repurchase of $3.9 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, 2018, we repurchased shares of our Common Stock at an aggregate cost of $817 million. As of December 31, 2018, we had $713 million remaining under authorizations by our Board of Directors.

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

Table of Contents

Contractual Debt and Cash Obligations

The following table sets forth our fixed contractual debt and cash obligations as of December 31, 2018:

	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	3,011	343	400	1,357	911
Interest payments on debt and other obligations	510 (1)	114	180	105	111
Capital lease obligations	167	24	54	39	50
Other debt	371 (2)	194	3	3	171
Total	4,059	675	637	1,504	1,243
Operating leases	276	43	59	44	130
Uncertain tax positions, including interest and penalties	158	—	—	—	158 (3)
Unconditional purchase obligations	1,404 (4)	365	498	185	356
Pension and other postretirement funding obligations	457	48	92	91	226
Environmental and asset retirement obligations	85	23	19	15	28
Total	6,439	1,154	1,305	1,839	2,141

---

(1) Future interest expense is calculated using the rate in effect on December 31, 2018.

(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".

(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, obtained via a survey of Celanese, 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.

Contractual Guarantees and Commitments

As of December 31, 2018, we have standby letters of credit of $29 million and bank guarantees of $9 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 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.

Table of Contents

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 reporting units include our engineered materials, acetate tow, food ingredients, emulsion 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.

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, an impairment loss is recorded in the amount by which the carrying amount exceeds the reporting unit's fair value. 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.

Valuation methodologies utilized to evaluate goodwill and indefinite-lived intangible 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.

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

• Environmental Liabilities

We manufacture and sell a diverse line of chemical products throughout the world. Accordingly, our operations are subject to various hazards incidental to the production of industrial chemicals including the use, handling, processing, storage and transportation of hazardous materials. We recognize losses and accrue 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, we accrue through 15 years, unless we have government orders or other agreements that extend beyond 15 years. We estimate 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 our periodic estimate of what it will cost to perform each of the elements of the remediation effort. We utilize third parties to assist in the management and development of cost estimates for our 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.

See Note 16 - Environmental 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.

Table of Contents

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.

The estimated change in pension and postretirement net periodic benefit cost that would occur in 2019 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 %	(8)
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 %	—

---

(1) Excludes nonqualified pension plans.

Legal Proceedings

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 24 - Commitments and Contingencies in the accompanying consolidated financial statements for further information.

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, 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.

Table of Contents

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.

Recent Accounting Pronouncements

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

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. Our largest exposures are to the Euro and Chinese Yuan ("CNY"). A decline in the value of the Euro and CNY versus the US dollar results in a decline in the US dollar value of our sales and earnings denominated in Euros and CNYs due to translation effects. Likewise, an increase in the value of the Euro and CNY versus the US dollar would result in an opposite effect. We estimate that a 10% change in the Euro/US dollar and CNY/US dollar exchange rates would impact our earnings by $70 million and $25 million, respectively.

Table of Contents

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.

CELANESE CORPORATION AND SUBSIDIARIES

CONSOLIDATED STATEMENTS OF OPERATIONS

	Three Months Ended			
	March 31, 2018	June 30, 2018	September 30, 2018	December 31, 2018
	(Unaudited)			
	(In $ millions, except per share data)			
Net sales	1,851	1,844	1,771	1,689
Gross profit	515	521	516	420
Other (charges) gains, net	—	(3)	12	—
Operating profit (loss)	343	358	374	259
Earnings (loss) from continuing operations before tax	432	442	462	174
Amounts attributable to Celanese Corporation				
Earnings (loss) from continuing operations	365	344	407	96
Earnings (loss) from discontinued operations	(2)	—	(6)	3
Net earnings (loss)	363	344	401	99
Earnings (loss) per common share - basic				
Continuing operations	2.69	2.54	3.02	0.73
Net earnings (loss)	2.67	2.54	2.98	0.75
Earnings (loss) per common share - diluted				
Continuing operations	2.68	2.52	3.00	0.73
Net earnings (loss)	2.66	2.52	2.96	0.75

Table of Contents

	Three Months Ended			
	March 31, 2017	June 30, 2017	September 30, 2017	December 31, 2017
	As Adjusted (Note 3)			
	(Unaudited)			
	(In $ millions, except per share data)			
Net sales	1,471	1,510	1,566	1,593
Gross profit	350	365	383	413
Other (charges) gains, net	(55)	(2)	—	(2)
Operating profit (loss)	170	218	229	240
Earnings (loss) from continuing operations before tax	240	281	289	265
Amounts attributable to Celanese Corporation				
Earnings (loss) from continuing operations	183	239	230	204
Earnings (loss) from discontinued operations	—	(8)	(4)	(1)
Net earnings (loss)	183	231	226	203
Earnings (loss) per common share - basic				
Continuing operations	1.30	1.73	1.68	1.50
Net earnings (loss)	1.30	1.67	1.65	1.49
Earnings (loss) per common share - diluted				
Continuing operations	1.30	1.72	1.68	1.50
Net earnings (loss)	1.30	1.66	1.65	1.49

Table of Contents

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, 2018, 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, 2018, 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. Based on this evaluation, management concluded that the Company's internal control over financial reporting was effective as of December 31, 2018. 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 on page 63.

Item 9B. Other Information

None.

Table of Contents

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," "Board and Committee Governance," "Additional Governance Features," 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 2019 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 "2019 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 investors.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 2019 Proxy Statement.

Table of Contents

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 2019 Proxy Statement.

Equity Compensation Plans

Securities Authorized for Issuance Under Equity Compensation Plans

The following information is provided as of December 31, 2018 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	2,045,092 [1]	$ 45.56	21,025,352 [2]

(1) Includes (a) options to purchase 34,140 shares of the Company's common stock, par value $0.0001 per share ("Common Stock") under the Celanese Corporation 2009 Global Incentive Plan, as amended and restated April 19, 2012 (the "2009 Plan"), and (b) 1,960,949 restricted stock units ("RSUs") granted under the 2009 Plan, and 50,003 RSUs granted under the Celanese Corporation 2018 Global Incentive Plan (the "2018 Plan"), including shares that may be issued pursuant to outstanding performance-based RSUs, assuming currently estimated maximum potential performance; actual shares issued 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 RSUs outstanding would be 1,232,740. Also includes 41,734 share equivalents attributable to RSUs deferred by non-management directors under the Company's 2008 Deferred Compensation Plan (and dividends applied to previous deferrals) and distributable in the form of shares of Common Stock under the 2009 Plan. Upon vesting, a share of the Company's Common Stock is issued for each RSU. Column (b) does not take any of these RSU awards into account because they do not have an exercise price.

(2) Includes shares available for future issuance under the 2018 Plan and the Celanese Corporation 2009 Employee Stock Purchase Plan approved by stockholders on April 23, 2009 (the "ESPP"). As of December 31, 2018, an aggregate of 7,256,282 shares were available for future issuance under the 2018 Plan and 13,769,070 shares of our Common Stock were available for future issuance under the ESPP. As of December 31, 2018, 230,930 shares have been offered for purchase under the ESPP.

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 2019 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 3: Ratification of Independent Registered Public Accounting Firm" of the 2019 Proxy Statement.

Table of Contents

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 63 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.

Table of Contents

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 7, 2019

POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints Scott A. Richardson and Benita M. Casey, 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, 2018 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 7, 2019
/s/ SCOTT A. RICHARDSON Scott A. Richardson	Senior Vice President and Chief Financial Officer (Principal Financial Officer)	February 7, 2019
/s/ BENITA M. CASEY Benita M. Casey	Vice President, Finance, Controller and Chief Accounting Officer (Principal Accounting Officer)	February 7, 2019
/s/ JEAN S.	Director	February 7, 2019

BLACKWELL Jean S. Blackwell		
/s/ WILLIAM M. BROWN William M. Brown	Director	February 7, 2019
/s/ EDWARD G. GALANTE Edward G. Galante	Director	February 7, 2019
/s/ KATHRYN M. HILL Kathryn M. Hill	Director	February 7, 2019

Table of Contents

Signature	Title	Date
/s/ DAVID F. HOFFMEISTER David F. Hoffmeister	Director	February 7, 2019
/s/ JAY V. IHLENFELD Jay V. Ihlenfeld	Director	February 7, 2019
/s/ KIM K.W. RUCKER Kim K.W. Rucker	Director	February 7, 2019
/s/ JOHN K. WULFF John K. Wulff	Director	February 7, 2019

Table of Contents

CELANESE CORPORATION AND SUBSIDIARIES
INDEX TO CONSOLIDATED FINANCIAL STATEMENTS

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

Opinions on the Consolidated Financial Statements and Internal Control over Financial Reporting

We have audited the accompanying consolidated balance sheets of Celanese Corporation and subsidiaries (the Company) as of December 31, 2018 and 2017, 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, 2018, and the related notes (collectively, the consolidated financial statements). We also have audited the Company's internal control over financial reporting as of December 31, 2018, based on criteria established in Internal Control - Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission.

In our opinion, the consolidated financial statements referred to above, present fairly, in all material respects, the financial position of the Company as of December 31, 2018 and 2017, and the results of its operations and its cash flows for each of the years in the three-year period ended December 31, 2018, in conformity with U.S. generally accepted accounting principles. Also in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2018 based on criteria established in Internal Control - Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission.

Basis for Opinion

The Company's management is responsible for these consolidated financial statements, for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying Report of Management on Internal Control Over Financial Reporting. Our responsibility is to express an opinion on the Company's consolidated financial statements and an opinion on the Company's internal control over financial reporting based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud, and whether effective internal control over financial reporting was maintained in all material respects.

Our audits of the consolidated financial statements included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audits also included performing such other procedures as we considered necessary in the circumstances. We believe that our audits provide a reasonable basis for our opinions.

Definition and Limitations of Internal Control over Financial Reporting

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Table of Contents

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

/s/ KPMG LLP

We have served as the Company's auditor since 2004.

Dallas, Texas

February 7, 2019

Table of Contents

CELANESE CORPORATION AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF OPERATIONS

	Year Ended December 31,		
	2018	2017 As Adjusted (Note 3)	2016
	(In $ millions, except share and per share data)		
Net sales	7,155	6,140	5,389
Cost of sales	(5,183)	(4,629)	(3,984)
Gross profit	1,972	1,511	1,405
Selling, general and administrative expenses	(546)	(496)	(378)
Amortization of intangible assets	(24)	(20)	(9)
Research and development expenses	(72)	(73)	(78)
Other (charges) gains, net	9	(59)	(8)
Foreign exchange gain (loss), net	—	(1)	(1)
Gain (loss) on disposition of businesses and assets, net	(5)	(5)	3
Operating profit (loss)	1,334	857	934
Equity in net earnings (loss) of affiliates	233	183	155
Non-operating pension and other postretirement employee benefit (expense) income	(62)	44	(41)
Interest expense	(125)	(122)	(120)
Refinancing expense	(1)	—	(6)
Interest income	6	2	2
Dividend income - equity investments	117	108	108
Other income (expense), net	8	3	(2)
Earnings (loss) from continuing operations before tax	1,510	1,075	1,030
Income tax (provision) benefit	(292)	(213)	(122)
Earnings (loss) from continuing operations	1,218	862	908
Earnings (loss) from operation of discontinued operations	(5)	(16)	(3)
Gain (loss) on disposition of discontinued operations	—	—	—
Income tax (provision) benefit from discontinued operations	—	3	1
Earnings (loss) from discontinued operations	(5)	(13)	(2)
Net earnings (loss)	1,213	849	906
Net (earnings) loss attributable to noncontrolling interests	(6)	(6)	(6)
Net earnings (loss) attributable to Celanese Corporation	1,207	843	900
Amounts attributable to Celanese Corporation			
Earnings (loss) from continuing operations	1,212	856	902
Earnings (loss) from discontinued operations	(5)	(13)	(2)
Net earnings (loss)	1,207	843	900
Earnings (loss) per common share - basic			
Continuing operations	9.03	6.21	6.22
Discontinued operations	(0.04)	(0.10)	(0.01)
Net earnings (loss) - basic	8.99	6.11	6.21
Earnings (loss) per common share - diluted			
Continuing operations	8.95	6.19	6.19
Discontinued operations	(0.04)	(0.10)	(0.01)
Net earnings (loss) - diluted	8.91	6.09	6.18
Weighted average shares - basic	134,305,269	137,902,667	144,939,433

Weighted average shares - diluted	135,416,858	138,317,395	145,668,181

See the accompanying notes to the consolidated financial statements.

Table of Contents

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

	Year Ended December 31,		
	2018	2017	2016
	(In $ millions)		
Net earnings (loss)	1,213	849	906
Other comprehensive income (loss), net of tax			
Unrealized gain (loss) on marketable securities	—	(1)	—
Foreign currency translation	(60)	174	(11)
Gain (loss) on cash flow hedges	(10)	(1)	5
Pension and postretirement benefits	—	9	(4)
Total other comprehensive income (loss), net of tax	(70)	181	(10)
Total comprehensive income (loss), net of tax	1,143	1,030	896
Comprehensive (income) loss attributable to noncontrolling interests	(6)	(6)	(6)
Comprehensive income (loss) attributable to Celanese Corporation	1,137	1,024	890

See the accompanying notes to the consolidated financial statements.

Table of Contents

CELANESE CORPORATION AND SUBSIDIARIES
CONSOLIDATED BALANCE SHEETS

	As of December 31,	
	2018	2017
	(In $ millions, except share data)	
ASSETS		
Current Assets		
Cash and cash equivalents (variable interest entity restricted - 2018: $24; 2017: $19)	439	576
Trade receivables - third party and affiliates (net of allowance for doubtful accounts - 2018: $10; 2017: $9; variable interest entity restricted - 2018: $6; 2017: $5)	1,017	986
Non-trade receivables, net	301	244
Inventories	1,046	900
Marketable securities, at fair value	31	32
Other assets	40	54
Total current assets	2,874	2,792
Investments in affiliates	979	976
Property, plant and equipment (net of accumulated depreciation - 2018: $2,803; 2017: $2,584; variable interest entity restricted - 2018: $659; 2017: $697)	3,719	3,762
Deferred income taxes	84	366
Other assets (variable interest entity restricted - 2018: $5; 2017: $6)	290	338
Goodwill	1,057	1,003
Intangible assets, net (variable interest entity restricted - 2018: $23; 2017: $25)	310	301
Total assets	9,313	9,538
LIABILITIES AND EQUITY		
Current Liabilities		
Short-term borrowings and current installments of long-term debt - third party and affiliates	561	326
Trade payables - third party and affiliates	819	807
Other liabilities	343	354
Income taxes payable	56	72
Total current liabilities	1,779	1,559
Long-term debt, net of unamortized deferred financing costs	2,970	3,315
Deferred income taxes	255	211
Uncertain tax positions	158	156
Benefit obligations	564	585
Other liabilities	208	413
Commitments and Contingencies		
Stockholders' Equity		
Preferred stock, $0.01 par value, 100,000,000 shares authorized (2018 and 2017: 0 issued and outstanding)	—	—
Common stock, $0.0001 par value, 400,000,000 shares authorized (2018: 168,418,954 issued and 128,095,849 outstanding; 2017: 168,156,969 issued and 135,769,256 outstanding)	—	—
Treasury stock, at cost (2018: 40,323,105 shares; 2017: 32,387,713 shares)	(2,849)	(2,031)
Additional paid-in capital	233	175
Retained earnings	5,847	4,920
Accumulated other comprehensive income (loss), net	(247)	(177)
Total Celanese Corporation stockholders' equity	2,984	2,887

Noncontrolling interests	395	412
Total equity	3,379	3,299
Total liabilities and equity	9,313	9,538

See the accompanying notes to the consolidated financial statements.

67

Table of Contents

CELANESE CORPORATION AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF EQUITY

	Year Ended December 31,					
	2018		2017		2016	
	Shares	Amount	Shares	Amount	Shares	Amount
	(In $ millions, except share data)					
Common Stock						
Balance as of the beginning of the period	135,769,256	—	140,660,447	—	146,782,297	—
Stock option exercises	—	—	20,151	—	194,872	—
Purchases of treasury stock	(7,935,392)	—	(5,436,803)	—	(7,034,420)	—
Stock awards	261,985	—	525,461	—	717,698	—
Balance as of the end of the period	128,095,849	—	135,769,256	—	140,660,447	—
Treasury Stock						
Balance as of the beginning of the period	32,387,713	(2,031)	26,950,910	(1,531)	19,916,490	(1,031)
Purchases of treasury stock, including related fees	7,935,392	(818)	5,436,803	(500)	7,034,420	(500)
Balance as of the end of the period	40,323,105	(2,849)	32,387,713	(2,031)	26,950,910	(1,531)
Additional Paid-In Capital						
Balance as of the beginning of the period		175		157		136
Stock-based compensation, net of tax		58		23		8
Stock option exercises, net of tax		—		1		13
Affiliate purchase of shares from noncontrolling interests		—		(6)		—
Balance as of the end of the period		233		175		157
Retained Earnings						
Balance as of the beginning of the period		4,920		4,320		3,621
Cumulative effect adjustment from adoption of new accounting standard (Note 2)		—		(1)		—
Net earnings (loss) attributable to Celanese Corporation		1,207		843		900
Common stock dividends		(280)		(241)		(201)
Restricted stock unit dividends		—		(1)		—
Balance as of the end of the period		5,847		4,920		4,320
Accumulated Other Comprehensive Income (Loss), Net						
Balance as of the beginning of the period		(177)		(358)		(348)
Other comprehensive income (loss), net of tax		(70)		181		(10)
Balance as of the end of the period		(247)		(177)		(358)
Total Celanese Corporation stockholders' equity		2,984		2,887		2,588
Noncontrolling Interests						
Balance as of the beginning of the period		412		433		451
Net earnings (loss) attributable to noncontrolling interests		6		6		6
(Distributions to) contributions from noncontrolling interests		(23)		(27)		(24)
Balance as of the end of the period		395		412		433
Total equity		3,379		3,299		3,021

See the accompanying notes to the consolidated financial statements.

Table of Contents

CELANESE CORPORATION AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF CASH FLOWS

	Year Ended December 31,		
	2018	2017	2016
	(In $ millions)		
Operating Activities			
Net earnings (loss)	1,213	849	906
Adjustments to reconcile net earnings (loss) to net cash provided by (used in) operating activities			
Asset impairments	—	—	2
Depreciation, amortization and accretion	349	310	295
Pension and postretirement net periodic benefit cost	(92)	(80)	(54)
Pension and postretirement contributions	(47)	(363)	(350)
Actuarial (gain) loss on pension and postretirement plans	165	46	103
Pension curtailments and settlements, net	(1)	—	—
Deferred income taxes, net	137	(152)	83
(Gain) loss on disposition of businesses and assets, net	7	5	2
Stock-based compensation	71	47	31
Undistributed earnings in unconsolidated affiliates	(12)	(52)	(24)
Other, net	26	12	15
Operating cash provided by (used in) discontinued operations	(10)	8	2
Changes in operating assets and liabilities			
Trade receivables - third party and affiliates, net	(48)	(110)	(59)
Inventories	(158)	(97)	8
Other assets	(113)	(7)	39
Trade payables - third party and affiliates	15	126	7
Other liabilities	56	261	(113)
Net cash provided by (used in) operating activities	1,558	803	893
Investing Activities			
Capital expenditures on property, plant and equipment	(337)	(267)	(246)
Acquisitions, net of cash acquired	(144)	(269)	(178)
Proceeds from sale of businesses and assets, net	13	1	12
Other, net	(39)	(14)	(27)
Net cash provided by (used in) investing activities	(507)	(549)	(439)
Financing Activities			
Net change in short-term borrowings with maturities of 3 months or less	(38)	111	(352)
Proceeds from short-term borrowings	51	182	53
Repayments of short-term borrowings	(78)	(124)	(90)
Proceeds from long-term debt	561	351	1,509
Repayments of long-term debt	(536)	(77)	(1,127)
Purchases of treasury stock, including related fees	(805)	(500)	(500)
Stock option exercises	—	1	6
Common stock dividends	(280)	(241)	(201)
(Distributions to) contributions from noncontrolling interests	(23)	(27)	(24)
Other, net	(17)	(27)	(33)
Net cash provided by (used in) financing activities	(1,165)	(351)	(759)
Exchange rate effects on cash and cash equivalents	(23)	35	(24)
Net increase (decrease) in cash and cash equivalents	(137)	(62)	(329)

Cash and cash equivalents as of beginning of period	576	638	967
Cash and cash equivalents as of end of period	439	576	638

See the accompanying notes to the consolidated financial statements.

Table of Contents

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 produces high performance engineered polymers that are used in a variety of high-value applications, as well as acetyl products, which are intermediate chemicals for nearly all major industries. The Company also engineers and manufactures a wide variety of products essential to everyday living. The Company's broad product portfolio serves a diverse set of end-use applications including automotive, chemical additives, construction, consumer and industrial adhesives, consumer and medical, energy storage, filtration, food and beverage, paints and coatings, paper and packaging, performance industrial and textiles.

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 primarily due to (1) adoption of ASU 2017-07 (defined below in Note 3) and (2) to conform to the presentation of the Company's current reportable segments (Note 26).

2. Summary of Accounting Policies

Critical Accounting Policies

Recoverability of Goodwill and Indefinite-Lived Assets

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 in Other (charges) gains, net in the consolidated statements of operations.

Table of Contents

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.
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.

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.

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.

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.

Table of Contents

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 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 did not affect the measurement of the Company's total benefit obligations as the change in service and interest cost was completely offset in the annual actuarial (gain) loss reported. The Company accounted for this change prospectively as a change in estimate 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.

• 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.

Legal Proceedings

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.

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 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.

Table of Contents

Other 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.

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, tax 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.

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

Table of Contents

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 in equity securities 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 in equity securities where the Company does not exercise significant influence are accounted for at fair value or, if such investments do not have a readily determinable fair value, an election may be made to measure them at cost after considering observable price changes for similar instruments, minus impairment, if any. 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. Further, these investments were determined not to have a readily determinable fair value. Accordingly, these investments are accounted for using the alternative measure described above.

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, tax 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 in Other (charges) gains, net in the consolidated statements of operations.

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

The Company entered into a forward-starting interest rate swap to mitigate the risk of variability in the benchmark interest rate for an expected debt issuance in 2021. The interest rate swap agreement is designated as a cash flow hedge. Accordingly, to the extent the cash flow hedge is effective, changes in the fair value of the interest rate swap are 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.

• 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.

• 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

Table of Contents

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.

77

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.

Revenue Recognition

Revenue is recognized when performance obligations under the terms of a contract with a customer are satisfied. The majority of the Company's contracts have a single performance obligation to transfer products. Accordingly, the Company recognizes revenue when title and risk of loss have been transferred to the customer, generally at the time of shipment of products. Revenue is measured as the amount of consideration the Company expects to receive in exchange for transferring products and is generally based upon a negotiated, formula, list or fixed price. The Company sells its products both directly to customers and through distributors generally under agreements with payment terms typically less than 90 days.

The Company has elected to account for shipping and handling as activities to fulfill the promise to transfer the good. As such, 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. The Company has elected to exclude from Net sales any value add, sales and other taxes which it collects concurrent with revenue-producing activities. These accounting policy elections are consistent with the manner in which the Company historically recorded shipping and handling fees and taxes.

Contract Estimates

The nature of certain of the Company's contracts gives rise to variable consideration, which may be constrained, including retrospective volume-based rebates to certain customers. The Company issues retrospective volume-based rebates to customers when they purchase a certain volume level, and the rebates are applied retroactively to prior purchases. The Company also issues prospective volume-based rebates to customers when they purchase a certain volume level, and the rebates are applied to future purchases. Prospective volume-based rebates represent a material right within the contract and therefore are considered to be separate performance obligations. For both retrospective and prospective volume-based rebates, the Company estimates the level of volumes based on anticipated purchases at the beginning of the period and records a rebate accrual for each purchase toward the requisite rebate volume. These estimated rebates are included in the transaction price of the Company's contracts with customers as a reduction to Net sales and are included in Current Other liabilities in the consolidated balance sheets (Note 12). This methodology is consistent with the manner in which the Company historically estimated and recorded volume-based rebates.

The majority of the Company's revenue is derived from contracts (i) with an original expected length of one year or less and (ii) contracts for which it recognizes revenue at the amount in which it has the right to invoice as product is delivered. The Company has elected the practical expedient not to disclose the value of remaining performance obligations associated with these types of contracts. However, the Company has certain contracts that represent take-or-pay revenue arrangements in which the Company's performance obligations extend over multiple years. As of December 31, 2018, the Company had $791 million of remaining performance obligations related to take-or-pay contracts. The Company expects to recognize approximately $204 million of its remaining performance obligations as Net sales in 2019, $239 million in 2020, an additional $148 million in 2021 and the balance thereafter.

The Company has certain contracts which contain performance obligations which are immaterial in the context of the contract with the customer. The Company has elected the practical expedient not to assess whether these promised goods or services are performance obligations.

Contract Balances

Contract liabilities primarily relate to advances or deposits received from the Company's customers before revenue is recognized. These amounts are recorded as deferred revenue and are included in Noncurrent Other liabilities in the consolidated balance sheets (Note 13).

The Company does not have any material contract assets as of December 31, 2018.

Table of Contents

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 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 generally cliff-vest three years from the date of grant. Compensation expense for performance-based RSUs is recognized over the vesting period of the respective grant on a straight-line basis. Historically, the Company recognized share-based compensation net of estimated forfeitures over the vesting period of the respective grant. Effective January 1, 2017, the Company elected to change its accounting policy to recognize forfeitures as they occur. The new forfeiture policy election was adopted using a modified retrospective approach with a cumulative effect adjustment of $1 million to Retained earnings as of January 1, 2017.
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 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 2018 Global Incentive Plan ("2018 GIP"), the Company may not grant RSUs with the right to participate in dividends or dividend equivalents prior to vesting.
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.

Table of Contents

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 August 2018, the FASB issued ASU 2018-14, Disclosure Framework - Changes to the Disclosure Requirements for Defined Benefit Plans.	The new guidance modifies the disclosure requirements for employers that sponsor defined benefit pension or other postretirement plans by removing disclosures that no longer are considered cost beneficial, clarifying the specific requirements of disclosures and adding disclosure requirements identified as relevant.	January 1, 2020. Early adoption is permitted.	The Company is currently evaluating the impact of adoption on its financial statement disclosures.
In February 2018, the FASB issued ASU 2018-02, Reclassification of Certain Tax Effects from Accumulated Other Comprehensive Income.	The new guidance allows a reclassification from accumulated other comprehensive income to retained earnings for stranded tax effects resulting from the Tax Cuts and Jobs Act and will improve the usefulness of information reported to financial statement users.	January 1, 2019. Early adoption is permitted.	The Company has completed its assessment and will adopt the new guidance effective January 1, 2019. The adoption of the new guidance will not have a material impact to the Company.
In August 2017, the FASB issued ASU 2017-12, Targeted Improvements to Accounting for Hedging Activities.	The new guidance improves the financial reporting of hedging relationships to better portray the economic results of an entity's risk management activities in its financial statements through changes to both the designation and measurement guidance for qualifying hedging relationships and the presentation of hedge results.	January 1, 2019. Early adoption is permitted.	The Company adopted the new guidance effective January 1, 2018, as part of the FASB's simplification initiative. The adoption of the new guidance did not have a material impact to the Company.
In March 2017, the FASB issued ASU 2017-07, Improving the Presentation of Net Periodic Pension Cost and Net Periodic Postretirement Benefit Cost.	The new guidance clarifies the presentation and classification of the components of net periodic benefit costs in the consolidated statement of operations.	January 1, 2018.	The Company adopted the new guidance effective January 1, 2018, using the retrospective transition method, as part of the FASB's simplification initiative. See Adoption of ASU 2017-07 section below for additional information.
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	January 1, 2018.	The Company adopted the new guidance effective January 1, 2018, as part of the FASB's simplification initiative. The adoption of the new guidance did not have a material

	sale has occurred.		impact to the Company.
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.	The Company adopted the new guidance effective January 1, 2018, as part of the FASB's simplification initiative. The adoption of the new guidance did not have a material impact to the Company.
In February 2016, the FASB issued ASU 2016-02, Leases. Since that date, the FASB has issued additional ASUs clarifying certain aspects of ASU 2016-02.	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. Subsequent guidance issued after February 2016 did not change the core principle of ASU 2016-02.	January 1, 2019. Early adoption is permitted.	The Company has substantially completed evaluating its population of leases, and the most significant impact relates to its accounting for manufacturing and logistics equipment, and real estate operating leases. The Company currently anticipates recognition of additional assets and corresponding liabilities related to leases of approximately $225 million upon adoption. The Company plans to adopt the standard effective January 1, 2019, utilizing the modified retrospective transition method.

Table of Contents

Standard	Description	Effective Date	Effect on the Financial Statements or Other Significant Matters
In January 2016, the FASB issued ASU 2016-01, Recognition and Measurement of Financial Assets and Financial Liabilities.	The new guidance updates certain aspects of recognition, measurement, presentation and disclosure of financial instruments.	January 1, 2018.	The Company adopted the new guidance effective January 1, 2018, using the modified retrospective approach, as part of the FASB's simplification initiative. The new guidance resulted in a cumulative-effect adjustment of less than $1 million to January 1, 2018 Retained earnings.
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.	The Company adopted the new guidance effective January 1, 2018, using the modified retrospective approach, as part of the FASB's simplification initiative. The adoption of the new guidance resulted in less than $1 million impact to the consolidated financial statements and related disclosures (See Note 27).

Adoption of ASU 2017-07

ASU 2017-07 requires an entity to report the service cost component of net benefit cost in the same line item or items as other compensation costs arising from services rendered by the pertinent employees during the period. The other components of net benefit cost are required to be presented in the statement of operations separately from the service cost component and outside a subtotal of Operating profit (loss). The new guidance represents a change in accounting principle. The Company adopted ASU 2017-07 on January 1, 2018 using the retrospective transition method. The adoption of this accounting standard resulted in a change in certain previously reported amounts, as follows:

	Year Ended December 31, 2017		
	As previously reported	Adoption of ASU 2017-07	As Adjusted
	(In $ millions)		
Cost of sales	(4,625)	(4)	(4,629)
Selling, general and administrative expenses	(456)	(40)	(496)
Research and development expenses	(72)	(1)	(73)
Other (charges) gains, net	(60)	1	(59)
Operating profit (loss)	901	(44)	857
Non-operating pension and other postretirement employee benefit (expense) income	—	44	44

	Year Ended December 31, 2016		
	As previously reported	Adoption of ASU 2017-07	As Adjusted

	(In $ millions)		
Selling, general and administrative expenses	(416)	38	(378)
Other (charges) gains, net	(11)	3	(8)
Operating profit (loss)	893	41	934
Non-operating pension and other postretirement employee benefit (expense) income	—	(41)	(41)

81

Table of Contents

4. Acquisitions, Dispositions and Plant Closures

Acquisitions

•Omni Plastics

On February 1, 2018, using cash on hand and borrowings under the Company's senior unsecured revolving credit facility, the Company acquired 100% of the ownership interests of Omni Plastics, L.L.C. and its subsidiaries ("Omni Plastics"). Omni Plastics specializes in custom compounding of various engineered thermoplastic materials. The acquisition further strengthens the Company's global asset base by adding compounding capacity in the Americas. The acquisition was accounted for as a business combination and the acquired operations are included in the 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. The Company calculated the fair value of the assets acquired using the income, market or cost approach (or a combination thereof). Fair values of certain assets were determined based on Level 3 inputs 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 was 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 Omni Plastics acquisition is as follows:

	As of February 1, 2018 (In $ millions)
Cash and cash equivalents	2
Trade receivables - third party and affiliates	12
Inventories	13
Property, plant and equipment, net	19
Intangible assets (Note 11)	35
Goodwill (Note 11)[1]	84
Other assets	1
Total fair value of assets acquired	166
Trade payables - third party and affiliates	(8)
Total debt (Note 14)	(12)
Total fair value of liabilities assumed	(20)
Net assets acquired	146

(1) Goodwill consists of expected revenue and operating synergies resulting from the acquisition, all of which is deductible for income tax purposes.

The amount of pro forma Net earnings (loss) of Omni Plastics included in the Company's consolidated statement of operations was less than 1% (unaudited) of its consolidated Net earnings (loss) had the acquisition occurred as of the beginning of 2018. The amount of Omni Plastics' Net earnings (loss) consolidated by the Company since the acquisition date was not material.

Table of Contents

• Acetate Tow Joint Venture

In June 2017, Celanese, through various subsidiaries, entered into an agreement with affiliates of The Blackstone Group L.P. (the "Blackstone Entities") to form a joint venture which would combine substantially all of the operations of the Company's Acetate Tow business and the operations of the Rhodia Acetow cellulose acetate business formerly operated by Solvay S.A. and acquired by the Blackstone Entities in June 2017. The parties were subsequently unable to reach an agreement with the European Commission on acceptable conditions to allow the proposed joint venture to proceed. The demands by the European Commission eliminated the primary advantages of the transaction. As a result, on March 19, 2018, the Company and the Blackstone Entities abandoned their agreement to form the proposed joint venture.

• Nilit Plastics

In May 2017, using cash on hand and borrowings under the Company's senior unsecured revolving credit facility, the Company acquired the nylon compounding division of Nilit Group ("Nilit"), an independent producer of high performance nylon resins, fibers and compounds. Celanese acquired the nylon compounding product portfolio, customer agreements and manufacturing, technology and commercial facilities. The acquisition of Nilit 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 Engineered Materials segment. 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 purchase price allocation was based on preliminary information. During the measurement period, the Company made certain adjustments to its purchase price allocation to adjust taxes and working capital, which resulted in a $2 million reduction to goodwill initially recorded.

Plant Closures

• Ocotlán, Mexico

On June 6, 2018, the Company announced the consolidation of its global acetate manufacturing operations by initiating the closure of its acetate tow manufacturing unit in Ocotlán, Mexico. The acetate flake unit will remain operational and is unaffected by these actions. The Ocotlán, Mexico operations are included in the Company's Acetate Tow segment.

The exit and shutdown costs related to this closure are as follows:

	Year Ended December 31, 2018
	(In $ millions)
Restructuring[(1)]	2
Accelerated depreciation expense	15
Loss on disposition of assets, net	1
Other	1
Total	19

____

[(1)] Included in Other (charges) gains, net in the consolidated statement of operations (Note 18).

The Company does not expect to incur significant exit and shutdown costs in 2019.

5. Ventures and Variable Interest Entities

Consolidated Variable Interest Entities

The Company has 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

Table of Contents

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 Chain segment.

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

	As of December 31,	
	2018	2017
	(In $ millions)	
Cash and cash equivalents	24	19
Trade receivables, net - third party & affiliates	11	9
Property, plant and equipment (net of accumulated depreciation - 2018: $130; 2017: $90)	659	697
Intangible assets (net of accumulated amortization - 2018: $3; 2017: $2)	23	25
Other assets	5	6
Total assets(1)	722	756
Trade payables	16	16
Other liabilities(2)	4	4
Total debt	5	5
Deferred income taxes	3	3
Total liabilities	28	28

____

(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, 2018 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,	
	2018	2017
	(In $ millions)	
Property, plant and equipment, net	42	53
Trade payables	27	25
Current installments of long-term debt	14	18
Long-term debt	57	76

Total liabilities	98	119
Maximum exposure to loss	133	164

Table of Contents

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).

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, 2018	2017
	(In $ millions)	
Amortized cost	31	32
Gross unrealized gain	—	—
Gross unrealized loss	—	—
Fair value	31	32

7. Receivables, Net

	As of December 31, 2018	2017
	(In $ millions)	
Trade receivables - third party and affiliates	1,027	995
Allowance for doubtful accounts - third party and affiliates	(10)	(9)
Trade receivables - third party and affiliates, net	1,017	986

	As of December 31, 2018	2017
	(In $ millions)	
Non-income taxes receivable	176	81
Reinsurance receivables	14	16
Income taxes receivable	26	64
Other	85	83
Non-trade receivables, net	301	244

8. Inventories

	As of December 31, 2018	2017
	(In $ millions)	
Finished goods	697	591
Work-in-process	70	57
Raw materials and supplies	279	252
Total	1,046	900

9. Investments in Affiliates

Entities in which the Company has an investment accounted for under the equity method of accounting or equity investments without readily determinable fair values are considered affiliates; any transactions or balances with such companies are considered affiliate transactions.

Table of Contents

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,		
	2018	2017	2018	2017	2018	2017	2016	2018	2017	2016
	(In percentages)		(In $ millions)							
Engineered Materials										
Ibn Sina	25	25	164	178	96	58	38	(112)	(1)	(18)
InfraServ GmbH & Co. Hoechst KG[1]	32	32	129	139	20	19	—	(25)	(26)	—
Fortron Industries LLC	50	50	122	111	14	17	9	(3)	(6)	(9)
Korea Engineering Plastics Co., Ltd.	50	50	150	155	29	25	25	(27)	(25)	(11)
Polyplastics Co., Ltd.	45	45	196	170	64	57	50	(45)	(64)	(54)
Sherbrooke Capital Health and Wellness, L.P.[2]	10	10	2	3	—	1	—	—	—	—
Other Activities[3]										
InfraServ GmbH & Co. Gendorf KG[4]	30	39	36	41	7	4	7	(5)	(5)	(5)
InfraServ GmbH & Co. Hoechst KG[1]	—	—	—	—	—	—	22	—	—	(30)
InfraServ GmbH & Co. Knapsack KG[4]	22	27	16	20	3	2	4	(4)	(4)	(4)
Total			815	817	233	183	155	(221)	(131)	(131)

____

(1) InfraServ GmbH & Co. Hoechst KG is owned primarily by an entity included in the Company's Engineered Materials segment. Prior to 2017, InfraServ GmbH & Co. Hoechst KG was owned primarily by an entity included in the Company's Other Activities segment. The Company's Acetyl Chain segment also holds an ownership percentage.

(2) 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.

(3) 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.

(4) See Note 18 for further information.

Financial information for Ibn Sina is not provided to the Company on a timely basis and as a result, the Company's proportional share is reported on a one quarter lag. Accordingly, summarized financial information for Ibn Sina is as follows:

	As of September 30,	
	2018	2017
	(In $ millions)	
Current assets	448	410
Noncurrent assets	825	833
Current liabilities	200	194
Noncurrent liabilities	450	499

Twelve Months Ended

	September 30,		
	2018	2017	2016
	(In $ millions)		
Revenues	913	759	563
Gross profit	396	306	208
Net income	322	256	171

86

Table of Contents

Equity Investments Without Readily Determinable Fair Values

Equity investments without readily determinable fair values 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,		
	2018	2017	2018	2017	2018	2017	2016
	(In percentages)		(In $ millions)				
Acetate Tow							
Kunming Cellulose Fibers Co. Ltd.	30	30	14	14	12	12	14
Nantong Cellulose Fibers Co. Ltd.	31	31	115	109	87	81	80
Zhuhai Cellulose Fibers Co. Ltd.	30	30	30	30	13	14	13
Other Activities							
InfraServ GmbH & Co. Wiesbaden KG	8	8	5	5	1	1	1
Other			—	1	4	—	—
Total			164	159	117	108	108

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 at cost less impairment, adjusted for observable price changes for an identical or similar investment of the same issuer. 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,		
	2018	2017	2016
	(In $ millions)		
Purchases	305	250	203
Sales and other credits	117	77	43
Interest expense	1	—	—

	As of December 31,	
	2018	2017
	(In $ millions)	
Non-trade receivables	29	21
Total due from affiliates	29	21
Short-term borrowings[1]	50	32
Trade payables	46	36
Current Other liabilities	11	8
Total due to affiliates	107	76

(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.

87

Table of Contents

10. Property, Plant and Equipment, Net

	As of December 31, 2018	2017
	(In $ millions)	
Land	46	47
Land improvements	77	72
Buildings and building improvements	760	758
Machinery and equipment	5,223	5,101
Construction in progress	416	368
Gross asset value	6,522	6,346
Accumulated depreciation	(2,803)	(2,584)
Net book value	3,719	3,762

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

	As of December 31, 2018	2017
	(In $ millions)	
Buildings	14	14
Machinery and equipment	279	296
Accumulated depreciation	(188)	(179)
Net book value	105	131

Capitalized interest costs and depreciation expense are as follows:

	Year Ended December 31, 2018	2017	2016
	(In $ millions)		
Capitalized interest	10	6	5
Depreciation expense	319	285	281

No long-lived assets were impaired during 2018. During 2017 and 2016, certain long-lived assets were impaired (Note 18).

11. Goodwill and Intangible Assets, Net

Goodwill

	Engineered Materials	Acetate Tow	Acetyl Chain	Total
	(In $ millions)			
As of December 31, 2016	462	148	186	796
Acquisitions (Note 4)	128	—	—	128
Exchange rate changes	53	1	25	79
As of December 31, 2017	643	149	211	1,003
Acquisitions (Note 4)	84	—	—	84
Exchange rate changes	(20)	(1)	(9)	(30)
As of December 31, 2018[1]	707	148	202	1,057

---

[1] There were $0 million of accumulated impairment losses as of December 31, 2018.

Table of Contents

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, 2018 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, 2018 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.

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, 2016	36	509	35	53	633
Acquisitions (Note 4)	—	73	9	—	82 [1]
Exchange rate changes	2	58	1	1	62
As of December 31, 2017	38	640	45	54	777
Acquisitions (Note 4)	—	32	—	3	35 [2]
Renewals	6 [3]	—	—	—	6
Exchange rate changes	(2)	(21)	(1)	(1)	(25)
As of December 31, 2018	42	651	44	56	793
Accumulated Amortization					
As of December 31, 2016	(27)	(440)	(26)	(31)	(524)
Amortization	(4)	(11)	(3)	(2)	(20)
Exchange rate changes	(2)	(45)	(1)	1	(47)
As of December 31, 2017	(33)	(496)	(30)	(32)	(591)
Amortization	(2)	(16)	(3)	(3)	(24)
Exchange rate changes	2	17	1	—	20
As of December 31, 2018	(33)	(495)	(32)	(35)	(595)
Net book value	9	156	12	21	198

____

(1) Primarily related to intangible assets acquired from Nilit (Note 4) during the year ended December 31, 2017, with a weighted average amortization period of 14 years.

(2) Primarily related to intangible assets acquired from Omni Plastics (Note 4) during the year ended December 31, 2018, with a weighted average amortization period of 11 years.

(3) During the year ended December 31, 2018, the Company extended a research and development technology agreement license, which will be amortized over a period of 5 years.

Table of Contents

Indefinite-lived intangible assets are as follows:

	Trademarks and Trade Names
	(In $ millions)
As of December 31, 2016	85
Acquisitions (Note 4)	22
Exchange rate changes	8
As of December 31, 2017	115
Acquisitions (Note 4)	—
Exchange rate changes	(3)
As of December 31, 2018	112

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, 2018 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, 2018 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.

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

	(In $ millions)
2019	22
2020	20
2021	19
2022	17
2023	15

12. Current Other Liabilities

	As of December 31,	
	2018	2017
	(In $ millions)	
Asset retirement obligations	3	19
Benefit obligations (Note 15)	30	30
Customer rebates	76	65
Derivatives (Note 22)	7	3
Environmental (Note 16)	20	14
Insurance	4	5
Interest	21	17
Restructuring (Note 18)	4	5
Salaries and benefits	119	113
Sales and use tax/foreign withholding tax payable	22	16
Other	37	67
Total	343	354

Table of Contents

13. Noncurrent Other Liabilities

	As of December 31,	
	2018	2017
	(In $ millions)	
Asset retirement obligations	13	7
Deferred proceeds	44	47
Deferred revenue	7	6
Derivatives (Note 22)	11	—
Environmental (Note 16)	49	59
Income taxes payable (Note 19)	—	197
Insurance	37	43
Other	47	54
Total	208	413

Changes in asset retirement obligations are as follows:

	Year Ended December 31,		
	2018	2017	2016
	(In $ millions)		
Balance at beginning of year	26	29	36
Additions[1]	2	—	2
Accretion	—	1	1
Payments	(4)	(5)	(10)
Revisions to cash flow estimates[2]	(8)	1	—
Balance at end of year	16	26	29

____

(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 year ended 2017 was $10 million related to indemnifications received for a business acquired in 2005. The corresponding indemnification receivable is included in Non-trade receivables, net in the consolidated balance sheet as of December 31, 2017. The asset retirement obligation related to the indemnification receivable was completed during 2018.

14. Debt

	As of December 31,	
	2018	2017
	(In $ millions)	
Short-Term Borrowings and Current Installments of Long-Term Debt - Third Party and Affiliates		
Current installments of long-term debt	367	63
Short-term borrowings, including amounts due to affiliates[1]	77	86
Revolving credit facility[2]	40	97
Accounts receivable securitization facility[3]	77	80
Total	561	326

____

(1) The weighted average interest rate was 3.2% and 3.4% as of December 31, 2018 and 2017, respectively.
(2) The weighted average interest rate was 6.0% and 4.1% as of December 31, 2018 and 2017, respectively.
(3) The weighted average interest rate was 3.1% and 2.1% as of December 31, 2018 and 2017, respectively.

Table of Contents

	As of December 31, 2018	2017
	(In $ millions)	
Long-Term Debt		
Senior unsecured term loan due 2021[(1)]	—	494
Senior unsecured notes due 2019, interest rate of 3.250%	343	360
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%	857	897
Senior unsecured notes due 2025, interest rate of 1.250%	343	359
Senior unsecured notes due 2027, interest rate of 2.125%	568	—
Pollution control and industrial revenue bonds due at various dates through 2030, interest rates ranging from 4.05% to 5.00%	167	169
Nilit bank loans due at various dates through 2026 (Note 4)[(2)]	10	11
Obligations under capital leases due at various dates through 2054	167	208
Subtotal	3,355	3,398
Unamortized debt issuance costs[(3)]	(18)	(20)
Current installments of long-term debt	(367)	(63)
Total	2,970	3,315

(1) The margin for borrowings under the senior unsecured term loan due 2021 was 1.5% above LIBOR at Celanese credit ratings as of December 31, 2017.

(2) The weighted average interest rate was 1.3% and 1.3% as of December 31, 2018 and 2017, respectively.

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

Senior Credit Facilities

In July 2016, Celanese, Celanese US and certain subsidiaries entered into a new senior credit agreement (the "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 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, 2018
	(In $ millions)
Revolving Credit Facility	
Borrowings outstanding[(1)]	40
Letters of credit issued	—
Available for borrowing	960

(1) The Company borrowed $940 million and repaid $997 million under its senior unsecured revolving credit facility during the year ended December 31, 2018.

See Note 30 for further information.

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

92

Table of Contents

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 November 5, 2018, Celanese US completed an offering of €500 million in principal amount of 2.125% senior unsecured notes due March 1, 2027 (the "2.125% Notes") in a public offering registered under the Securities Act. The 2.125% Notes were issued under a base indenture dated May 6, 2011. The 2.125% Notes were issued at a discount to par at a price of 99.231%, which is being amortized to Interest expense in the consolidated statements of operations over the term of the 2.125% Notes. Net proceeds from the sale of the 2.125% Notes were used to repay $463 million of the senior unsecured term loan and for general corporate purposes.

In December 2017, Celanese US completed an offering of €300 million in principal amount of 1.250% senior unsecured notes due February 11, 2025 (the "1.250% Notes") in a public offering registered under the Securities Act. The 1.250% Notes were issued under a base indenture dated May 6, 2011. The 1.250% Notes were issued at a discount to par at a price of 99.810%, which is being amortized to Interest expense in the consolidated statements of operations over the term of the 1.250% Notes.

In September 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.

Accounts Receivable 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, expires in July 2019. 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, 2018
	(In $ millions)
Accounts Receivable Securitization Facility	
Borrowings outstanding[(1)]	77
Letters of credit issued	29
Available for borrowing	14
Total borrowing base	120
Maximum borrowing base[(2)]	120

(1) The Company borrowed $25 million and repaid $28 million during the year ended December 31, 2018.

(2) Outstanding accounts receivable transferred to the SPE was $185 million.

Other Financing Arrangements

On June 25, 2018, the Company entered into a factoring agreement with a global financial institution to sell certain accounts receivable on a non-recourse basis. These transactions are treated as a sale and are accounted for as a reduction in accounts receivable because the agreement transfers effective control over and risk related to the receivables to the buyer. The Company has no continuing involvement in the transferred receivables, other than collection and administrative responsibilities and, once sold, the accounts receivable are no longer available to satisfy creditors in the event of bankruptcy. The Company de-recognized $117 million of accounts receivable during the year ended December 31, 2018.

Table of Contents

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

	(In $ millions)
2019	561
2020	27
2021	430
2022	524
2023	875
Thereafter	1,132
Total	3,549

Net deferred financing costs are as follows:

	(In $ millions)
As of December 31, 2015	22
Financing costs deferred[2]	13
Accelerated amortization due to refinancing activity[3]	(3)
Amortization	(5)
As of December 31, 2016[1]	27
Financing costs deferred[4]	1
Accelerated amortization due to refinancing activity	—
Amortization	(4)
As of December 31, 2017[1]	24
Financing costs deferred[5]	4
Accelerated amortization due to refinancing activity	(1)
Amortization	(6)
As of December 31, 2018[1]	21

---

(1) Includes $3 million, $4 million and $6 million as of December 31, 2018, 2017 and 2016, 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.

(2) Includes $5 million, $6 million and $2 million related to the 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.

(3) 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.

(4) Related to the 1.250% Notes, which are being amortized through the term of the 1.250% Notes.

(5) Related to the 2.125% Notes, which are being amortized through the term of the 2.125% Notes.

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, 2018.

Table of Contents

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 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.

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.

95

Table of Contents

Based on the 2018 unaudited and 2017 audited multiemployer defined benefit plan's financial statements, the plan is 100% funded in 2018, 2017 and 2016. The number of employees covered by the Company's multiemployer defined benefit plan remained relatively stable year over year from 2016 to 2018, 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,		
	2018	2017	2016
	(In $ millions)		
Multiemployer defined benefit plan	8	7	7

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.

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,	
	2018	2017
	(In $ millions)	
Postemployment benefits	8	8

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,		
	2018	2017	2016
	(In $ millions)		
Defined contribution plans	40	40	43

96

Table of Contents

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,	
	2018	2017	2018	2017
	(In $ millions)			
Change in Projected Benefit Obligation				
Projected benefit obligation as of beginning of period	3,728	3,610	66	67
Service cost	9	9	1	1
Interest cost	104	107	2	1
Net actuarial (gain) loss[1]	(163)	151	(4)	(2)
Settlements	—	(1)	—	—
Benefits paid	(235)	(233)	(4)	(4)
Curtailments	(1)	—	—	—
Special termination benefits	2	1	—	—
Exchange rate changes	(32)	69	(2)	3
Other[2]	—	15	—	—
Projected benefit obligation as of end of period	3,412	3,728	59	66
Change in Plan Assets				
Fair value of plan assets as of beginning of period	3,251	2,784	—	—
Actual return on plan assets	(124)	302	—	—
Employer contributions	43	359	4	4
Settlements	—	(1)	—	—
Benefits paid[3]	(235)	(233)	(4)	(4)
Exchange rate changes	(20)	40	—	—
Fair value of plan assets as of end of period	2,915	3,251	—	—
Funded status as of end of period	(497)	(477)	(59)	(66)
Amounts Recognized in the Consolidated Balance Sheets Consist of:				
Noncurrent Other assets	30	64	—	—
Current Other liabilities	(24)	(24)	(5)	(5)
Benefit obligations	(503)	(517)	(54)	(61)
Net amount recognized	(497)	(477)	(59)	(66)
Amounts Recognized in Accumulated Other Comprehensive Income Consist of:				
Net actuarial (gain) loss[4]	8	9	—	—
Prior service (benefit) cost	—	(1)	—	1
Net amount recognized[5]	8	8	—	1

(1) Primarily relates to change in discount rates.

(2) Primarily relates to the acquisition of Nilit (Note 4).

(3) Includes benefit payments to nonqualified pension plans of $22 million and $22 million as of December 31, 2018 and 2017, respectively.

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

(5) Amount shown net of an income tax benefit of $5 million and $6 million as of December 31, 2018 and 2017, respectively, in the consolidated statements of equity (Note 17).

Table of Contents

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,	
	2018	2017	2018	2017
	(In percentages)			
US plans	82	83	57	54
International plans	18	17	43	46
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,	
	2018	2017
	(In percentages)	
US plans	88	88
International plans	12	12
Total	100	100

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

	As of December 31,	
	2018	2017
	(In $ millions)	
Projected benefit obligation	840	882
Fair value of plan assets	314	341

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

	As of December 31,	
	2018	2017
	(In $ millions)	
Accumulated benefit obligation	749	861
Fair value of plan assets	243	338

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

	As of December 31,	
	2018	2017
	(In $ millions)	
Accumulated benefit obligation	3,390	3,710

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.

Table of Contents

The components of net periodic benefit cost are as follows:

	Pension Benefits Year Ended December 31,			Postretirement Benefits Year Ended December 31,		
	2018	2017	2016	2018	2017	2016
	(In $ millions)					
Service cost	9	9	8	1	1	—
Interest cost	104	107	113	2	1	2
Expected return on plan assets	(210)	(198)	(177)	—	—	—
Amortization of prior service cost / (credit)	—	—	—	—	(1)	(3)
Recognized actuarial (gain) loss	169	48	101	(4)	(2)	2
Curtailment (gain) loss	(1)	—	—	—	—	—
Special termination benefit	2	1	3	—	—	—
Total	73	(33)	48	(1)	(1)	1

Amortization of Accumulated other comprehensive income (loss), net into net periodic benefit cost in 2019 is expected to be as follows:

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

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

	As of December 31,	
	2018	2017
	(In $ millions)	
Nonqualified Trust Assets		
Marketable securities, at fair value	31	32
Noncurrent Other assets, consisting of insurance contracts	37	42
Nonqualified Pension Obligations		
Current Other liabilities	21	22
Benefit obligations	213	237

(Income) 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,		
2018	2017	2016