

OWENS ILLINOIS INC /DE/
Form 10-K
February 14, 2019
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UNITED STATES

SECURITIES AND EXCHANGE COMMISSION

Washington, D. C. 20549

FORM 10 K

(Mark One)

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

TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE
ACT OF 1934

Commission file number 1-9576

OWENS-ILLINOIS, INC.

(Exact name of registrant as specified in its charter)

Delaware	22 2781933
(State or other jurisdiction of incorporation or organization)	(IRS Employer Identification No.)
One Michael Owens Way, Perrysburg, Ohio	43551
(Address of principal executive offices)	(Zip Code)

Registrant's telephone number, including area code: (567) 336-5000

Securities registered pursuant to Section 12(b) of the Act:

Title of each class	Name of each exchange on which registered
Common Stock, \$.01 par value	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 No

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

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the

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Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports) and (2) has been subject to such filing requirements for the past 90 days. Yes No

Indicate by check mark whether the registrant has submitted electronically 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 No

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

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 Accelerated filer Non accelerated filer
Smaller reporting company Emerging growth company

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

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

The aggregate market value (based on the consolidated tape closing price on June 30, 2018) of the voting and non-voting common equity held by non-affiliates of Owens-Illinois, Inc. was approximately \$1,852,928,000. For the sole purpose of making this calculation, the term "non-affiliate" has been interpreted to exclude directors and executive officers of the Company. Such interpretation is not intended to be, and should not be construed to be, an admission by Owens-Illinois, Inc. or such directors or executive officers of the Company that such directors and executive officers of the Company are "affiliates" of Owens-Illinois, Inc., as that term is defined under the Securities Act of 1934.

The number of shares of common stock, \$.01 par value of Owens-Illinois, Inc. outstanding as of January 31, 2019 was 153,622,239.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the Owens-Illinois, Inc. Proxy Statement for The Annual Meeting of Share Owners To Be Held Thursday, May 16, 2019 ("Proxy Statement") are incorporated by reference into Part III hereof.

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PART I

ITEM 1. BUSINESS

General Development of Business

Owens Illinois, Inc., a Delaware corporation (the “Company”), through its subsidiaries, is the successor to a business established in 1903. The Company is the largest manufacturer of glass containers in the world with 77 glass manufacturing plants in 23 countries. It competes in the glass container segment of the rigid packaging market and is the leading glass container manufacturer in most of the countries where it has manufacturing facilities.

Company Strategy

The Company’s vision is to responsibly provide innovative and competitive packaging solutions for the world’s leading food and beverage companies. Its goal is to enable future success for its customers, employees and share owners. The Company will realize its vision and goal by achieving its strategic ambitions including:

- To be the preferred supplier for glass packaging in the global food and beverage industry by significantly improving the customer experience; aligning its activity with customers’ value; improving quality and flexibility; and improving innovation and speed of commercialization; as well as increasing sales, marketing, end-to-end supply chain capabilities and talent;
- To be the most cost effective producer in the global glass packaging segment by ensuring asset stability and total systems cost management; increasing efficiency, leveraging automation, and improving quality; cultivating game changing concepts that create new competitive advantages; and focusing on continuous improvement; and
- To expand its business in attractive, growing markets and segments by leveraging innovation, growing with strategic customers; expanding into attractive new markets; and evaluating expansion into the value chain.

Reportable Segments

The Company has three reportable segments based on its geographic locations: Americas, Europe, and Asia Pacific. These three segments are aligned with the Company’s internal approach to managing, reporting, and evaluating performance of its global glass operations. To better leverage its scale and presence across a larger geography and market, the Company completed the consolidation of the former North America and Latin America segments into one segment, named the Americas, effective January 1, 2018.

Products and Services

The Company produces glass containers for alcoholic beverages, including beer, flavored malt beverages, spirits and wine. The Company also produces glass packaging for a variety of food items, soft drinks, teas, juices and pharmaceuticals. The Company manufactures glass containers in a wide range of sizes, shapes and colors and is active in new product development and glass container innovation.

Customers

In most of the countries where the Company competes, it has the leading position in the glass container segment of the rigid packaging market based on sales revenue. The Company’s largest customers consist mainly of the leading global food and beverage manufacturers, including (in alphabetical order) Anheuser Busch InBev, Brown-Forman, Carlsberg, Coca-Cola, Constellation, Diageo, Heineken, MillerCoors, Nestle and Pernod Ricard. No customer represents more than 10% of the Company’s consolidated net sales.

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The Company sells most of its glass container products directly to customers under annual or multi year supply agreements. Multi year contracts typically provide for price adjustments based on cost changes. The Company also sells some of its products through distributors. Many customers provide the Company with regular estimates of their product needs, which enables the Company to schedule glass container production to maintain reasonable levels of inventory. Glass container manufacturing facilities are generally located in close proximity to customers.

Markets and Competitive Conditions

The Company's principal markets for glass container products are in the Americas, Europe and Asia Pacific.

Americas. The Company has 35 glass container manufacturing plants in the Americas region located in Argentina, Bolivia, Brazil, Canada, Colombia, Ecuador, Mexico, Peru, the U.S. and interests in three joint ventures that manufacture glass containers. Also, the Company has a distribution facility in the U.S. used to import glass containers from its business in Mexico. The Company has the leading share of the glass container segment of the U.S. rigid packaging market, based on sales revenue by domestic producers. In South America and Mexico, the Company maintains a diversified portfolio serving several markets, including alcoholic beverages (beer, wine and spirits), non-alcoholic beverages and food, as well as a large infrastructure for returnable/refillable glass containers.

The principal glass container competitors in the U.S. are the Ardagh Group and Anchor Glass Container. Imports from China, Mexico, Taiwan and other countries also compete in U.S. glass container segments. Additionally, there are several major consumer packaged goods companies that self manufacture glass containers. The Company competes directly with Verallia in Brazil and Argentina, and does not believe that it competes with any other large, multinational glass container manufacturers in the rest of the region.

Europe. The Company has a leading share of the glass container segment of the rigid packaging market in the European countries in which it operates, with 34 glass container manufacturing plants located in the Czech Republic, Estonia, France, Germany, Hungary, Italy, the Netherlands, Poland, Spain and the United Kingdom. These plants primarily produce glass containers for the alcoholic beverages (beer, wine and spirits), non-alcoholic beverages and food markets in these countries. The Company also has interests in two joint ventures that manufacture glass containers in Italy. Throughout Europe, the Company competes directly with a variety of glass container manufacturers including Verallia, Ardagh Group, Vetropack, Vidrala and BA Vidro.

Asia Pacific. The Company has eight glass container manufacturing plants in the Asia Pacific region, located in Australia, China, Indonesia and New Zealand. It also has interests in joint venture operations in China, Malaysia and Vietnam. In Asia Pacific, the Company primarily produces glass containers for the alcoholic beverages (primarily beer and wine), non-alcoholic beverages and food markets. The Company competes directly with Orora Limited in Australia, and does not believe that it competes with any other large, multinational glass container manufacturers in the rest of the region. In China, the glass container segments of the packaging market are regional and highly fragmented with a large number of local competitors.

In addition to competing with other large and well established manufacturers in the glass container segment, the Company competes in all regions with manufacturers of other forms of rigid packaging, principally aluminum cans and plastic containers. Competition is based on quality, price, service, innovation and the marketing attributes of the container. The principal competitors producing metal containers include Ball Corporation, Crown Holdings, Inc., and Silgan Holdings Inc. The principal competitors producing plastic containers include Amcor, Consolidated Container Holdings, LLC, Reynolds Group Holdings Limited, Plastipak Packaging, Inc. and Silgan Holdings Inc. The Company also competes with manufacturers of non rigid packaging alternatives, including flexible pouches, aseptic cartons and bag in box containers.

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The Company seeks to provide products and services to customers ranging from large multinationals to small local breweries and wineries in a way that creates a competitive advantage for the Company. The Company believes that it is often the glass container partner of choice because of its innovation and branding capabilities, its global footprint and its expertise in manufacturing know how and process technology.

Manufacturing

The Company has 77 glass manufacturing plants. It constantly seeks to improve the productivity of these operations through the systematic upgrading of production capabilities, sharing of best practices among plants and effective training of employees.

The Company also provides engineering support for its glass manufacturing operations through facilities located in the U.S., Australia, France, Poland and Peru.

Suppliers and Raw Materials

The primary raw materials used in the Company's glass container operations are sand, soda ash, limestone and recycled glass. Each of these materials, as well as the other raw materials used to manufacture glass containers, has historically been available in adequate supply from multiple sources. One of the sources is a soda ash mining operation in Wyoming in which the Company has a 25% interest.

Energy

The Company's glass container operations require a continuous supply of significant amounts of energy, principally natural gas, fuel oil and electrical power. Adequate supplies of energy are generally available at all of the Company's manufacturing locations. Energy costs typically account for 10-20% of the Company's total manufacturing costs, depending on the cost of energy, the type of energy available, the factory location and the particular energy requirements. The percentage of total cost related to energy can vary significantly because of volatility in market prices, particularly for natural gas and fuel oil in volatile markets such as North America and Europe.

In the Americas' businesses in the U.S. and Canada, more than 90% of the sales volume is represented by customer contracts that contain provisions that pass the commodity price of natural gas to the customer, effectively reducing the region's exposure to changing natural gas market prices. In the Americas' business in South America and Mexico, the Company primarily enters into fixed price contracts for its energy requirements in most of the countries in which it operates and the remaining energy requirements are subject to changing natural gas market prices and economic impacts. These fixed price contracts typically have terms of one to ten years, and generally include annual price adjustments for inflation and for certain contracts price adjustments for foreign currency variation.

In Europe and Asia Pacific, the Company enters into long term contracts for a significant amount of its energy requirements. These contracts have terms that range from one to five years.

Also, in order to limit the effects of fluctuations in market prices for natural gas, the Company uses commodity forward contracts related to its forecasted requirements. The objective of these forward contracts is to reduce potential volatility in cash flows and expense due to changing market prices. The Company continually evaluates the energy markets with respect to its forecasted energy requirements to optimize its use of commodity forward contracts.

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Research, Development and Engineering

Research, development and engineering constitute important parts of the Company's technical activities. The Company primarily focuses on advancements in the areas of product innovation, manufacturing process control, melting technology, automatic inspection, light weighting and further automation of manufacturing activities. Recently, the Company has increased its focus on advancing melting technology with investments in modular glass melting furnaces. The Company's investments in this new technology seeks to reduce the amount of capital required to install, rebuild and operate its furnaces. This new melting technology is also focused on the ability of these assets to be more easily turned on and off or adjusted based on seasonality and customer demands. The Company's research and development activities are conducted principally at its corporate facilities in Perrysburg, Ohio.

The Company holds a large number of patents related to a wide variety of products and processes and has a substantial number of patent applications pending. While the aggregate of the Company's patents are of material importance to its businesses, the Company does not consider that any patent or group of patents relating to a particular product or process is of material importance when judged from the standpoint of any individual segment or its businesses as a whole.

The Company has agreements to license its proprietary glass container technology and to provide technical assistance to a limited number of companies around the world. These agreements cover areas related to manufacturing and engineering assistance. The worldwide licensee network provides a stream of revenue to help support the Company's development activities. In 2018, 2017, and 2016, the Company earned \$13 million, \$11 million and \$13 million, respectively, in royalties and net technical assistance revenue.

Sustainability and the Environment

The Company is committed to reducing the impact its products and operations have on the environment. As part of this commitment, the Company has set targets for increasing the use of recycled glass in its manufacturing process, while reducing energy consumption and carbon dioxide equivalent ("CO₂e") emissions. Specific actions taken by the Company include working with governments and other organizations to establish and financially support recycling initiatives, partnering with other entities throughout the supply chain to improve the effectiveness of recycling efforts, reducing the weight of glass packaging and investing in research and development to reduce energy consumption in its manufacturing process. The Company invests in technology and training to improve safety, reduce energy use, decrease emissions and increase the amount of cullet, or recycled glass, used in the production process.

The Company's worldwide operations, in addition to other companies within the industry, are subject to extensive laws, ordinances, regulations and other legal requirements relating to environmental protection, including legal requirements governing investigation and clean up of contaminated properties as well as water discharges, air emissions, waste management and workplace health and safety. The Company strives to abide by and uphold such laws and regulations.

Glass Recycling and Bottle Deposits

The Company is an important contributor to recycling efforts worldwide and is among the largest users of recycled glass containers. If sufficient high quality recycled glass were available on a consistent basis, the Company has the technology to make glass containers containing a high proportion of recycled glass. Using recycled glass in the manufacturing process reduces energy costs and impacts the operating life and efficiency of the glass melting furnaces.

In the U.S., Canada, Europe and elsewhere, government authorities have adopted or are considering legal requirements that would mandate certain recycling rates, the use of recycled materials, or limitations on or preferences for certain types of packaging. The Company believes that governments worldwide will continue to develop and enact legal requirements guiding customer and end consumer packaging choices.

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Sales of beverage containers are affected by governmental regulation of packaging, including deposit laws and extended producer responsibility regulations. As of December 31, 2018, there were a number of U.S. states, Canadian provinces and territories, European countries and Australian states with some form of incentive for consumer returns of glass bottles in their law. The structure and enforcement of such laws and regulations can impact the sales of beverage containers in a given jurisdiction. Such laws and regulations also impact the availability of post consumer recycled glass for the Company to use in container production.

A number of states and provinces have recently considered or are now considering laws and regulations to encourage curbside, deposit and on premise glass recycling. Although there is no clear trend in the direction of these state and provincial laws and proposals, the Company believes that states and provinces, as well as municipalities within those jurisdictions, will continue to adopt recycling laws, which will impact supplies of recycled glass. As a large user of recycled glass for making new glass containers, the Company has an interest in laws and regulations impacting supplies of such material in its markets.

Air Emissions

In Europe, the European Union Emissions Trading Scheme (“EUETS”) is in effect to facilitate emissions reduction. The Company’s manufacturing facilities which operate in EU countries must restrict the volume of their CO₂ emissions to the level of their individually allocated emissions allowances as set by country regulators. If the actual level of emissions for any facility exceeds its allocated allowance, additional allowances can be bought to cover deficits; conversely, if the actual level of emissions for any facility is less than its allocation, the excess allowances can be sold. Should the regulators significantly restrict the number of emissions allowances available, it could have a material effect on the Company’s results.

In the Americas, the U.S. and Canada have engaged in significant legislative and regulatory activities relating to greenhouse gas (“GHG”) emissions for years at the federal, state and provincial levels of government. In the U.S., the Environmental Protection Agency (the “EPA”) regulates emissions of GHG air pollutants under the Clean Air Act, which grants the EPA authority to establish limits for certain air pollutants and to require compliance, levy penalties and bring civil judicial action against violators. The EPA’s GHG regulations continue to evolve, as the structure and scope of the regulations are often the subject of litigation and federal legislative activity. New GHG regulations could have a significant long term impact on the Company’s operations that are affected by such regulations. The state of California in the U.S. the Canadian federal government and the province of Quebec have adopted cap and trade legislation aimed at reducing GHG emissions. In Brazil, the government passed a law in 2009 requiring companies to reduce the level of GHG emissions by the year 2020. In other South American countries, national and local governments are also considering potential regulations to reduce GHG emissions.

In Asia Pacific, the National Greenhouse and Energy Reporting Act 2007 commenced on July 1, 2008 in Australia and established a mandatory reporting system for corporate GHG emissions and energy production and consumption. In July 2014, the Australian government introduced the Emissions Reduction Fund (“ERF”) which comprises an element to credit emissions reductions, a fund to purchase emissions reductions and a safeguard mechanism. The ERF purchases the lowest cost abatement (in the form of Australian carbon credit units) from a wide range of sources, providing an incentive to businesses, households and landowners to proactively reduce their emissions, while the safeguard mechanism (effective from July 1, 2016) ensures that emissions reductions paid for through the crediting and purchasing elements of the ERF are not offset by significant increases in emissions above business-as-usual levels elsewhere in the economy. An emissions trading scheme has been in effect in New Zealand since 2008.

The Company is unable to predict what environmental legal requirements may be adopted in the future. However, the Company continually monitors its operations in relation to environmental impacts and invests in environmentally friendly and emissions reducing projects. As such, the Company has made significant expenditures for environmental

improvements at certain of its facilities over the last several years; however, these expenditures did not have a material adverse effect on the Company's results of operations or cash flows. The Company is unable to predict the impact of future environmental legal requirements on its results of operations or cash flows.

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Employees

The Company's worldwide operations employed approximately 26,500 persons as of December 31, 2018. Approximately 68% of employees in the U.S. and Canada are hourly workers covered by collective bargaining agreements. The principal collective bargaining agreement, which at December 31, 2018, covered approximately 77% of the Company's union affiliated employees in the U.S. and Canada, will expire on March 31, 2019. Approximately 71% of employees in South America and Mexico are covered by collective bargaining agreements. The majority of the hourly workers in Australia and New Zealand are also covered by collective bargaining agreements. The collective bargaining agreements in South America, Mexico, Australia and New Zealand have varying terms and expiration dates. In Europe, a large number of the Company's employees are employed in countries in which employment laws provide greater bargaining or other rights to employees than the laws of the U.S. Such employment rights require the Company to work collaboratively with the legal representatives of the employees to effect any changes to labor arrangements. The Company considers its employee relations to be good and does not anticipate any material work stoppages in the near term.

Available Information

The Company's website is www.owi.com. The Company's annual report 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 can be obtained from this site at no cost. The Securities and Exchange Commission ("SEC") maintains a website at www.sec.gov that contains reports, proxy and information statements, and other information regarding issuers that file electronically with the SEC.

The Company's Corporate Governance Guidelines, Global Code of Business Conduct and Ethics and the charters of the Audit, Compensation, Nominating/Corporate Governance and Risk Oversight Committees are also available on the "Investors" section of the Company's website. Copies of these documents are available in print to share owners upon request, addressed to the Corporate Secretary at the address above. The information on the Company's website is not part of this or any other report that the Company files with, or furnishes to, the SEC.

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Executive Officers of the Registrant

In the following table, the Company sets forth certain information regarding those persons currently serving as executive officers of Owens-Illinois, Inc. as of February 14, 2019.

Name and Age	Position
Andres A. Lopez (56)	Chief Executive Officer since January 2016; President, Glass Containers and Chief Operating Officer 2015; Vice President and President of O I Americas 2014 - 2015; Vice President and President of O I South America 2009 - 2014; Vice President of Global Manufacturing and Engineering 2006 - 2009.
Miguel I. Alvarez (54)	President, O-I Americas since November 2017; President, O-I Latin America 2014 - 2017; President, O-I Brazil 2010 - 2014. Previously held leadership positions in Chile, Argentina and Ecuador for Belcorp, a leading global beauty products company 2005 - 2010.
Arnaud Aujouannet (49)	Senior Vice President and Chief Sales and Marketing Officer since October 2017; Vice President of Sales and Marketing, Europe 2015 - 2017. Previously Commercial Associate Director, Oral Care Europe for Procter & Gamble, a multi-national consumer goods company 2012 - 2015; Global Sales & Marketing Chief Sales & Marketing Officer, Swiss Precision Diagnostic/Clearblue (a Procter & Gamble Joint Venture) 2009 - 2012.
Jan A. Bertsch (62)	Chief Financial Officer and Senior Vice President since November 2015. Previously Executive Vice President and Chief Financial Officer for Sigma-Aldrich, a life science and technology company, 2012 - 2015. Vice President, Controller and Principal Accounting Officer at BorgWarner 2011 - 2012; Vice President and Treasurer, 2009 - 2011.
Tim M. Connors (44)	President, O-I Asia Pacific since June 2015; General Manager of O-I Australia 2013 - 2015; Vice President of Finance, Asia Pacific 2011 - 2013; Vice President of Strategic Planning and Business Development, North America 2010 - 2011.
Giancarlo Currarino (42)	Senior Vice President and Chief Technology and Supply Chain Officer since December 2016; Vice President and Chief Technology Officer 2012 - 2016; Vice President of Global Engineering 2011 - 2012.
John A. Haudrich (51)	Senior Vice President and Chief Strategy and Integration Officer since November 2015; Vice President and Acting Chief Financial Officer 2015; Vice President Finance and Corporate Controller 2011 - 2015; Vice President of Investor Relations 2009 - 2011.
Vitaliano Torno (60)	President, O-I Europe since January 2016; Managing Director, O-I Europe 2015; Vice President, European countries 2013 - 2015; Vice President, Marketing and sales, Europe 2010 - 2013.
MaryBeth Wilkinson (46)	Senior Vice President and General Counsel since January 2017; Corporate Secretary since 2016; Associate General Counsel 2013 - 2016; Assistant General Counsel 2010 - 2012. Previously Partner with a global law firm 2007 - 2010.

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ITEM 1A. RISK FACTORS

Asbestos Related Liability—The Company has made, and will continue to make, substantial payments to resolve claims of persons alleging exposure to asbestos containing products and may need to record additional charges in the future for estimated asbestos related costs. These substantial payments have affected and may continue to affect the Company's cost of borrowing, its ability to pursue global or domestic acquisitions, its ability to reinvest in its operations, and its ability to pay dividends.

From 1948 to 1958, one of the Company's former business units commercially produced and sold approximately \$40 million of a high-temperature, calcium silicate based pipe and block insulation material containing asbestos. The Company exited the insulation business in April 1958. The Company receives claims from individuals alleging bodily injury and death as a result of exposure to asbestos from this product ("Asbestos Claims"). Some Asbestos Claims are brought as personal injury lawsuits that typically allege various theories of liability, including negligence, gross negligence and strict liability and seek compensatory and, in some cases, punitive damages. Predominantly, however, Asbestos Claims are presented to the Company under administrative claims-handling agreements, which the Company has in place with many plaintiffs' counsel throughout the country ("Administrative Claims").

Beginning with the initial liability of \$975 million established in 1993, the Company has accrued a total of approximately \$5.0 billion through 2018, before insurance recoveries, for its asbestos-related liability. The Company's ability to estimate its liability has been significantly affected by, among other factors, the volatility of asbestos related litigation in the United States, the significant number of co-defendants that have filed for bankruptcy, the inherent uncertainty of future disease incidence and claiming patterns against the Company, the significant expansion of the defendants that are now sued in the litigation, and the continuing changes in the extent to which these defendants participate in the resolution of cases in which the Company is also a defendant.

For many years, the Company has conducted an annual comprehensive legal review of its asbestos-related liabilities and costs in connection with finalizing its annual results of operations. In May 2016, the Company revised its method for estimating its asbestos-related liabilities in connection with finalizing and reporting its restated results of operations for the three years ended December 31, 2015. The revised method estimates the total future costs for the Company's asbestos-related liability. Under this method, the Company provides historical Asbestos Claims' data to a third party with expertise in determining the impact of disease incidence and mortality on future filing trends to develop information to assist the Company in estimating the total number of future Asbestos Claims likely to be asserted against the Company. The Company uses this estimate, along with an estimation of disposition costs and related legal costs, as inputs to develop its best estimate of its total probable liability. The revised methodology has led the Company to conclude that an asbestos-related liability of \$602 million was required as of December 31, 2018.

The Company continues to believe that its ultimate asbestos-related liability cannot be estimated with certainty. As part of its future annual comprehensive legal reviews, the Company will review its estimate of its total asbestos-related liability, unless significant changes in trends or new developments warrant an earlier review. Such reviews may result in significant adjustments to the liability accrued at the time of the review.

The significant assumptions underlying the material components of the Company's accrual are:

- a) settlements will continue to be limited almost exclusively to claimants who were exposed to the Company's asbestos containing insulation prior to its exit from that business in 1958;
- b) Asbestos Claims will continue to be resolved primarily under the Company's administrative claims agreements or on terms comparable to those set forth in those agreements;
- c) the incidence of serious asbestos related disease cases and claiming patterns against the Company for such cases do not change materially;

- d) the Company is substantially able to defend itself successfully at trial and on appeal;
- e) the number and timing of additional co-defendant bankruptcies do not change significantly the assets available to participate in the resolution of cases in which the Company is a defendant; and

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f) co-defendants with substantial resources and assets continue to participate significantly in the resolution of future Asbestos Claims.

The ultimate amount of distributions that may be required to fund the Company's total asbestos-related payments cannot be estimated with certainty. Asbestos related payments continue to be substantial and the continued use of significant amounts of cash for asbestos related costs has affected and may continue to affect the Company's cost of borrowing, its ability to pursue global or domestic acquisitions, its ability to reinvest in its operations, and its ability to pay dividends.

Substantial Leverage—The Company's indebtedness could adversely affect the Company's financial health.

The Company has a significant amount of debt. As of December 31, 2018 and December 31, 2017, the Company had approximately \$5.3 billion of total debt outstanding.

The Company's indebtedness could:

- Increase vulnerability to general adverse economic and industry conditions;
- Increase vulnerability to interest rate increases for the portion of the debt under the secured credit agreement;
- Require the Company to dedicate a substantial portion of cash flow from operations to payments on indebtedness, thereby reducing the availability of cash flow to fund working capital, capital expenditures, acquisitions, share repurchases, development efforts and other general corporate purposes;
- Limit flexibility in planning for, or reacting to, changes in the Company's business and the rigid packaging market;
- Place the Company at a competitive disadvantage relative to its competitors that have less debt; and
- Limit, along with the financial and other restrictive covenants in the documents governing indebtedness, among other things, the Company's ability to borrow additional funds.

Ability to Service Debt—To service its indebtedness, the Company will require a significant amount of cash. The Company's ability to generate cash and refinance certain indebtedness depends on many factors beyond its control.

The Company's ability to make payments on, to refinance its indebtedness and to fund working capital, capital expenditures, acquisitions, development efforts and other general corporate purposes depends on its ability to generate cash in the future. The Company has no assurance that it will generate sufficient cash flow from operations, or that future borrowings will be available under the secured credit agreement, in an amount sufficient to enable the Company to pay its indebtedness, or to fund other liquidity needs. If short-term interest rates increase, the Company's debt service cost will increase because some of its debt is subject to short-term variable interest rates. At December 31, 2018, the Company's debt, including interest rate swaps, that is subject to variable interest rates represented approximately 33% of total debt.

Further, in July 2017, the Financial Conduct Authority (the authority that regulates LIBOR) announced it intends to stop compelling banks to submit rates for the calculation of LIBOR after 2021. The Alternative Reference Rates Committee ("ARRC") has proposed that the Secured Overnight Financing Rate ("SOFR") is the rate that represents best practice as the alternative to USD-LIBOR for use in debt instruments, derivatives and other financial contracts that are currently indexed to USD-LIBOR. ARRC has proposed a paced market transition plan to SOFR from USD-LIBOR and organizations are currently working on industry wide and company specific transition plans as it relates to derivatives, debt and cash markets exposed to USD-LIBOR. Approximately 20% of the Company's long-term indebtedness are indexed to USD-LIBOR and it is monitoring this activity and evaluating the related risks. Although an alternative to LIBOR has been contemplated in the Company's bank credit agreement, it is unclear as to the new method of calculating LIBOR that may evolve and this new method could adversely affect the Company's interest rates on its indebtedness.

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The Company may need to refinance all or a portion of its indebtedness on or before maturity. If the Company is unable to generate sufficient cash flow and is unable to refinance or extend outstanding borrowings on commercially reasonable terms or at all, it may have to take one or more of the following actions:

- Reduce or delay capital expenditures planned for replacements, improvements and expansions;
- Sell assets;
- Restructure debt; and/or
- Obtain additional debt or equity financing.

The Company can provide no assurance that it could affect or implement any of these alternatives on satisfactory terms, if at all.

Debt Restrictions—The Company may not be able to finance future needs or adapt its business plans to changes because of restrictions placed on it by the secured credit agreement and the indentures and instruments governing other indebtedness.

The secured credit agreement, the indentures governing the senior debentures and notes, and certain of the agreements governing other indebtedness contain affirmative and negative covenants that limit the ability of the Company to take certain actions. For example, these indentures restrict, among other things, the ability of the Company and its restricted subsidiaries to borrow money, pay dividends on, or redeem or repurchase its stock, make certain investments, create liens, enter into certain transactions with affiliates and sell certain assets or merge with or into other companies. These restrictions could adversely affect the Company's ability to operate its businesses and may limit its ability to take advantage of potential business opportunities as they arise.

Failure to comply with these or other covenants and restrictions contained in the secured credit agreement, the indentures or agreements governing other indebtedness could result in a default under those agreements, and the debt under those agreements, together with accrued interest, could then be declared immediately due and payable. If a default occurs under the secured credit agreement, the Company could no longer request borrowings under the secured credit agreement, and the lenders could cause all of the outstanding debt obligations under such secured credit agreement to become due and payable, which would result in a default under a number of other outstanding debt securities and could lead to an acceleration of obligations related to these debt securities. A default under the secured credit agreement, indentures or agreements governing other indebtedness could also lead to an acceleration of debt under other debt instruments that contain cross-acceleration or cross default provisions.

Foreign Currency Exchange Rates—The Company is subject to the effects of fluctuations in foreign currency exchange rates, which could adversely impact the Company's financial results.

The Company's reporting currency is the U.S. dollar. A significant portion of the Company's net sales, costs, assets and liabilities are denominated in currencies other than the U.S. dollar, primarily the Euro, Brazilian real, Colombian peso, Mexican peso and Australian dollar. In its consolidated financial statements, the Company remeasures transactions denominated in a currency other than the functional currency of the reporting entity (e.g. soda ash purchases) and translates local currency financial results into U.S. dollars based on the exchange rates prevailing during the reporting period. During times of a strengthening U.S. dollar, the reported revenues and earnings of the Company's international operations will be reduced because the local currencies will translate into fewer U.S. dollars. This could have a material adverse effect on the Company's financial condition, results of operations and cash flows.

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International Operations—The Company is subject to risks associated with operating in foreign countries.

The Company operates manufacturing and other facilities throughout the world. Net sales from non U.S. operations totaled approximately \$4.9 billion, representing approximately 71% of the Company's net sales for the year ended December 31, 2018. As a result of its non U.S. operations, the Company is subject to risks associated with operating in foreign countries, including:

- Political, social and economic instability;
- War, civil disturbance or acts of terrorism;
- Taking of property by nationalization or expropriation without fair compensation;
- Changes in governmental policies and regulations;
- Devaluations and fluctuations in currency exchange rates;
- Fluctuations in currency exchange rates;
- Imposition of limitations on conversions of foreign currencies into dollars or remittance of dividends and other payments by foreign subsidiaries;
- Imposition or increase of withholding and other taxes on remittances and other payments by foreign subsidiaries;
- Hyperinflation in certain foreign countries;
- Impositions or increase of investment and other restrictions or requirements by foreign governments;
- Loss or non renewal of treaties or other agreements with foreign tax authorities;
- Changes in tax laws, or the interpretation thereof, including those affecting foreign tax credits or tax deductions relating to our non U.S. earnings or operations; and
- Complying with the U.S. Foreign Corrupt Practices Act, which prohibits companies and their intermediaries from engaging in bribery or other prohibited payments to foreign officials for the purposes of obtaining or retaining business or gaining an unfair business advantage and requires companies to maintain accurate books and records and effective internal controls.

The risks associated with operating in foreign countries may have a material adverse effect on operations.

Brexit—The Company's business may be impacted by the United Kingdom's proposed exit from the European Union.

In 2016, the United Kingdom held a referendum in which voters approved an exit from the European Union, commonly referred to as "Brexit." As a result of the referendum, the United Kingdom parliament voted in March 2017 to commence the United Kingdom's official withdrawal process from the European Union. Negotiations between the United Kingdom and the European Union remain ongoing and are complex, and there can be no assurance regarding the terms, timing or consummation of any resulting agreements. The United Kingdom is due to leave the European Union automatically on March 29, 2019, unless the negotiations are extended by unanimous consent of the European Council.

The initial Brexit vote in 2016 caused significant volatility in currency exchange rates and continued uncertainty regarding Brexit may result in future exchange rate volatility. Such volatility, and any adverse effect that Brexit has on the currency regimes to which the Company is subject, could adversely affect the Company's sales volumes and costs. The Company has two manufacturing facilities in the United Kingdom. Further, the uncertainty surrounding the Brexit negotiations continues to create economic uncertainty, which may cause the Company's customers to closely monitor their costs, terminate or reduce the scope of existing contracts, decrease or postpone currently planned contracts, or negotiate for more favorable deal terms, each of which may have a negative impact on the Company's financial condition, results of operations and cash flows.

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Competition—The Company faces intense competition from other glass container producers, as well as from makers of alternative forms of packaging. Competitive pressures could adversely affect the Company's financial health.

The Company is subject to significant competition from other glass container producers, as well as from makers of alternative forms of packaging, such as aluminum cans and plastic containers. The Company also competes with manufacturers of non-rigid packaging alternatives, including flexible pouches and aseptic cartons, in serving the packaging needs of certain end-use markets, including juice customers. The Company competes with each rigid packaging competitor on the basis of price, quality, service and the marketing and functional attributes of the container. Advantages or disadvantages in any of these competitive factors may be sufficient to cause the customer to consider changing suppliers and/or using an alternative form of packaging. The adverse effects of consumer purchasing decisions may be more significant in periods of economic downturn and may lead to longer-term reductions in consumer spending on glass-jar packaged products.

Pressures from competitors and producers of alternative forms of packaging have resulted in excess capacity in certain countries in the past and have led to capacity adjustments and significant pricing pressures in the rigid packaging market. These pressures could have a material adverse effect on the Company's operations.

Lower Demand Levels—Changes in consumer preferences may have a material adverse effect on the Company's financial results.

Changes in consumer preferences for the food and beverages they consume can reduce demand for the Company's products. Because many of the Company's products are used to package consumer goods, the Company's sales and profitability could be negatively impacted by changes in consumer preferences for those products. Examples of changes in consumer preferences include, but are not limited to, lower sales of major domestic beer brands and shifts from beer to wine or spirits that results in the use of fewer glass containers. In periods of lower demand, the Company's sales and production levels may decrease causing a material adverse effect on the Company's profitability.

Energy Costs—Higher energy costs worldwide and interrupted power supplies may have a material adverse effect on operations.

Electrical power, natural gas, and fuel oil are vital to the Company's operations as it relies on a continuous energy supply to conduct its business. Depending on the location and mix of energy sources, energy accounts for 10% to 20% of total production costs. Substantial increases and volatility in energy costs could cause the Company to experience a significant increase in operating costs, which may have a material adverse effect on operations.

Global Economic Environment—The global credit, financial and economic environment could have a material adverse effect on operations and financial condition.

The global credit, financial and economic environment could have a material adverse effect on operations, including the following:

- Downturns in the business or financial condition of any of the Company's customers or suppliers could result in a loss of revenues or a disruption in the supply of raw materials;
- Tightening of credit in financial markets could reduce the Company's ability, as well as the ability of the Company's customers and suppliers, to obtain future financing;
- Volatile market performance could affect the fair value of the Company's pension assets and liabilities, potentially requiring the Company to make significant additional contributions to its pension plans to maintain prescribed funding levels;

The deterioration of any of the lending parties under the Company's revolving credit facility or the creditworthiness of the counterparties to the Company's derivative transactions could result in such parties' failure to satisfy their obligations under their arrangements with the Company; and

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- A significant weakening of the Company's financial position or results of operations could result in noncompliance with the covenants under the Company's indebtedness.

Business Integration Risks—The Company may not be able to effectively integrate additional businesses it acquires in the future.

The Company may consider strategic transactions, including acquisitions that will complement, strengthen and enhance growth in its worldwide glass operations. The Company evaluates opportunities on a preliminary basis from time to time, but these transactions may not advance beyond the preliminary stages or be completed. Such acquisitions are subject to various risks and uncertainties, including:

- The inability to integrate effectively the operations, products, technologies and personnel of the acquired companies (some of which may be located in diverse geographic regions) and achieve expected synergies;
- The potential disruption of existing business and diversion of management's attention from day to day operations;
- The inability to maintain uniform standards, controls, procedures and policies;
- The need or obligation to divest portions of the acquired companies;
- The potential impairment of relationships with customers;
- The potential failure to identify material problems and liabilities during due diligence review of acquisition targets;
- The potential failure to obtain sufficient indemnification rights to fully offset possible liabilities associated with acquired businesses; and
- The challenges associated with operating in new geographic regions.

In addition, the Company cannot make assurances that the integration and consolidation of newly acquired businesses will achieve any anticipated cost savings and operating synergies.

Customer Consolidation—The continuing consolidation of the Company's customer base may intensify pricing pressures and have a material adverse effect on operations.

Many of the Company's largest customers have acquired companies with similar or complementary product lines. This consolidation has increased the concentration of the Company's business with its largest customers. In many cases, such consolidation has been accompanied by pressure from customers for lower prices, reflecting the increase in the total volume of products purchased or the elimination of a price differential between the acquiring customer and the company acquired. Increased pricing pressures from the Company's customers may have a material adverse effect on operations.

Operational Disruptions—Profitability could be affected by unanticipated operational disruptions.

The Company's glass container manufacturing process is asset intensive and includes the use of large furnaces and machines. The Company periodically experiences unanticipated disruptions to its assets and these events can have an adverse effect on its business operations and profitability. The impacts of these operational disruptions include, but are not limited to, higher maintenance, production changeover and shipping costs, higher capital spending, as well as lower absorption of fixed costs during periods of extended downtime. The Company maintains insurance policies in amounts and with coverage and deductibles that are reasonable and in line with industry standards; however, this insurance coverage may not be adequate to protect the Company from all liabilities and expenses that may arise.

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Seasonality—Profitability could be affected by varied seasonal demands.

Due principally to the seasonal nature of the consumption of beer and other beverages, for which demand is stronger during the summer months, sales of the Company's products have varied and are expected to vary by quarter. Shipments in the U.S. and Europe are typically greater in the second half of the year, while shipments in the Asia Pacific region are typically greater in the first and fourth quarters of the year, and shipments in South America are typically greater in the last three quarters of the year. Unseasonably cool weather during peak demand periods can reduce demand for certain beverages packaged in the Company's containers.

Raw Materials—Profitability could be affected by the availability and cost of raw materials.

The raw materials that the Company uses have historically been available in adequate supply from multiple sources. For certain raw materials, however, there may be temporary shortages due to weather or other factors, including disruptions in supply caused by transportation or production delays. These shortages, as well as material volatility in the cost of any of the principal raw materials that the Company uses, may have a material adverse effect on operations.

In addition, the Company purchases its soda ash raw materials in U.S. dollars in South America, Mexico and Asia Pacific. Given fluctuations in foreign currency exchange rates, this may cause these regions to experience inflationary or deflationary impacts to their raw material costs.

Environmental Risks—The Company is subject to various environmental legal requirements and may be subject to new legal requirements in the future. These requirements may have a material adverse effect on operations.

The Company's operations and properties are subject to extensive laws, ordinances, regulations and other legal requirements relating to environmental protection, including legal requirements governing investigation and clean up of contaminated properties as well as water discharges, air emissions, waste management and workplace health and safety. Such legal requirements frequently change and vary among jurisdictions. The Company's operations and properties must comply with these legal requirements. These requirements may have a material adverse effect on operations.

The Company has incurred, and expects to incur, costs for its operations to comply with environmental legal requirements, and these costs could increase in the future. Many environmental legal requirements provide for substantial fines, orders (including orders to cease operations), and criminal sanctions for violations. These legal requirements may apply to conditions at properties that the Company presently or formerly owned or operated, as well as at other properties for which the Company may be responsible, including those at which wastes attributable to the Company were disposed. A significant order or judgment against the Company, the loss of a significant permit or license or the imposition of a significant fine may have a material adverse effect on operations.

A number of governmental authorities have enacted, or are considering enacting, legal requirements that would mandate certain rates of recycling, the use of recycled materials and/or limitations on certain kinds of packaging materials. In addition, some companies with packaging needs have responded to such developments and/or perceived environmental concerns of consumers by using containers made in whole or in part of recycled materials. Such developments may reduce the demand for some of the Company's products and/or increase the Company's costs, which may have a material adverse effect on operations.

Governmental authorities have also enacted, or are considering enacting, legal requirements restricting the volume of GHG emissions that manufacturing facilities can produce with penalties for companies that do not comply. A reduction in the quantity of permitted GHG emissions under existing rules, or the introduction of new GHG emissions rules, in jurisdictions where the Company operates, could have a material effect on the its results. The Company is not

able to predict what environmental legal requirements may be adopted in the future nor the impact such future environmental legal requirements may have on its results of operations or cash flows.

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Taxes—Potential tax law and U.S. trade policy changes could adversely affect net income and cash flow.

The Company is subject to income tax in the numerous jurisdictions in which it operates. Increases in income tax rates or other tax law changes, as well as ongoing audits by domestic and international authorities, could reduce the Company's net income and cash flow from affected jurisdictions. In particular, additional guidance is likely to be issued providing further clarification on the application of the U.S. Tax Cuts and Jobs Act, which was signed into law on December 22, 2017, and proposed regulations that have subsequently been issued with respect to the provisions enacted pursuant to such law. Further, it is reasonable to expect that global taxing authorities will be reviewing current legislation for potential modifications in reaction to the implementation of the U.S. legislation. This additional guidance, along with the potential for additional global tax legislation changes, could have a material adverse impact on net income and cash flow by impacting significant deductions or income inclusions. In addition, the Company's products are subject to import and excise duties and/or sales or value added taxes in many jurisdictions in which it operates. Increases in these indirect taxes could affect the affordability of the Company's products and, therefore, reduce demand.

In addition, existing free trade laws and regulations, such as the North American Free Trade Agreement, provide certain beneficial duties and tariffs for qualifying imports and exports, subject to compliance with the applicable classification and other requirements. Changes in laws or policies governing the terms of foreign trade, and in particular increased trade restrictions, tariffs or taxes on imports from countries where the Company manufactures products, such as Mexico, could have a material adverse effect on its business and financial results. Also, a government's adoption of "buy national" policies or retaliation by another government against such policies may affect the prices of and demand for the Company's products and could have a negative impact on the Company's results of operations.

Many international legislative and regulatory bodies have proposed legislation and begun investigations of the tax practices of multinational companies and, in the European Union (EU), the tax policies of certain EU member states. One of these efforts has been led by the OECD, an international association of 36 countries including the United States, which has finalized recommendations to revise corporate tax, transfer pricing, and tax treaty provisions in member countries. Since 2013, the European Commission (EC) has been investigating tax rulings granted by tax authorities in a number of EU member states with respect to specific multinational corporations to determine whether such rulings comply with EU rules on state aid, as well as more recent investigations of the tax regimes of certain EU member states. If the EC determines that a tax ruling or tax regime violates the state aid restrictions, the tax authorities of the affected EU member state may be required to collect back taxes for the period of time covered by the ruling. Due to the large scale of the Company's U.S. and international business activities, many of these proposed changes to the taxation of the Company's activities, if enacted, could increase the Company's worldwide effective tax rate and harm results of operations.

Labor Relations—Some of the Company's employees are unionized or represented by workers' councils.

The Company is party to a number of collective bargaining agreements with labor unions which at December 31, 2018, covered approximately 68% of the Company's employees in the U.S. and Canada. The principal collective bargaining agreement, which at December 31, 2018 covered approximately 77% of the Company's union affiliated employees in U.S. and Canada, will expire on March 31, 2019. Approximately 71% of employees in South America and Mexico are covered by collective bargaining agreements. The majority of the hourly workers in Australia and New Zealand are also covered by collective bargaining agreements. The collective bargaining agreements in South

America, Mexico, Australia and New Zealand have varying terms and expiration dates. Upon the expiration of any collective bargaining agreement, if the Company is unable to negotiate acceptable contracts with labor unions, it could result in strikes by the affected workers and increased operating costs as a result of higher wages or benefits paid to union members. In Europe, a large number of the Company's employees are employed in countries in which employment laws provide greater bargaining or other rights to employees than the laws of the U.S. Such employment rights require the Company to work collaboratively with the legal representatives of the employees to effect any changes to labor arrangements. For example, most of the Company's employees in Europe are represented by workers' councils that must approve any changes in conditions of employment, including salaries and benefits and staff changes, and may impede

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efforts to restructure the Company's workforce. In addition, if the Company's employees were to engage in a strike or other work stoppage, the Company could experience a significant disruption of operations and/or higher ongoing labor costs, which may have a material adverse effect on operations.

Key Management and Personnel Retention—Failure to retain key management and personnel could have a material adverse effect on operations.

The Company believes that its future success depends, in part, on its experienced management team and certain key personnel. The loss of certain key management and personnel could limit the Company's ability to implement its business plans and meet its objectives.

Joint Ventures—Failure by joint venture partners to observe their obligations could have a material adverse effect on operations.

A portion of the Company's operations is conducted through joint ventures, including joint ventures in the Americas, Europe, and Asia Pacific segments and in retained corporate costs and other. If the Company's joint venture partners do not observe their obligations or are unable to commit additional capital to the joint ventures, it is possible that the affected joint venture would not be able to operate in accordance with its business plans, which could have a material adverse effect on the Company's financial condition and results of operations.

Information Technology—Failure or disruption of the Company's information technology, or those of third parties, could have a material adverse effect on its business and the results of operations.

The Company employs information technology ("IT") systems and networks to support the business and relies on them to operate its plants, to communicate with its employees, customers and suppliers, to store sensitive business information and intellectual property, and to report financial and operating results. As with any IT system, the Company's IT system, or any third party's system on which the Company relies, could fail on its own accord or may be vulnerable to a variety of interruptions due to events, including, but not limited to, natural disasters, terrorist attacks, power outages, fire, sabotage, equipment failures, cybersecurity vulnerabilities, and cyber-related attacks or computer crimes, any of which could have a material adverse effect on the Company's financial condition, results of operations and cash flows.

Cybersecurity and Data Privacy - Security breaches could disrupt the Company's business operations, result in the loss of critical and confidential information, and have a material adverse effect on its business, reputation and results of operations.

The Company has been subject to cyberattacks in the past, including phishing and malware incidents, and although no such attack has had a material adverse effect on its business, this may not be the case with future attacks. As the prevalence of cyberattacks continues to increase, the Company's IT systems, or those of third parties, may be subject to increased security threats and the Company may incur additional costs to upgrade and maintain its security measures in place to prevent and detect such threats. The Company's security measures may be unable to prevent certain security breaches, and any such breaches could result in transactional errors, business disruptions, loss of or damage to intellectual property, loss of customers and business opportunities, unauthorized access to or disclosure of confidential or personal information (which could cause a breach of applicable data protection legislation), regulatory fines, penalties or intervention, reputational damage, reimbursement or other compensatory costs, and additional compliance

costs, any of which could have a material adverse effect on the Company's financial condition, results of operations and cash flows. Any resulting costs or losses may not be covered by, or may exceed the coverage limits of, the Company's cyber insurance.

The Company is increasingly reliant on third parties to provide software, support and management with respect to its IT systems. The security and privacy measures the Company's vendors implement may not be sufficient to prevent and detect cyberattacks that could have a material adverse effect on the Company's financial condition, results of operations and cash flows. While the Company's IT vendor agreements typically contain provisions that seek to eliminate or limit the Company's exposure to liability for damages from a cyberattack, the Company cannot assure that such provisions will withstand legal challenges or cover all or any such damages. If

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the Company's business continuity and/or disaster recovery plans do not effectively and timely resolve issues resulting from a cyberattack, the Company may suffer material adverse effects on its financial condition, results of operations and cash flows.

In addition, new global privacy rules are being enacted and existing ones are being updated and strengthened. In May 2018, the European Union (EU) implemented the General Data Protection Regulation (GDPR) that stipulates data protection and privacy regulations for all individuals within the EU and the European Economic Area (EEA). The Company has significant operations in the EEA and is subject to the GDPR. The GDPR imposes several stringent requirements for controllers and processors of personal data and could make it more difficult and/or more costly for the Company to use and share personal data. Although the Company takes reasonable efforts to comply with all applicable laws and regulations, there can be no assurance that the Company will not be subject to regulatory action, including fines, in the event of an incident. To comply with the new data protection rules imposed by GDPR and other applicable data protection legislation, the Company may be required to put in place additional mechanisms which could adversely affect its financial condition, results of operations and cash flows.

Accounting Estimates—The Company's financial results are based upon estimates and assumptions that may differ from actual results.

In preparing the Company's consolidated financial statements in accordance with U.S. generally accepted accounting principles, several estimates and assumptions are made that affect the accounting for and recognition of assets, liabilities, revenues and expenses. These estimates and assumptions must be made due to certain information used in the preparation of the Company's financial statements which is dependent on future events, cannot be calculated with a high degree of precision from data available or is not capable of being readily calculated based on generally accepted methodologies. The Company believes that accounting for long lived assets, pension benefit plans, contingencies and litigation, and income taxes involves the more significant judgments and estimates used in the preparation of its consolidated financial statements. Actual results for all estimates could differ materially from the estimates and assumptions that the Company uses, which could have a material adverse effect on the Company's financial condition and results of operations.

Accounting Standards—The adoption of new accounting standards or interpretations could adversely impact the Company's financial results.

New accounting standards or pronouncements could adversely affect the Company's operating results or cause unanticipated fluctuations in its results in future periods. The accounting rules and regulations that the Company must comply with are complex and continually changing. In addition, many companies' accounting policies are being subjected to heightened scrutiny by regulators and the public. The Company cannot predict the impact of future changes to accounting principles or its accounting policies on its financial statements going forward. In February 2016, the Financial Accounting Standards Board issued Accounting Standards Update 2016-02, "Leases", which requires all operating leases with lease terms longer than twelve months be recorded as lease assets and lease liabilities on the Company's consolidated balance sheets. Implementing changes required by this new standard will require a significant expenditure of time, attention and resources, including significant upgrades to and investments in the Company's lease administration systems and other accounting systems, and will materially impact the Company's financial statements as the Company has a significant number of leases.

Goodwill—A significant write down of goodwill would have a material adverse effect on the Company's reported results of operations and net worth.

Goodwill at December 31, 2018 totaled \$2.5 billion. The Company evaluates goodwill annually (or more frequently if impairment indicators arise) for impairment using the required business valuation methods. These methods include the

use of a weighted average cost of capital to calculate the present value of the expected future cash flows of the Company's reporting units. Future changes in the cost of capital, expected cash flows, or other factors may cause the Company's goodwill to be impaired, resulting in a non-cash charge against results of operations to write down goodwill for the amount of the impairment. If a significant write down is required, the charge would have a material adverse effect on the Company's reported results of operations and net worth.

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Pension Funding—An increase in the underfunded status of the Company’s pension plans could adversely impact the Company’s operations, financial condition and liquidity.

The Company contributed \$34 million, \$31 million and \$38 million to its defined benefit pension plans in 2018, 2017, and 2016, respectively. The amount the Company is required to contribute to these plans is determined by the laws and regulations governing each plan, and is generally related to the funded status of the plans. A deterioration in the value of the plans’ investments or a decrease in the discount rate used to calculate plan liabilities generally would increase the underfunded status of the plans. An increase in the underfunded status of the plans could result in an increase in the Company’s obligation to make contributions to the plans, thereby reducing the cash available for working capital and other corporate uses, and may have an adverse impact on the Company’s operations, financial condition and liquidity.

ITEM 1B. UNRESOLVED STAFF COMMENTS

None.

ITEM 2. PROPERTIES

The principal manufacturing facilities and other material important physical properties of the Company at December 31, 2018 are listed below. All properties are glass container plants and are owned in fee, except where otherwise noted.

Americas Operations	
Argentina	
Rosario	
Bolivia	
Cochabamba	
Brazil	
Recife	Sao Paulo
Rio de Janeiro	
Canada	
Brampton, Ontario	Montreal, Quebec
Colombia	
Buga (tableware)	Soacha
Envigado	Zipaquira
Ecuador	
Guayaquil	
Mexico	
Guadalajara	Queretaro
Los Reyes	Toluca
Monterrey	

Peru
Callao

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United States	
Auburn, NY	Portland, OR
Brockway, PA	Streator, IL
Crenshaw, PA	Toano, VA
Danville, VA	Tracy, CA
Kalama, WA(1)	Waco, TX
Lapel, IN	Windsor, CO
Los Angeles, CA	Winston Salem, NC
Muskogee, OK	Zanesville, OH

Asia Pacific Operations	
Australia	
Adelaide	Melbourne
Brisbane	Sydney

China	
Tianjin	Zhaoqing

Indonesia
Jakarta

New Zealand
Auckland

European Operations	
Czech Republic	
Dubi	Nove Sedlo

Estonia
Jarvakandi

France	
Beziers	Vayres
Gironcourt	Veauche
Labegude	Vergeze
Puy Guillaume	Wingles
Reims	

Germany	
Bernsdorf	Rinteln
Holzminden	

Hungary
Oroshaza

Italy

Aprilia	Origgio
Asti	Ottaviano
Bari	San Gemini
Marsala	San Polo

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	Villotta
Mezzocorona	
The Netherlands	
Leerdam	Maastricht
Poland	
Jaroslav	Poznan
Spain	
Barcelona(1)	Sevilla
United Kingdom	
Alloa	Harlow
Other Operations	
Engineering Support Centers	
Brockway, Pennsylvania	Melbourne, Australia(1)
Jaroslav, Poland	Perrysburg, Ohio
Lurin, Peru	Villeurbanne, France
Shared Service Centers	
Medellin, Colombia	Poznan, Poland(1)
Perrysburg, Ohio	
Distribution Center	
Laredo, TX(1)	
Corporate Facilities	
Melbourne, Australia(1)	Perrysburg, Ohio(1)
Miami, Florida(1)	Vufflens la Ville, Switzerland(1)

(1) This facility is leased in whole or in part.

The Company believes that its facilities are well maintained and currently adequate for its planned production requirements over the next three to five years.

ITEM 3. LEGAL PROCEEDINGS

For information on legal proceedings, see Note 13 to the Consolidated Financial Statements.

ITEM 4. MINE SAFETY DISCLOSURES

Not applicable.

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PART II

ITEM 5. MARKET FOR REGISTRANT'S COMMON STOCK AND RELATED SHARE OWNER MATTERS AND ISSUER PURCHASES OF EQUITY SECURITIES

Owens-Illinois' common stock is listed on the New York Stock Exchange with the symbol OI. The number of share owners of record on December 31, 2018 was 970. Approximately 100% of the outstanding shares were registered in the name of Depository Trust Company, or CEDE & Co., which held such shares on behalf of a number of brokerage firms, banks, and other financial institutions. The shares attributed to these financial institutions, in turn, represented the interests of more than 38,015 unidentified beneficial owners.

In November 2018, the Company's Board of Directors declared a dividend of \$0.05 per share, which will be paid on February 12, 2019 to shareholders of record on the close of business on January 22, 2019. The Company anticipates that it will continue to pay quarterly cash dividends in the future. However, the payment and amount of future dividends remain within the discretion of the Company's Board of Directors and will depend upon the Company's future earnings, financial condition, capital requirements, and other factors.

Information with respect to securities authorized for issuance under equity compensation plans is included herein under Item 12.

The Company purchased 3,254,752 shares of its common stock during the fourth quarter of 2018 (8.6 million shares for the year) for approximately \$56 million pursuant to authorization by its Board of Directors in January 2018 to purchase up to \$400 million of the Company's common stock along with an authorization by its Board of Directors in November 2018 to purchase an additional \$313 million of the Company's common stock. The following table provides information about the Company's purchases of its common stock during the fourth quarter of 2018:

Issuer Purchases of Equity Securities

Period	Total Number of Shares Purchased (in thousands)	Average Price Paid per Share	Total Number of Shares Purchased as Part of Publicly Announced Plan (in thousands)	Approximate Dollar Value of Shares that May Yet Be Purchased Under the Plan (in millions)
October 1 - October 31, 2018	316	\$ 19.13	316	\$ 287
November 1 – November 30, 2018	450	17.28	450	592
December 1 - December 31, 2018	2,489	16.96	2,489	550

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	Years Ending December 31,					
	2013	2014	2015	2016	2017	2018
Owens-Illinois, Inc.	\$ 100.00	\$ 75.43	\$ 48.69	\$ 48.66	\$ 61.96	\$ 48.18
S&P 500	100.00	113.69	115.26	129.05	157.22	150.33
Packaging Group	100.00	111.78	111.93	118.65	128.51	123.00

The above graph compares the performance of the Company's Common Stock with that of a broad market index (the S&P 500 Composite Index) and a packaging group consisting of companies with lines of business or product end uses comparable to those of the Company for which market quotations are available.

The packaging group consists of: AptarGroup, Inc., Ball Corp., Bemis Company, Inc., Crown Holdings, Inc., Owens Illinois, Inc., Sealed Air Corp., Silgan Holdings Inc., and Sonoco Products Co.

The comparison of total return on investment for each period is based on the investment of \$100 on December 31, 2013 and the change in market value of the stock, including additional shares assumed purchased through reinvestment of dividends, if any.

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ITEM 6. SELECTED FINANCIAL DATA

The selected consolidated financial data presented below relates to each of the five years in the period ended December 31, 2018, which was derived from the audited consolidated financial statements of the Company.

	Years ended December 31,				
	2018	2017	2016	2015	2014
	(Dollars in millions)				
Consolidated operating results(a):					
Net sales	\$ 6,877	\$ 6,869	\$ 6,702	\$ 6,156	\$ 6,784
Cost of goods sold (b)	(5,594)	(5,536)	(5,392)	(5,046)	(5,481)
Gross profit	1,283	1,333	1,310	1,110	1,303
Selling and administrative, research, development and engineering (b)	(553)	(544)	(568)	(540)	(571)
Other expense, net (b)	(192)	(246)	(114)	(51)	(195)
Earnings before interest expense and items below	538	543	628	519	537
Interest expense, net	(261)	(268)	(272)	(251)	(230)
Earnings from continuing operations before income taxes	277	275	356	268	307
Provision for income taxes	(108)	(70)	(119)	(106)	(92)
Earnings from continuing operations	169	205	237	162	215
Gain (loss) from discontinued operations	113	(3)	(7)	(4)	(23)
Net earnings	282	202	230	158	192
Net (earnings) attributable to noncontrolling interests	(25)	(22)	(21)	(23)	(28)
Net earnings attributable to the Company	\$ 257	\$ 180	\$ 209	\$ 135	\$ 164

	Years ended December 31,				
	2018	2017	2016	2015	2014
Basic earnings per share of common stock:					
Earnings from continuing operations	\$ 0.90	\$ 1.12	\$ 1.33	\$ 0.86	\$ 1.14
Gain (loss) from discontinued operations	0.71	(0.01)	(0.04)	(0.03)	(0.14)
Net earnings	\$ 1.61	\$ 1.11	\$ 1.29	\$ 0.83	\$ 1.00
Weighted average shares outstanding (in thousands)	160,125	162,737	161,857	161,169	164,720
Diluted earnings per share of common stock:					
Earnings from continuing operations	\$ 0.89	\$ 1.11	\$ 1.32	\$ 0.85	\$ 1.13
Gain (loss) from discontinued operations	0.70	(0.01)	(0.04)	(0.03)	(0.14)
Net earnings	\$ 1.59	\$ 1.10	\$ 1.28	\$ 0.82	\$ 0.99
Diluted average shares (in thousands)	162,088	164,647	162,825	162,135	166,047
Dividends declared per common share	\$ 0.05	\$	\$	\$	\$

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	Years ended December 31,				
	2018	2017	2016	2015	2014
	(Dollars in millions)				
Other data:					
The following are included in earnings from continuing operations:					
Depreciation	\$ 388	\$ 387	\$ 375	\$ 323	\$ 335
Amortization of intangibles	106	101	103	86	83
Amortization of deferred finance fees (included in interest expense)	13	13	13	15	30
Balance sheet data (at end of period):					
Working capital (current assets less current liabilities)	\$ 150	\$ 140	\$ 194	\$ 212	\$ 43
Total assets	9,699	9,756	9,135	9,421	7,843
Total debt	5,341	5,283	5,328	5,573	3,445
Total share owners' equity	\$ 900	\$ 927	\$ 363	\$ 279	\$ 771

(a) Note that the items below relate to items management considers not representative of ongoing operations.

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	Years ended December 31,				
	2018	2017	2016	2015	2014
	(Dollars in millions)				
Cost of goods sold (b)					
Acquisition-related fair value inventory adjustments	\$ —	\$ —	\$ —	\$ 22	\$ —
Restructuring, asset impairment and related charges	5				8
Other expense, net (b)					
Restructuring, asset impairment and other charges	97	77	129	75	78
Pension settlement charges	74	218	98		65
Gain on China land sale			(71)		
Charge for asbestos-related costs	125			16	46
Strategic transaction costs				23	
Non-income tax charge					69
Acquisition-related fair value intangible adjustments				10	
Equity earnings related charges				5	5
Interest expense, net					
Note repurchase premiums and additional interest charges for the write-off of unamortized deferred financing fees related to the early extinguishment of debt	11	18	9	42	20
Provision for income taxes					
Net tax (benefit) expense for income tax on items above	(14)	(27)	1	(15)	(34)
Tax expense (benefit) recorded for certain tax adjustments		(29)	(8)	8	(8)
Net earnings attributable to noncontrolling interest					
Net impact of noncontrolling interests on items above	(1)	(3)	2		
	\$ 297	\$ 254	\$ 160	\$ 186	\$ 249

(b) As a result of a new accounting standard, Accounting Standards Update No. 2017-07, "Improving the Presentation of Net Periodic Pension Cost and Net Periodic Postretirement Benefit Cost," the Company reclassified \$200 million, \$98 million and \$50 million of pension settlement charges from Cost of goods sold to Other expense, net for the years ended December 31, 2017, 2016 and 2014, respectively. The Company also reclassified \$18 million and \$15 million of pension settlement charges from Selling and administrative expense to Other expense, net for the years ended December 31, 2017 and 2014, respectively.

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

The Company's measure of profit for its reportable segments is segment operating profit, which consists of consolidated earnings from continuing operations before interest income, interest expense, and provision for income taxes and excludes amounts related to certain items that management considers not representative of ongoing operations as well as certain retained corporate costs. The segment data presented below is prepared in accordance with general accounting principles for segment reporting. The line titled "reportable segment totals", however, is a non GAAP measure when presented outside of the financial statement footnotes. Management has included reportable segment totals below to facilitate the discussion and analysis of financial condition and results of operations. The Company's management uses segment operating profit, in combination with selected cash flow information, to evaluate performance and to allocate resources.

As previously disclosed, to better leverage its scale and presence across a larger geography and market, the Company completed the consolidation of the former North America and Latin America segments into one segment, named the Americas, effective January 1, 2018. The consolidation resulted in the leadership roles of the former North America and Latin America segments being combined into one position, President of the Americas, reporting to the Company's chief operating decision maker ("CODM"), who is the Company's Chief Executive Officer. Beginning January 1, 2018, the CODM reviews the operating results at the Americas level to make resource allocation decisions and to assess performance. The consolidation also resulted in the elimination of duplicative costs as certain functions of the former North America and Latin America segments were combined to simplify the management of the new Americas segment. For example, the Company consolidated its business shared service centers in North America and Latin America into one Americas shared service center. Amounts for 2017 and 2016 in the following tables are presented on the redefined basis for the Americas segment.

Financial information regarding the Company's reportable segments is as follows (dollars in millions):

	2018	2017	2016
Net sales:			
Americas	\$ 3,638	\$ 3,711	\$ 3,652
Europe	2,489	2,375	2,300
Asia Pacific	675	714	684
Reportable segment totals	6,802	6,800	6,636
Other	75	69	66
Net sales	\$ 6,877	\$ 6,869	\$ 6,702

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	2018	2017	2016
Segment operating profit:			
Americas	\$ 585	\$ 614	\$ 568
Europe	316	263	237
Asia Pacific	44	65	77
Reportable segment totals	945	942	882
Items excluded from segment operating profit:			
Retained corporate costs and other	(106)	(104)	(98)
Charge for asbestos-related costs	(125)		
Pension settlement charges	(74)	(218)	(98)
Restructuring, asset impairment and other charges	(102)	(77)	(129)
Gain on China land sale			71
Interest expense, net	(261)	(268)	(272)
Earnings from continuing operations before income taxes	277	275	356
Provision for income taxes	(108)	(70)	(119)
Earnings from continuing operations	169	205	237
Gain (loss) from discontinued operations	113	(3)	(7)
Net earnings	282	202	230
Net earnings attributable to noncontrolling interests	(25)	(22)	(21)
Net earnings attributable to the Company	\$ 257	\$ 180	\$ 209
Net earnings from continuing operations attributable to the Company	\$ 144	\$ 183	\$ 216

Note: all amounts excluded from reportable segment totals are discussed in the following applicable sections.

Executive Overview—Comparison of 2018 with 2017

2018 Highlights

- Net sales in 2018 were up slightly from the same period in 2017, driven by higher prices but partially offset by lower volumes and an unfavorable effect of changes in foreign currency exchange rates.
- Segment operating profit for reportable segments was up slightly in 2018 compared to 2017. Higher segment operating profit in Europe more than offset lower segment operating profit in the other regions.
- The Company combined the North America and Latin America segments into one segment, named the Americas, to better leverage its scale and presence across a larger geography and market, and to reduce costs.
- The Company acquired a 49.7 percent interest in Empresas Comegua S.A., the leading manufacturer of glass containers for the Central American and Caribbean markets, for approximately \$119 million.
- The Company entered into a new \$1.91 billion senior secured credit facility with a final maturity date of June 2023.
- The Company's Board of Directors declared a dividend of \$0.05 per share which will be paid on February 12, 2019 to shareholders of record on the close of business on January 22, 2019.
- The Company repurchased approximately 8.6 million shares of its common stock during 2018 for approximately \$163 million. The Company's Board of Directors also authorized an increase of the existing share repurchase program, resulting in approximately \$550 million in remaining repurchase authority as of December 31, 2018.

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Net sales in 2018 increased by \$8 million compared to the same period in the prior year primarily due to higher prices, but partially offset by lower volumes and an unfavorable effect of changes in foreign currency exchange rates.

Earnings from continuing operations before income taxes were \$2 million higher in 2018 than in the prior year, primarily due to higher segment operating profit. Segment operating profit for reportable segments in 2018 were \$3 million higher compared to the prior year. Higher segment operating profit in Europe more than offset lower segment operating profit in the other regions.

Net interest expense in 2018 decreased \$7 million compared to 2017. The decrease was primarily due to lower note repurchase premiums and write-offs of deferred finance fees recorded in 2018 than in 2017.

For 2018, the Company recorded net earnings from continuing operations attributable to the Company of \$144 million, or \$0.89 per share (diluted), compared with \$183 million, or \$1.11 per share (diluted), in 2017.

Earnings in both periods included items that management considered not representative of ongoing operations. These items decreased earnings from continuing operations attributable to the Company by \$297 million, or \$1.83 per share, in 2018 and \$254 million, or \$1.54 per share, in 2017.

Results of Operations—Comparison of 2018 with 2017

Net Sales

The Company's net sales in 2018 were \$6,877 million compared with \$6,869 million in 2017, an increase of \$8 million, or less than 1%. Higher selling prices benefited net sales by \$150 million in 2018. Unfavorable foreign currency exchange rates, driven by a weaker Brazilian real and the Mexican peso, decreased net sales by \$20 million in 2018 compared to the prior year. Total glass container shipments, in tonnes, were down approximately 2% in 2018 compared to the prior year and were driven by the transfer of production to the Company's joint venture in Mexico, the ongoing trends in U.S. beer shipments, the Brazil transportation strike and capacity constraints in both the Americas and Europe. Lower sales volume and an unfavorable sales mix decreased net sales by \$128 million.

The change in net sales of reportable segments can be summarized as follows (dollars in millions):

Net sales— 2017		\$ 6,800
Price	\$ 150	
Sales volume	(128)	
Effects of changing foreign currency rates	(20)	
Total effect on net sales		2
Net sales— 2018		\$ 6,802

Americas: Net sales in the Americas in 2018 were \$3,638 million compared with \$3,711 million for the same period in 2017, a decrease of \$73 million, or 2%. Higher selling prices increased net sales by \$117 million in 2018. Total glass container shipments in the region were down 3% in 2018 compared to the prior year with higher shipments to food customers offset by lower shipments to alcoholic beverage customers. Despite the transportation strike and capacity constraints, year over year shipments in Brazil were also strong in 2018. In the U.S., solid year over year growth in shipments to food customers in 2018 were more than offset by a decline in shipments to alcoholic beverage customers, owing to the ongoing trends in beer shipments and the transfer of production to the Company's joint venture with Constellation Brands. Overall, the change in sales volume and mix in the region decreased net sales by \$98 million in 2018. The effects of foreign currency exchange rate changes decreased net sales \$92 million in 2018 compared to 2017, primarily due to the weakening of the Brazilian real and the Mexican peso in relation to the U.S.

dollar.

Europe: Net sales in Europe in 2018 were \$2,489 million compared with \$2,375 million for the same period in 2017, an increase of \$114 million, or 5%. The effects of foreign currency exchange rates increased net sales in the region by approximately \$95 million in 2018 as the Euro strengthened in relation to the U.S. dollar. Glass container shipments in 2018 were down less than 1% compared to the same period in 2017, partially due to

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certain production capacity constraints. These slightly lower shipments in the region in 2018 resulted in \$5 million of lower net sales. Selling prices in Europe increased net sales by \$24 million in 2018 compared to the prior year.

Asia Pacific: Net sales in Asia Pacific in 2018 were \$675 million compared with \$714 million in 2017, a decrease of \$39 million, or 5%. Glass container shipments in 2018 were down 3% compared to 2017, primarily driven by lower shipments to alcoholic beverage customers in Australia, resulting in \$25 million of lower net sales. Slightly higher selling prices increased net sales by \$9 million in 2018. The unfavorable effects of foreign currency exchange rate changes decreased net sales by \$23 million as the Australian Dollar and New Zealand Dollar weakened in relation to the U.S. dollar.

Earnings from Continuing Operations before Income Taxes and Segment Operating Profit

Earnings from continuing operations before income taxes were \$277 million in 2018 compared to \$275 million for the same period in 2017, an increase of \$2 million, or nearly 1%, and were primarily due to higher segment operating profit.

Operating profit of the reportable segments includes an allocation of some corporate expenses based on a percentage of sales and direct billings based on the costs of specific services provided. Unallocated corporate expenses and certain other expenses not directly related to the reportable segments' operations are included in Retained corporate costs and other. For further information, see Segment Information included in Note 2 to the Condensed Consolidated Financial Statements.

Segment operating profit of reportable segments in 2018 was \$945 million compared to \$942 million for 2017, an increase of \$3 million, or less than 1%. Higher selling prices in 2018 slightly outpaced higher costs, lower sales volumes and an unfavorable impact from the effects of foreign currency exchange rates. Higher segment operating profit in Europe more than offset lower segment operating profit in the other regions.

The change in segment operating profit of reportable segments can be summarized as follows (dollars in millions):

Segment operating profit - 2017		\$ 942
Price	\$ 150	
Sales volume	(25)	
Operating costs	(119)	
Effects of changing foreign currency rates	(3)	
Total net effect on segment operating profit		3
Segment operating profit - 2018		\$ 945

Americas: Segment operating profit in the Americas in 2018 was \$585 million compared with \$614 million in 2017, a decrease of \$29 million, or 5%. The change in sales volume and mix discussed above decreased segment operating profit in the current year by \$16 million. Selling prices were \$117 million higher in the current year period compared to the prior year. Segment operating profit was impacted by \$149 million of higher operating costs in 2018 than in the same period in the prior year, driven by cost inflation, the transportation strike in Brazil, a raw material batch disruption issue at a plant in Mexico, and higher transportation costs due to freight rate inflation. The region also benefitted from \$11 million of insurance proceeds in 2018. In addition, the region recorded a \$19 million gain in 2018 based on a favorable court ruling in Brazil, which will allow the region to recover revenue tax paid in previous years. The region's previous restructuring actions have reduced operating costs by approximately \$6 million in 2018, in line with management's expectations. The effects of foreign currency exchange rates decreased segment operating profit by \$17 million in 2018, which included \$4 million from the impact of highly-inflationary basis of accounting in the region's operations in Argentina.

Europe: Segment operating profit in Europe in 2018 was \$316 million compared with \$263 million in 2017, an increase of \$53 million, or 20%. The effects of foreign currency exchange rates increased segment operating profit by \$15 million in the current year period. Selling prices were \$24 million higher in 2018 compared to the prior year period. Segment operating profit in 2018 improved due to approximately \$5 million of lower operating costs compared to the same period in the prior year. Lower production volumes in the region were partially

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offset by an approximate \$11 million gain related to an asset sale. In addition, the prior year permanent footprint adjustment in the region contributed to lower operating costs in 2018, in line with management's expectations when the restructuring activities were initiated. The change in sales volume and mix described above reduced segment operating profit by \$2 million.

Asia Pacific: Segment operating profit in Asia Pacific in 2018 was \$44 million compared with \$65 million in 2017, a decrease of \$21 million, or 32%. As anticipated, cost inflation and asset improvement projects in the region drove operating costs higher and decreased segment operating profit by \$22 million in 2018 compared to the same period in the prior year. The decrease in sales volume discussed above reduced segment operating profit by \$7 million. Higher selling prices increased segment operating profit in 2018 by \$9 million. The effects of foreign currency exchange rates decreased segment operating profit by \$1 million in 2018.

Interest Expense, Net

Net interest expense for 2018 was \$261 million compared with \$268 million in 2017. Net interest expense included \$11 million and \$18 million in 2018 and 2017, respectively, for note repurchase premiums and the write-off of deferred finance fees that were related to debt that was repaid prior to its maturity. Exclusive of these items, net interest expense was comparable in 2018 to the prior year.

Provision for Income Taxes

The Company's effective tax rate from continuing operations for 2018 was 39.0% compared with 25.5% for 2017. The effective tax rate for 2018 was higher than the same period in 2017 primarily due to the nonoccurrence of a resolution of a tax matter in 2017 that resulted in approximately \$26 million of tax accruals being reversed. The effective tax rates for both 2018 and 2017 were also impacted by several charges that management considered not representative of ongoing operations, including charges for restructuring, pension settlements, asbestos-related costs, and the write-off of finance fees, for which no tax benefit was recorded due to the Company's valuation allowance recorded in the U.S.

Excluding the amounts related to items that management considers not representative of ongoing operations, the Company's effective tax rate was approximately 21% in 2018 and 2017.

Net Earnings from Continuing Operations Attributable to the Company

For 2018, the Company recorded net earnings from continuing operations attributable to the Company of \$144 million, or \$0.89 per share (diluted), compared to \$183 million, or \$1.11 per share (diluted), in 2017. Earnings in 2018 and 2017 included items that management considered not representative of ongoing operations as set forth in the following table (dollars in millions):

Description	Net Earnings	
	2018	2017
Charge for asbestos-related costs	\$ (125)	\$ —
Pension settlement charges	(74)	(218)
Restructuring, asset impairment and other charges	(102)	(77)
Note repurchase premiums and write-off of finance fees	(11)	(18)

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Tax benefit for certain tax adjustments		29
Net benefit (charge) for income tax on items above	14	27
Net impact of noncontrolling interests on items above	1	3
Total	\$ (297)	\$ (254)

Foreign Currency Exchange Rates

Given the global nature of its operations, the Company is subject to fluctuations in foreign currency exchange rates. As described above, the Company's reported revenues and segment operating profit in 2018 were decreased due to foreign currency effects compared to 2017.

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This trend may continue into 2019. During times of a strengthening U.S. dollar, the reported revenues and segment operating profit of the Company's international operations will be reduced because the local currencies will translate into fewer U.S. dollars. The Company uses certain derivative instruments to mitigate a portion of the risk associated with changing foreign currency exchange rates.

Executive Overview—Comparison of 2017 with 2016

2017 Highlights

- Net sales were up nearly 3% compared to the prior year, driven by higher shipments, higher prices and the favorable effects of changes in foreign currency exchange rates
- Driven by higher shipments and progress on strategic initiatives, segment operating profit was higher in all regions, except for Asia Pacific, compared to the prior year
- Issued €225 million and \$310 million of senior notes and repaid higher-cost debt
- Received \$115 million from selling the Company's right, title and interest in amounts due under a prior arbitration award in Venezuela

Net sales increased by \$167 million compared to the prior year primarily due to the favorable effect of changes in foreign currency exchange rates, higher shipments and higher prices.

Earnings from continuing operations before income taxes were \$81 million lower in 2017 than the prior year primarily due to higher pension settlement charges, partially offset by higher segment operating profit. Segment operating profit for reportable segments increased by \$60 million compared to the prior year. For 2017, segment operating profit in all regions, except for Asia Pacific, exceeded prior year amounts.

Net interest expense in 2017 decreased \$4 million compared to 2016. Net interest expense included \$18 million and \$9 million in 2017 and 2016, respectively, for note repurchase premiums and the write off of finance fees related to debt that was repaid prior to its maturity. Exclusive of these items, net interest expense decreased \$13 million in 2017 primarily due to deleveraging and refinancing actions.

For 2017, the Company recorded earnings from continuing operations attributable to the Company of \$183 million, or \$1.11 per share (diluted), compared with earnings of \$216 million, or \$1.32 per share (diluted), for 2016. Earnings in both periods included items that management considered not representative of ongoing operations. These items decreased earnings from continuing operations attributable to the Company by \$254 million, or \$1.54 per share, in 2017 and \$160 million, or \$0.99 per share, in 2016.

Results of Operations—Comparison of 2017 with 2016

Net Sales

The Company's net sales in 2017 were \$6,869 million compared with \$6,702 million in 2016, an increase of \$167 million, or approximately 3%. Higher selling prices benefited net sales by \$61 million in 2017. Total glass container shipments, in tonnes, were up approximately 1% in 2017 compared to the same period in the prior year. However, an unfavorable sales mix resulted in approximately \$3 million of lower sales. Favorable foreign currency exchange rates, primarily due to a stronger Euro, Brazilian real, Colombian peso, Australian dollar and New Zealand dollar, increased sales by \$106 million.

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The change in net sales of reportable segments can be summarized as follows (dollars in millions):

Net sales— 2016		\$ 6,636
Price	\$ 61	
Sales volume (excluding acquisitions)	(3)	
Effects of changing foreign currency rates	106	
Total effect on net sales		164
Net sales— 2017		\$ 6,800

Americas: Net sales in the Americas in 2017 were \$3,711 million compared with \$3,652 million in 2016, an increase of \$59 million, or 2%. Higher selling prices increased net sales by \$59 million in 2017. Total glass shipments in the region were comparable in 2017 to the prior year. Strong shipments in Mexico and higher shipments in Brazil were nearly offset by lower shipments to beer customers in the U.S. An unfavorable sales mix resulted in \$32 million of lower sales in 2017 and was partially due to several customers converting a portion of their glass shipments from carton packaging to bulk shipments. Favorable foreign currency exchange rates increased net sales by \$32 million, principally due to a strengthening of the Brazilian real and Colombian peso in relation to the U.S. dollar.

Europe: Net sales in Europe in 2017 were \$2,375 million compared with \$2,300 million in 2016, an increase of \$75 million, or 3%. Net sales in 2017 were benefited by a 1% increase in glass container shipments driven by higher shipments to beer, spirits and wine customers. This increased net sales by \$28 million compared to the prior year. Favorable foreign currency exchange rates increased net sales by \$57 million, as the Euro strengthened in relation to the U.S. dollar. As a result of the pass through of 2016 cost deflation to customers under contractual price adjustment formulas, selling prices in Europe were \$10 million lower in 2017 compared to the same period in the prior year.

Asia Pacific: Net sales in Asia Pacific in 2017 were \$714 million compared with \$684 million in 2016, an increase of \$30 million, or 4%. The favorable effects of foreign currency exchange rates changes during 2017, primarily due to the strengthening of the Australian dollar and New Zealand dollar in relation to the U.S. dollar, increased net sales by \$17 million. Glass container shipments were down 1% in 2017 as higher shipments to food customers were more than offset by lower shipments to beer and non-alcoholic beverage customers. This resulted in a slightly favorable sales mix, which contributed to \$1 million of higher sales in 2017. Slightly higher selling prices also increased net sales by \$12 million in 2017.

Earnings from Continuing Operations before Income Taxes and Segment Operating Profit

Earnings from continuing operations before income taxes were \$275 million in 2017 compared with \$356 million for the same period in 2016, a decrease of \$81 million, or 23%. This decrease was primarily due to higher pension settlement charges, partially offset by higher segment operating profit.

Operating profit of the reportable segments includes an allocation of some corporate expenses based on both a percentage of sales and direct billings based on the costs of specific services provided. Unallocated corporate expenses and certain other expenses not directly related to the reportable segments' operations are included in Retained corporate costs and other. For further information, see Segment Information included in Note 2 to the Consolidated Financial Statements.

Segment operating profit of reportable segments in 2017 was \$942 million compared to \$882 million in 2016, an increase of \$60 million, or 7%. Higher selling prices increased segment operating profit by \$61 million and the favorable effects of foreign currency exchange rates increased segment operating profit by \$11 million in 2017. Partially offsetting this was \$12 million of higher operating costs.

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The change in segment operating profit of reportable segments can be summarized as follows (dollars in millions):

Segment operating profit - 2016		\$ 882
Price	\$ 61	
Sales volume (excluding acquisitions)	—	
Operating costs	(12)	
Effects of changing foreign currency rates	11	
Total net effect on segment operating profit		60
Segment operating profit - 2017		\$ 942

Americas: Segment operating profit in the Americas in 2017 was \$614 million compared with \$568 million in 2016, an increase of \$46 million, or 8%. Selling prices were \$59 million higher in 2017 compared to the prior year. The unfavorable sales mix discussed above decreased segment operating profit by \$7 million. Operating costs in 2017 were higher than the same period in the prior year and this decreased segment operating profit by \$16 million. Despite significant benefits from cost savings initiatives and higher equity earnings from the Company's joint-venture with Constellation Brands ("Constellation Brands") in Mexico, these benefits were more than offset by substantial cost inflation. Beginning in the first quarter of 2017, equity earnings from this joint-venture were recorded in the Americas region. In prior years, equity earnings from this joint-venture were recorded in retained corporate costs and other as it was mostly in construction mode. In addition, approximately \$5 million in gains related to non-strategic asset sales were recognized by the region in 2017. The favorable effects of foreign currency exchange rates increased segment operating profit by \$5 million in 2017.

Europe: Segment operating profit in Europe in 2017 was \$263 million compared with \$237 million in 2016, an increase of \$26 million, or 11%. Operating costs were \$25 million lower in 2017 than the prior year period due to cost savings initiatives, benefits realized from a permanent footprint adjustment and cost deflation. The increase in sales volume discussed above improved segment operating profit by \$6 million. Lower selling prices decreased segment operating profit in 2017 by \$10 million. The favorable effects of foreign currency exchange rates increased segment operating profit by \$5 million in 2017.

Asia Pacific: Segment operating profit in Asia Pacific in 2017 was \$65 million compared with \$77 million in 2016, a decrease of \$12 million, or 16%. Despite cost containment efforts, cost inflation, higher supply chain costs and higher costs related to asset improvement projects in the region increased operating costs and decreased segment operating profit by \$30 million in 2017. Costs associated with these asset improvement projects are planned to continue and will result in lower segment operating profit in the first half of 2018 in the region than the same period in 2017. Also, in 2017, higher selling prices increased segment operating profit by \$12 million and the change in sales volume and mix discussed above increased segment operating profit by \$1 million. In addition, the region recorded \$4 million of gain related to a land sale in 2017. The favorable effects of foreign currency exchange rates increased segment operating profit by \$1 million in 2017.

Interest Expense, net

Net interest expense in 2017 was \$268 million compared with \$272 million in 2016. Net interest expense included \$18 million and \$9 million in 2017 and 2016, respectively, for note repurchase premiums and the write off of finance fees related to debt that was repaid prior to its maturity. Exclusive of these items, net interest expense decreased \$13 million in 2017 primarily due to deleveraging and refinancing actions.

Provision for Income Taxes

The Company's effective tax rate from continuing operations for 2017 was 25.5%, compared with 33.4% for 2016. The Company's effective tax rate for 2017 was lower than 2016 primarily due to the resolution of a tax matter that resulted in approximately \$26 million of tax accruals reversed in 2017.

Excluding the amounts related to items that management considers not representative of ongoing operations, the Company's effective tax rate for 2017 was approximately 21%, compared with approximately 24% for 2016. The rate for 2017 was lower than 2016 due to favorable resolution of certain tax matters during 2017.

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The U.S. Tax Cuts and Jobs Act (the “Act”) was enacted on December 22, 2017. The Act reduces the U.S. federal corporate tax rate from 35% to 21%, requires companies to pay a one-time transition tax on earnings of certain foreign subsidiaries that were previously tax deferred and creates new taxes on certain foreign sourced earnings. See Note 11 to the Consolidated Financial Statements for additional information.

Net Earnings Attributable to Noncontrolling Interests

Net earnings attributable to noncontrolling interests for 2017 was \$22 million compared to \$21 million for 2016.

Earnings from Continuing Operations Attributable to the Company

For 2017, the Company recorded earnings from continuing operations attributable to the Company of \$183 million, or \$1.11 per share (diluted), compared with earnings of \$216 million, or \$1.32 per share (diluted), for 2016. The after tax effects of the items excluded from segment operating profit, the unusual tax items and the additional interest charges increased or decreased earnings in 2017 and 2016 as set forth in the following table (dollars in millions).

Description	Net Earnings Increase (Decrease)	
	2017	2016
Pension settlement charges	\$ (218)	\$ (98)
Restructuring, asset impairment and other charges	(77)	(129)
Note repurchase premiums and write-off of finance fees	(18)	(9)
Gain on China land sale		71
Tax benefit (charge) for certain tax adjustments	29	8
Net benefit (charge) for income tax on items above	27	(1)
Net impact of noncontrolling interests on items above	3	(2)
Total	\$ (254)	\$ (160)

Foreign Currency Exchange Rates

Given the global nature of its operations, the Company is subject to fluctuations in foreign currency exchange rates. As described above, the Company’s reported revenues and segment operating profit in 2017 were increased due to foreign currency effects compared to 2016.

This trend may not continue into 2018. During times of a strengthening U.S. dollar, the reported revenues and segment operating profit of the Company’s international operations will be reduced because the local currencies will translate into fewer U.S. dollars. The Company uses certain derivative instruments to mitigate a portion of the risk associated with changing foreign currency exchange rates.

Items Excluded from Reportable Segment Totals

Retained Corporate Costs and Other

Retained corporate costs and other for 2018 were \$106 million compared with \$104 million for 2017. Planned increases in research and development costs in 2018 were partially offset by lower selling and administrative expenses.

Retained corporate costs and other for 2017 were \$104 million compared with \$98 million for 2016. These costs were higher in 2017 primarily due to lower equity earnings from the Company's joint-venture with Constellation Brands in Mexico. Beginning in the first quarter of 2017, equity earnings from this joint-venture were recorded in the Americas region. In prior years, equity earnings from this joint-venture were recorded in Retained Corporate Costs and Other as it was mostly in construction mode.

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Charge for Asbestos Related Costs

For the year ended December 31, 2018, the Company's comprehensive legal review of its asbestos-related liabilities resulted in a \$125 million charge. This charge was primarily due to factors impacting the increased likelihood of additional losses resulting from changes in the law, procedure, the expansion of judicial resources in certain jurisdictions, renewed attention to dockets of non-mesothelioma cases, and new information obtained about the Company's asbestos-related liability. For the years ended December 31, 2017 and 2016, no adjustments were required for asbestos-related costs.

As part of its future comprehensive annual reviews, the Company will estimate its total asbestos-related liability and such reviews may result in adjustments to the liability accrued at the time of the review. The Company continues to believe that its ultimate asbestos-related liability cannot be estimated with certainty.

See "Critical Accounting Estimates" and Note 13 to the Consolidated Financial Statements for additional information.

Pension Settlement Charges

In the past several years, the Company has settled a portion of its pension obligations through retiree annuity contract purchase transactions, which resulted in settlement charges as noted below. The Company may purchase annuity contracts in the future, which would result in additional settlement charges.

During 2018, the Company recorded charges totaling \$74 million for pension settlements, primarily in the United States and United Kingdom.

During 2017, the Company recorded charges totaling \$218 million for pension settlements in the United States, Canada and United Kingdom.

During 2016, the Company recorded charges totaling \$98 million for pension settlements in the United States.

See Note 10 to the Consolidated Financial Statements for additional information.

Restructuring, Asset Impairment and Other Charges

During 2018, the Company recorded charges totaling \$102 million for restructuring, asset impairment and other charges. These charges reflect \$92 million of plant and furnace closures, primarily in the Americas region, and other charges of \$10 million.

During 2017, the Company recorded charges totaling \$77 million for restructuring, asset impairment and other charges. These charges reflect \$72 million of plant and furnace closures, primarily in the Americas and European regions, and other charges of \$5 million.

During 2016, the Company recorded charges totaling \$129 million for restructuring, asset impairment and other charges. These charges reflect \$98 million of plant and furnace closures, primarily in the Europe and Americas regions. In addition, other charges of \$31 million were recorded during 2016, primarily related to an impairment charge recorded at one of the Company's equity investments.

See Note 9 to the Consolidated Financial Statements for additional information.

Gain on China Land Compensation

During 2016, the Company recorded a gain of \$71 million related to compensation received for land that the Company was required to return to the Chinese government.

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Discontinued Operations

On December 6, 2018, an ad hoc committee for the World Bank's International Centre for Settlement of Investment Disputes ("ICSID") rejected the request by the Bolivarian Republic of Venezuela ("Venezuela") to annul the award issued by an ICSID tribunal in favor of OI European Group B.V. ("OIEG") related to the 2010 expropriation of OIEG's majority interest in two plants in Venezuela (the "Award"). The annulment proceeding with respect to the Award is now concluded.

On July 31, 2017, OIEG sold its right, title and interest in amounts due under the Award to an Ireland-domiciled investment fund. Under the terms of the sale, OIEG received a payment, in cash, at closing equal to \$115 million (the "Cash Payment"). OIEG may also receive additional payments in the future ("Deferred Amounts") calculated based on the total compensation that is received from Venezuela as a result of collection efforts or as settlement of the Award with Venezuela. OIEG's right to receive any Deferred Amounts is subject to the limitations described below.

OIEG's interest in any amounts received in the future from Venezuela in respect of the Award is limited to a percentage of such recovery after taking into account reimbursement of the Cash Payment to the purchaser and reimbursement of legal fees and expenses incurred by the Company and the purchaser. OIEG's percentage of such recovery will also be reduced over time. Because the Award has yet to be satisfied and the ability to successfully enforce the Award in countries that are party to the ICSID Convention is subject to significant challenges, the Company is unable to reasonably predict the amount of recoveries from the Award, if any, to which the Company may be entitled in the future. Any future amounts that the Company may receive from the Award are highly speculative and the timing of any such future payments, if any, is highly uncertain. As such, there can be no assurance that the Company will receive any future payments under the Award beyond the Cash Payment.

A separate arbitration involving other subsidiaries of the Company was initiated in 2012 to obtain compensation primarily for third-party minority shareholders' lost interests in the two expropriated plants. However, on November 13, 2017, ICSID issued an award that dismissed this arbitration on jurisdiction grounds. In March 2018, the two subsidiaries of the Company submitted to ICSID an application to annul the November 13, 2017 award; they have since submitted a pleading seeking annulment.

As a result of the favorable ruling by an ICSID ad hoc committee rejecting Venezuela's request to annul the Award, and thereby concluding those annulment proceedings, the Company has recognized a \$115 million gain from discontinued operations in 2018. The gain from discontinued operations of \$113 million, and the losses from discontinued operations of \$3 million and \$7 million for the years ended December 31, 2018, 2017 and 2016, respectively, reflect the gain in 2018 and the ongoing costs for the Venezuelan expropriation in all three years.

Capital Resources and Liquidity

As of December 31, 2018, the Company had cash and total debt of \$512 million and \$5.3 billion, respectively, compared to \$492 million and \$5.3 billion, respectively, as of December 31, 2017. A significant portion of the cash was held in mature, liquid markets where the Company has operations, such as the U.S., Europe and Australia, and is readily available to fund global liquidity requirements. The amount of cash held in non U.S. locations as of December 31, 2018 was \$481 million.

Current and Long Term Debt

On June 27, 2018, certain of the Company's subsidiaries entered into a new Senior Secured Credit Facility (the "Agreement"), which amended and restated the previous credit agreement (the "Previous Agreement"). The proceeds from the Agreement were used to repay all outstanding amounts under the Previous Agreement. The Company

recorded \$11 million of additional interest charges for the write-off of unamortized fees during 2018.

The Agreement provides for up to \$1.91 billion of borrowings pursuant to term loans and revolving credit facilities. The term loans mature, and the revolving credit facilities terminate, in June 2023. At December 31, 2018, the Agreement includes a \$300 million revolving credit facility, a \$700 million multicurrency revolving

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credit facility, and a \$910 million term loan A facility (\$897 million net of debt issuance costs). At December 31, 2018, the Company had unused credit of \$988 million available under the Agreement. The weighted average interest rate on borrowings outstanding under the Agreement at December 31, 2018 was 3.97%.

The Agreement contains various covenants that restrict, among other things and subject to certain exceptions, the ability of the Company to incur certain indebtedness and liens, make certain investments, become liable under contingent obligations in certain defined instances only, make restricted payments, make certain asset sales within guidelines and limits, engage in certain affiliate transactions, participate in sale and leaseback financing arrangements, alter its fundamental business, and amend certain subordinated debt obligations.

The Agreement also contains one financial maintenance covenant, a Total Leverage Ratio (the “Leverage Ratio”), that requires the Company not to exceed a ratio of 4.5x calculated by dividing consolidated total debt, less cash and cash equivalents, by Consolidated EBITDA, as defined in the Agreement. The maximum Leverage Ratio is subject to an increase of 0.5x for (i) any fiscal quarter during which certain qualifying acquisitions (as specified in the Agreement) are consummated and (ii) the following three fiscal quarters. The Leverage Ratio could restrict the ability of the Company to undertake additional financing or acquisitions to the extent that such financing or acquisitions would cause the Leverage Ratio to exceed the specified maximum.

Failure to comply with these covenants and other customary restrictions could result in an event of default under the Agreement. In such an event, the Company could not request borrowings under the revolving facilities, and all amounts outstanding under the Agreement, together with accrued interest, could then be declared immediately due and payable. Upon the occurrence and for the duration of a payment event of default, an additional default interest rate equal to 2.0% per annum will apply to all overdue obligations under the Agreement. If an event of default occurs under the Agreement and the lenders cause all of the outstanding debt obligations under the Agreement to become due and payable, this would result in a default under a number of other outstanding debt securities and could lead to an acceleration of obligations related to these debt securities. As of December 31, 2018, the Company was in compliance with all covenants and restrictions in the Agreement. In addition, the Company believes that it will remain in compliance and that its ability to borrow funds under the Agreement will not be adversely affected by the covenants and restrictions.

The Leverage Ratio also determines pricing under the Agreement. The interest rate on borrowings under the Agreement is, at the Company’s option, the Base Rate or the Eurocurrency Rate, as defined in the Agreement, plus an applicable margin. The applicable margin is linked to the Leverage Ratio. The margins range from 1.00% to 1.50% for Eurocurrency Rate loans and from 0.00% to 0.50% for Base Rate Loans. In addition, a commitment fee is payable on the unused revolving credit facility commitments ranging from 0.20% to 0.30% per annum linked to the Leverage Ratio.

Obligations under the Agreement are secured by substantially all of the assets, excluding real estate and certain other excluded assets, of certain of the Company’s domestic subsidiaries and certain foreign subsidiaries. Such obligations are also secured by a pledge of intercompany debt and equity investments in certain of the Company’s domestic subsidiaries and, in the case of foreign obligations, of stock of certain foreign subsidiaries. All obligations under the Agreement are guaranteed by certain domestic subsidiaries of the Company, and certain foreign obligations under the Agreement are guaranteed by certain foreign subsidiaries of the Company.

In March 2017, the Company expanded its borrowings under the Senior Notes due 2024 by issuing €225 million of additional notes that bear interest at 3.125% and are due November 15, 2024. The notes were issued via a private placement and are guaranteed by certain of the Company’s domestic subsidiaries. The net proceeds, after deducting debt issuance costs, totaled approximately \$237 million and were used to repay a portion of the Company’s revolving credit facility.

During March 2017, the Company purchased in a tender offer approximately \$228 million aggregate principal amount of its 7.80% Senior Debentures due in 2018. In November 2017, the remaining \$22 million of the 7.80% Senior Debentures were repurchased by the Company, the indenture relating thereto was discharged, and all collateral and guarantees thereunder were released. The Company recorded \$18 million of additional interest charges for note repurchase premiums and the write-off of unamortized finance fees related to these actions.

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During December 2017, the Company issued senior notes with a face value of \$310 million that bear interest at 4.00% and are due March 15, 2023. The notes were issued via a private placement and are guaranteed by certain of the Company's domestic subsidiaries. The net proceeds, after deducting debt issuance costs, totaled approximately \$305 million and were used to repay a portion of the term loan A facility under the Previous Agreement.

In the third quarter of 2018, the Company terminated a €185 million European accounts receivable securitization program.

In order to maintain a capital structure containing appropriate amounts of fixed and floating-rate debt, the Company has entered into a series of interest rate swap agreements. These interest rate swap agreements were accounted for as either fair value hedges or cash flow hedges (See Note 8 to Consolidated Financial Statements for more information).

The Company assesses its capital raising and refinancing needs on an ongoing basis and may enter into additional credit facilities and seek to issue equity and/or debt securities in the domestic and international capital markets if market conditions are favorable. Also, depending on market conditions, the Company may elect to repurchase portions of its debt securities in the open market.

The carrying amounts reported for certain long-term debt obligations subject to frequently redetermined interest rates, approximate fair value. Fair values for the Company's significant fixed rate debt obligations are based on published market quotations, and are classified as Level 1 in the fair value hierarchy.

Cash Flows

Operating activities: Cash provided by continuing operating activities was \$793 million for 2018 compared to \$724 million for 2017. The increase in cash provided by continuing operating activities in 2018 was primarily due to a year-over-year decrease in working capital of \$15 million compared to a year-over-year increase of \$89 million in 2017. In 2018, working capital was affected by higher accounts payable and inventory balances and lower trade receivables balances compared to year end 2017. In 2018, the Company has experienced higher sales levels in Europe and Brazil and lower sales levels in the U.S. compared to the prior year. This change in the sales mix has impacted trade receivables as longer payment terms are more common outside the U.S. Also, the Company factored approximately \$145 million more trade receivables at year end 2018 compared to 2017. Together, the net impact of more factoring and a higher mix of sales outside the U.S. have had a favorable impact on the Company's operating cash flows in 2018.

Also, operating cash flows have been favorably impacted in 2018 as payments for restructuring activities were \$30 million lower than in the prior year due to the timing of restructuring actions undertaken. Asbestos-related payments were approximately \$105 million in 2018, or \$5 million lower than in 2017. However, due to its de-risking and accelerated claim disposition strategy, the Company expects its 2019 asbestos-related payments to increase to approximately \$160 million. The Company may continue to experience year-over-year variability with regard to the annual quantity of asbestos-related claims that it is presented with, disposed and paid. See Note 13 to the Consolidated Financial Statements for additional information. In addition, the Company experienced a \$44 million year-over-year increase in cash utilized for other operating items, which included the impact of higher spending on non-current assets and lower charges for the write-off of deferred financing fees.

Investing activities: Cash utilized in continuing investing activities was \$698 million for 2018 compared to \$466 million for 2017. Capital spending for property, plant and equipment during 2018 was \$536 million compared with \$441 million in the prior year, reflecting the payment in 2018 of a higher level of vendor invoices accrued at the end of 2017, as well as a higher level of project activity in the Asia Pacific region.

Acquisition activities were \$175 million and \$39 million in 2018 and 2017, respectively. In 2018, the Company paid approximately \$119 million for a nearly 50 percent interest in Empresas Comegua S.A., which is the leading manufacturer of glass containers for the Central American and Caribbean markets. In addition, in both 2018 and 2017, the Company made contributions to the Company's joint venture with Constellation Brands in Nava, Mexico. In October 2017, the Company signed an agreement to expand its joint venture with Constellation. To meet rising demand from Constellation's adjacent brewery, the newly-expanded relationship

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provides for the addition of a fifth furnace, which is expected to be operational by the end of 2019. This capacity expansion will be financed by equal contributions from both partners with the Company's contribution expected to be approximately \$30 million in 2019. The term of the joint venture agreement was also expanded for ten additional years, to 2034.

Also, in 2017, a subsidiary of the Company received \$115 million from selling its right, title and interest in amounts due under a prior arbitration award against Venezuela related to a discontinued operation. See Note 20 to the Consolidated Financial Statements for additional information.

Financing activities: Cash utilized in financing activities was \$53 million for 2018 compared to \$392 million of cash utilized by financing activities for 2017. Finance activities in 2018 included additions to long-term debt of \$2,511 million and repayments of long-term debt of \$2,353 million, both driven by the refinancing of the Agreement in 2018. Financing activities in 2017 included additions to long-term debt of \$1,458 million, which included the issuances of €225 million and \$310 million of senior notes. Financing activities in 2017 also included the repayment of long-term debt of \$1,764 million, which included the repayment of floating-rate debt in the Company's Senior Secured Credit Facility and the repurchase of the 2018 Senior Debentures. Borrowings under short-term loans decreased by \$18 million in 2018. The Company paid approximately \$13 million in finance fees in 2018 compared to \$28 million in note repurchase premiums and finance fees in 2017. The Company paid \$22 million and \$17 million in distributions to noncontrolling interests in 2018 and 2017, respectively.

In January 2018, the Board of Directors authorized a \$400 million share repurchase program and in November 2018, the board authorized an increase to the program, resulting in approximately \$550 million in remaining repurchase authority as of December 31, 2018. In 2018, the Company repurchased \$163 million in shares of the Company's stock and expects to repurchase approximately \$200 million in shares in 2019. In addition, the Company's Board of Directors declared a dividend of \$0.05 per share, or approximately \$8 million, which will be paid on February 12, 2019, to shareholders of record on the close of business on January 22, 2019. The Board anticipates declaring a dividend in future quarters on a regular basis; however, future declarations of dividends are subject to Board approval and may be adjusted based on the Company's results of operations, financial position and cash flow, or as business needs or market conditions change.

The Company anticipates that cash flows from its operations and from utilization of credit available under the Agreement will be sufficient to fund its operating and seasonal working capital needs, debt service and other obligations on a short term (twelve months) and long term basis. Based on the Company's expectations regarding future payments for lawsuits and claims and also based on the Company's expected operating cash flow, the Company believes that the payment of any deferred amounts of previously settled or otherwise determined lawsuits and claims, and the resolution of presently pending and anticipated future lawsuits and claims associated with asbestos, will not have a material adverse effect upon the Company's liquidity on a short term or long term basis.

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Contractual Obligations and Off Balance Sheet Arrangements

The following information summarizes the Company's significant contractual cash obligations at December 31, 2018 (dollars in millions).

	Payments due by period				
	Total	Less than one year	1 - 3 years	3 - 5 years	More than 5 years
Contractual cash obligations:					
Long-term debt	\$ 5,169	\$ 26	\$ 1,436	\$ 2,288	\$ 1,419
Capital lease obligations	45	7	13	10	15
Operating leases	252	67	90	62	33
Interest(1)	881	230	379	202	70
Purchase obligations(2)	2,031	586	707	350	388
Pension benefit plan contributions(3)	36	36			
Postretirement benefit plan benefit payments(1)	92	10	19	19	44
Equity affiliate investment obligation(4)	30	30			
Total contractual cash obligations	\$ 8,536	\$ 992	\$ 2,644	\$ 2,931	\$ 1,969

	Amount of commitment expiration per period				
	Total	Less than one year	1 - 3 years	3 - 5 years	More than 5 years
Other commercial commitments:					
Standby letters of credit	\$ 45	\$ 45	\$ —	\$ —	\$ —
Total commercial commitments	\$ 45	\$ 45	\$ —	\$ —	\$ —

(1) Amounts based on rates and assumptions at December 31, 2018.

(2) The Company's purchase obligations consist principally of contracted amounts for energy and molds. In cases where variable prices are involved, current market prices have been used. The amount above does not include ordinary course of business purchase orders because the majority of such purchase orders may be canceled. The Company does not believe such purchase orders will adversely affect its liquidity position.

(3) In order to maintain minimum funding requirements, the Company is required to make contributions to its defined benefit pension plans of approximately \$36 million in 2019. Future funding requirements for the Company's pension plans will depend largely on actual asset returns and future actuarial assumptions, such as discount rates, and can vary significantly.

(4) The Company entered into a joint venture agreement with Constellation Brands to operate a glass container plant in Nava, Mexico. To help meet current and rising demand from Constellation's adjacent brewery, the joint venture plans to expand the plant over the next year. The Company expects to contribute approximately \$30 million for the joint venture's expansion plans in 2019.

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The Company is unable to make a reasonably reliable estimate as to when cash settlement with taxing authorities may occur for its unrecognized tax benefits. Therefore, the liability for unrecognized tax benefits is not included in the table above. See Note 11 to the Consolidated Financial Statements for additional information.

Critical Accounting Estimates

The Company's analysis and discussion of its financial condition and results of operations are based upon its consolidated financial statements that have been prepared in accordance with accounting principles generally accepted in the United States ("U.S. GAAP"). The preparation of financial statements in conformity with U.S. GAAP requires management to make estimates and assumptions that affect the reported amounts of assets, liabilities, revenues and expenses, and the disclosure of contingent assets and liabilities. The Company evaluates these estimates and assumptions on an ongoing basis. Estimates and assumptions are based on historical and other factors believed to be reasonable under the circumstances at the time the financial statements are issued. The results of these estimates may form the basis of the carrying value of certain assets and liabilities and may not be readily apparent from other sources. Actual results, under conditions and circumstances different from those assumed, may differ from estimates.

The impact of, and any associated risks related to, estimates and assumptions are discussed within Management's Discussion and Analysis of Financial Condition and Results of Operations, as well as in the Notes to the Consolidated Financial Statements, if applicable, where estimates and assumptions affect the Company's reported and expected financial results.

The Company believes that accounting for the impairment of long lived assets, pension benefit plans, contingencies and litigation related to its asbestos-related liability, and income taxes involves the more significant judgments and estimates used in the preparation of its consolidated financial statements.

Impairment of Long Lived Assets

Property, Plant and Equipment—The Company tests for impairment of PP&E whenever events or changes in circumstances indicate that the carrying amount of the assets may not be recoverable. PP&E held for use in the Company's business is grouped for impairment testing at the lowest level for which cash flows can reasonably be identified, typically a segment or a component of a segment. The Company evaluates the recoverability of PP&E based on undiscounted projected cash flows, excluding interest and taxes. If an asset group is considered impaired, the impairment loss to be recognized is measured as the amount by which the asset group's carrying amount exceeds its fair value. PP&E held for sale is reported at the lower of carrying amount or fair value less cost to sell.

Impairment testing requires estimation of the fair value of PP&E based on the discounted value of projected future cash flows generated by the asset group. The assumptions underlying cash flow projections represent management's best estimates at the time of the impairment review. Factors that management must estimate include, among other things: industry and market conditions, sales volume and prices, production costs and inflation. Changes in key assumptions or actual conditions which differ from estimates could result in an impairment charge. The Company uses reasonable and supportable assumptions when performing impairment reviews and cannot predict the occurrence of future events and circumstances that could result in impairment charges.

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Goodwill –Goodwill is tested for impairment annually as of October 1 (or more frequently if impairment indicators arise). Step 1 compares the business enterprise value (“BEV”) of each reporting unit with its carrying value. The BEV is computed based on estimated future cash flows, discounted at the weighted average cost of capital of a hypothetical third-party buyer. If the BEV is less than the carrying value for any reporting unit, then goodwill impairment must be calculated. Goodwill impairment will be calculated by comparing the reporting unit’s fair value of goodwill with the carrying amount of goodwill. Any excess of the carrying value of the goodwill over the fair value will be recorded as an impairment loss. The calculations of the BEV in Step 1 are based on significant unobservable inputs, such as projected future cash flows of the reporting units, discount rates, and terminal business value, and are classified as Level 3 in the fair value hierarchy. The Company’s projected future cash flows incorporates management’s best estimates of the expected future results including, but not limited to, price trends, customer demand, material costs, asset replacement costs and any other known factors.

Goodwill is tested for impairment at the reporting unit level, which is the operating segment or one level below the operating segment, also known as a component. Two or more components of an operating segment shall be aggregated into a single reporting unit if the components have similar economic characteristics, based on an assessment of various factors. Despite the consolidation of the Americas segment effective January 1, 2018, the Company has not changed the reporting units within this segment or the goodwill allocated to its reporting units. The Americas segment is comprised of two reporting units – North America and Latin America. The Company aggregated the components of the Latin America reporting segment into a single reporting unit. The Company has determined that the Europe segment is also a reporting unit. The Company aggregated the components of the Asia Pacific segment, which has no goodwill, into a single reporting unit equal to the reportable segment. The aggregation of the components of these reporting units or segments were based on their economic similarity as determined by the Company using a number of quantitative and qualitative factors, including gross margins, the manner in which the Company operates the business, the consistent nature of products, services, production processes, customers and methods of distribution, as well as the level of shared resources and assets between the components.

During the fourth quarter of 2018, the Company completed its annual impairment testing and determined that no impairment of goodwill existed. Goodwill at December 31, 2018 totaled approximately \$2.5 billion, representing 26% of total assets. The Company has four reporting units of which three of the reporting units have goodwill and include approximately \$874 million of recorded goodwill to the Company’s Europe reporting unit, approximately \$1.04 billion of recorded goodwill to the Company’s North America reporting unit and approximately \$598 million of recorded goodwill to the Company’s Latin America reporting unit. The testing performed as of October 1, 2018, indicated an excess of BEV over book value for North America, Europe and Latin America. North America exceeded its carrying values by approximately 12% and is determined to be the reporting unit having the greatest risk of future impairment if actual results fall modestly short of expectations. If the Company’s projected future cash flows were substantially lower, or if the assumed weighted average cost of capital was substantially higher, the testing performed as of October 1, 2018, may have indicated an impairment of one or more of these reporting units and, as a result, the related goodwill may also have been impaired. Any impairment charges that the Company may take in the future could be material to its consolidated results of operations and financial condition. However, less significant changes in projected future cash flows or the assumed weighted average cost of capital would not have indicated an impairment. For example, if projected future cash flows had been decreased by 5%, or if the weighted average cost of capital had been increased by 5%, or both, the resulting lower BEV’s would still have exceeded the book value of each of these reporting units.

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During the time subsequent to the annual evaluation, and at December 31, 2018, the Company considered whether any events and/or changes in circumstances had resulted in the likelihood that the goodwill of any of its reporting units may have been impaired and has determined that no such events have occurred. The Company will monitor conditions throughout 2019 that might significantly affect the projections and variables used in the impairment test to determine if a review prior to October 1 may be appropriate. If the results of impairment testing confirm that a write down of goodwill is necessary, then the Company will record a charge in the fourth quarter of 2019, or earlier if appropriate. In the event the Company would be required to record a significant write down of goodwill, the charge would have a material adverse effect on reported results of operations and net worth.

Other Long-Lived Assets - Intangibles – Other long-lived assets consist primarily of purchased customer relationships intangibles and are amortized using the accelerated amortization method over their estimated useful lives. The Company reviews these assets for impairment whenever events or changes in circumstances indicate that the carrying amount of the asset may not be recoverable. In the event that a decline in fair value of an asset occurs, and the decline in value is considered to be other than temporary, an impairment loss is recognized. The test for impairment would require the Company to make estimates about fair value, which may be determined based on discounted cash flows, third party appraisals or other methods that provide appropriate estimates of value. The Company continually monitors the carrying value of their assets.

Pension Benefit Plans

Significant Estimates—The determination of pension obligations and the related pension expense or credits to operations involves significant estimates. The most significant estimates are the discount rate used to calculate the actuarial present value of benefit obligations and the expected long term rate of return on plan assets. The Company uses discount rates based on yields of high quality fixed rate debt securities at the end of the year. At December 31, 2018, the weighted average discount rate was 3.69% and 2.76% for U.S. and non U.S. plans, respectively. The Company uses an expected long term rate of return on assets that is based on both past performance of the various plans' assets and estimated future performance of the assets. Due to the nature of the plans' assets and the volatility of debt and equity markets, actual returns may vary significantly from year to year. The Company refers to average historical returns over longer periods (up to 10 years) in determining its expected rates of return because short term fluctuations in market values do not reflect the rates of return the Company expects to achieve based upon its long term investing strategy. For purposes of determining pension charges and credits in 2018, the Company's estimated weighted average expected long term rate of return on plan assets is 7.25% for U.S. plans and 5.52% for non U.S. plans compared to 7.50% for U.S. plans and 6.32% for non U.S. plans in 2017. The Company recorded pension expense from continuing operations (exclusive of settlement charges) of \$26 million, \$21 million, and \$23 million for the U.S. plans in 2018, 2017, and 2016, respectively, and \$6 million, \$8 million, and \$8 million for the non U.S. plans in 2018, 2017, and 2016, respectively. Depending on currency translation rates, the Company expects to record approximately \$32 million of total pension expense for the full year of 2019. The 2019 pension expense will reflect a 7.25% and 5.50% expected long-term rate of return for the U.S. assets and non-U.S. assets, respectively.

Future effects on reported results of operations depend on economic conditions and investment performance. For example, a one half percentage point change in the actuarial assumption regarding discount rates used to calculate plan liabilities or in the expected rate of return on plan assets would result in a change of approximately \$5 million and \$10 million, respectively, in the pretax pension expense for the full year 2019.

Recognition of Funded Status—The Company recognizes the funded status of each pension benefit plan on the balance sheet. The funded status of each plan is measured as the difference between the fair value of plan assets and actuarially calculated benefit obligations as of the balance sheet date. Actuarial gains and losses are accumulated in Other Comprehensive Income and the portion of each plan that exceeds 10% of the greater of that plan's assets or projected benefit obligation is amortized to income on a straight line basis over the average remaining service period of

employees still accruing benefits or the expected life of participants not accruing benefits if all, or almost all, of the plan's participants are no longer accruing benefits.

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Contingencies and Litigation Related to Asbestos Liability

For many years, the Company has conducted an annual comprehensive legal review of its asbestos-related liabilities and costs in connection with finalizing and reporting its annual results of operations, unless significant changes in trends or new developments warrant an earlier review. As part of its current annual comprehensive legal review, the Company provides historical claims filing data to a third party consultant with expertise in predicting future claims filings based on actuarial inputs such as disease incidence and mortality. The Company uses these estimates of total future claims, along with its legal judgment regarding an estimation of future disposition costs and related legal costs, as inputs to develop a reasonable estimate of probable liability. If the results of the annual comprehensive legal review indicate that the existing amount of the accrued liability is lower (higher) than its reasonably estimable asbestos-related costs, then the Company will record an appropriate charge (credit) to the Company's results of operations to increase (decrease) the accrued liability.

The significant assumptions underlying the material components of the Company's accrual are described in the Risk Factors section and in Note 13 to the Consolidated Financial Statements. Changes in these significant assumptions have the potential to impact the Company's asbestos-related liability.

In addition, if trends relating to the Company's actual Asbestos Claims materially differ, up or down, from the amounts predicted, the total number of future estimated Asbestos Claims could change significantly. Similarly, if trends relating to the actual per-claim indemnity costs differ materially, up or down, from the previously estimated amount, the total cost of the estimate future Asbestos Claims could change significantly. The same may also be true with respect to legal costs. Significant changes in the future total number of predicted Asbestos Claims, or their costs, could impact the total estimated asbestos-related liability, which in turn could result in a material charge or credit to the Company's results of operations.

The Company believes it is reasonably possible that it will incur a loss for its asbestos-related liabilities in excess of the amount currently recognized, which is \$602 million as of December 31, 2018. The Company estimates that reasonably possible losses could result in asbestos-related liabilities up to \$722 million. This estimate of additional reasonably possible loss reflects a qualitative legal judgment regarding the nature of contingencies that could impact future Asbestos Claims and legal costs, which include, but are not limited to, successful attempts by plaintiffs to challenge existing legal barriers to liability, enact plaintiff-oriented liability or damage-related legislation, establish new theories of liability, or revive long-dormant inventories of non-mesothelioma cases. However, it is also possible that the ultimate amount of asbestos-related liabilities could be above this estimate.

Income Taxes

The Company accounts for income taxes as required by general accounting principles under which management judgment is required in determining income tax expense/(benefit) and the related balance sheet amounts. This judgment includes estimating and analyzing historical and projected future operating results, the reversal of taxable and tax deductible temporary differences, tax planning strategies, and the ultimate outcome of uncertain income tax positions. Actual income taxes paid may vary from estimates, depending upon changes in income tax laws, actual results of operations, and the effective settlement of uncertain tax positions. The Company has received tax assessments in excess of established reserves for uncertain tax positions. The Company is contesting these tax assessments, and will continue to do so, including pursuing all available remedies such as appeals and litigation, if necessary.

The Company believes that adequate provisions for all income tax uncertainties have been made. However, if tax assessments are settled against the Company at amounts in excess of established reserves, it could have a material impact to the Company's results of operations, financial position or cash flows. Changes in the estimates and

assumptions used for calculating income tax expense and potential differences in actual results from estimates could have a material impact on the Company's results of operations and financial condition.

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Deferred tax assets and liabilities are recognized for the tax effects of temporary differences between the financial reporting and tax bases of assets and liabilities measured using enacted tax rates and for tax attributes such as operating losses and tax credit carryforwards. Deferred tax assets and liabilities are determined separately for each tax jurisdiction on a separate or on a consolidated tax filing basis, as applicable, in which the Company conducts its operations or otherwise incurs taxable income or losses. A valuation allowance is recorded when it is more likely than not that some portion or all of the deferred tax assets will not be realized. The realization of deferred tax assets depends on the ability to generate sufficient taxable income of the appropriate character within the carryback or carryforward periods provided for in the tax law for each applicable tax jurisdiction. The Company considers the following possible sources of taxable income when assessing the realization of deferred tax assets:

- taxable income in prior carryback years;
- future reversals of existing taxable temporary differences;
- future taxable income exclusive of reversing temporary differences and carryforwards; and
- prudent and feasible tax planning strategies that the Company would be willing to undertake to prevent a deferred tax asset from otherwise expiring.

The assessment regarding whether a valuation allowance is required or whether a change in judgment regarding the valuation allowance has occurred also considers all available positive and negative evidence, including but not limited to:

- nature, frequency, and severity of cumulative losses in recent years;
- duration of statutory carryforward and carryback periods;
- statutory limitations against utilization of tax attribute carryforwards against taxable income;
- historical experience with tax attributes expiring unused; and
- near and medium term financial outlook.

The weight given to the positive and negative evidence is commensurate with the extent to which the evidence may be objectively verified. Accordingly, it is generally difficult to conclude a valuation allowance is not required when there is significant objective and verifiable negative evidence, such as cumulative losses in recent years. The Company uses the actual results for the last two years and current year results as the primary measure of cumulative losses in recent years.

The evaluation of deferred tax assets requires judgment in assessing the likely future tax consequences of events recognized in the financial statements or tax returns and future profitability. The recognition of deferred tax assets represents the Company's best estimate of those future events. Changes in the current estimates, due to unanticipated events or otherwise, could have a material effect on the Company's results of operations and financial condition.

In certain tax jurisdictions, the Company's analysis indicates that it has cumulative losses in recent years. This is considered significant negative evidence which is objective and verifiable and, therefore, difficult to overcome. However, the cumulative loss position is not solely determinative and, accordingly, the Company considers all other available positive and negative evidence in its analysis. Based on its analysis, the Company has recorded a valuation allowance for the portion of deferred tax assets where based on the weight of available evidence it is unlikely to realize those deferred tax assets.

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Based on the evidence available including a lack of sustainable earnings, the Company in its judgment previously recorded a valuation allowance against substantially all of its net deferred tax assets in the United States. If a change in judgment regarding this valuation allowance were to occur in the future, the Company will record a potentially material deferred tax benefit, which could result in a favorable impact on the effective tax rate in that period. The utilization of tax attributes to offset taxable income reduces the amount of deferred tax assets subject to a valuation allowance.

In 2017, the Company elected to treat Global Intangible Low Taxed Income (“GILTI”), which was effective in 2018 for the Company, as a period cost.

The U.S. Tax Cuts and Jobs Act (the “Act”) was enacted on December 22, 2017. The Act reduces the U.S. federal corporate tax rate from 35% to 21%, requires companies to pay a one-time transition tax on earnings of certain foreign subsidiaries that were previously tax deferred and creates new taxes on certain foreign sourced earnings. Additional guidance is likely to be issued providing further clarification on the application of the Act, and the proposed regulations subsequently issued with respect to the Act. Further, it is reasonable to expect that global taxing authorities will be reviewing current legislation for potential modifications in reaction to the implementation of the Act. This additional guidance, along with the potential for additional global tax legislation changes, could have a material adverse impact on net income and cash flow by impacting significant deductions or income inclusions.

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

Market risks relating to the Company’s operations result primarily from fluctuations in foreign currency exchange rates, changes in interest rates, and changes in commodity prices, principally energy and soda ash. The Company uses certain derivative instruments to mitigate a portion of the risk associated with changing foreign currency exchange rates. The Company also uses certain derivative instruments to mitigate a portion of the risk associated with fluctuating energy prices in its Americas region. These instruments carry varying degrees of counterparty credit risk. To mitigate this risk, the Company has defined a financial counterparty policy that established criteria to select qualified counterparties based on credit ratings and CDC spreads. The policy also limits the exposure with individual counterparties. The Company monitors these exposures quarterly. The Company does not enter into derivative financial instruments for trading purposes.

Foreign Currency Exchange Rate Risk

Earnings of Operations Outside the United States

A substantial portion of the Company’s operations are conducted by subsidiaries outside the U.S. The primary international markets served by the Company’s subsidiaries are in Canada, Australia, China, Latin America (principally Brazil, Colombia, and Mexico), and Europe (principally France, Germany, Italy, the Netherlands, Poland, Spain, and the United Kingdom). In general, revenues earned and costs incurred by the Company’s major international operations are denominated in their respective local currencies. Consequently, the Company’s reported financial results could be affected by factors such as changes in foreign currency exchange rates or highly inflationary economic conditions in the international markets in which the Company’s subsidiaries operate. When the U.S. dollar strengthens against foreign currencies, the reported U.S. dollar value of local currency earnings generally decreases; when the U.S. dollar weakens against foreign currencies, the reported U.S. dollar value of local currency earnings generally increases. For the years ended December 31, 2018, 2017, and 2016, the Company did not have any significant foreign subsidiaries whose functional currency was the U.S. dollar.

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Borrowings Not Denominated in the Functional Currency

Because the Company's subsidiaries operate within their local economic environment, the Company believes it is appropriate to finance those operations with borrowings denominated in the local currency to the extent practicable where debt financing is desirable or necessary. This strategy mitigates the risk of reported losses or gains in the event the foreign currency strengthens or weakens against the U.S. dollar. Considerations which influence the amount of such borrowings include long and short term business plans, tax implications, and the availability of borrowings with acceptable interest rates and terms.

Available excess funds of a subsidiary may be redeployed through intercompany loans to other subsidiaries for debt repayment, capital investment, or other cash requirements. The intercompany loans give rise to foreign currency exchange rate risk, which the Company mitigates through the use of forward exchange contracts that effectively swap the intercompany loan and related interest to the appropriate local currency.

Foreign Exchange Derivative Contracts and not Designated as Hedging Instruments

The Company uses short-term forward exchange or option agreements to purchase foreign currencies at set rates in the future. These agreements are used to limit exposure to fluctuations in foreign currency exchange rates for significant planned purchases of fixed assets or commodities that are denominated in currencies other than the subsidiaries' functional currency. The Company also uses foreign exchange agreements to offset the foreign currency risk for receivables and payables, including intercompany receivables, payables, and loans, not denominated in, or indexed to, their functional currencies. At December 31, 2018 and 2017, the net fair value of such agreements was less than \$1 million and a net asset of \$3 million, respectively.

Cash Flow Hedges of Foreign Exchange Risk

The Company has variable-interest rate borrowings denominated in currencies other than the functional currency of the borrowing subsidiaries. As a result, the Company is exposed to fluctuations in the currency of the borrowing against the subsidiaries' functional currency. The Company uses derivatives to manage these exposures and designates these derivatives as cash flow hedges of foreign exchange risk. For these derivatives designated as cash flow hedges of foreign exchange risk the gain or loss on the derivative is recorded in Accumulated OCI and is subsequently reclassified into earnings in the period for which the hedged forecasted transaction affects earnings. At December 31, 2018 and 2017, the net fair value of such swap contracts was a net asset of \$9 million and a net asset of \$4 million, respectively.

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Interest Rate Risk

The Company's interest expense is most sensitive to changes in the general level of interest rates applicable to the term loans under its Agreement (see Note 12 to the Consolidated Financial Statements for further information). The Company's interest rate risk management objective is to limit the impact of interest rate changes on net income and cash flow, while minimizing interest payments and expense. To achieve this objective, the Company regularly evaluates its mix of fixed and floating rate debt, and, from time to time, may enter into interest rate swap agreements.

The following table provides information about the Company's interest rate sensitivity related to its significant debt obligations, including interest rate swap agreements, at December 31, 2018. The table presents principal cash flows and related weighted average interest rates by expected maturity date.

(Dollars in millions)	2019	2020	2021	2022	2023	Thereafter	Total	Fair Value at 12/31/2018
Long-term debt at variable rate:								
Principal by expected maturity	\$ 18	\$ 250	\$ 34	\$ 32	\$ 518	\$ 825	\$ 1,677	\$ 1,670
Avg. principal outstanding	\$ 1,667	\$ 1,533	\$ 1,391	\$ 1,359	\$ 1,084	\$ 825		
Avg. interest rate	3.05 %	3.01 %	2.97 %	2.95 %	2.69 %	2.29 %		
Long-term debt at fixed rate:								
Principal by expected maturity	\$ 15	\$ 768	\$ 397	\$ 517	\$ 1,231	\$ 609	\$ 3,537	\$ 3,632
Avg. principal outstanding	\$ 3,530	\$ 2,770	\$ 2,375	\$ 1,864	\$ 632	\$ 632		
Avg. interest rate	5.00 %	4.94 %	4.95 %	4.95 %	5.85 %	5.85 %		

The Company believes the near term exposure to interest rate risk of its debt obligations has not changed materially since December 31, 2018.

In addition, the determination of pension obligations and the related pension expense or credits to operations involves significant estimates. Future funding requirements for the Company's pension plans will depend largely on actual asset returns and future actuarial assumptions, such as discount rates, and can vary significantly. The discount rate is a significant estimate that is used to calculate the actuarial present value of benefit obligations and is based on yields of high quality fixed rate debt securities at the end of the year. For example, a one half percentage point change in the actuarial assumption regarding discount rates used to calculate plan liabilities or in the expected rate of return on plan assets would result in a change of approximately \$5 million and \$10 million, respectively, in the pretax pension expense for the full year 2019.

Interest Rate Swap Agreements

The Company's objectives in using interest rate derivatives are to manage its exposure to interest rate movements and to maintain a capital structure containing appropriate amounts of fixed and floating-rate debt. To accomplish this objective, the Company uses interest rate swaps as part of its interest rate risk management strategy. Interest rate swaps designated as cash flow hedges involve the receipt of variable amounts from a counterparty in exchange for the Company making fixed-rate payments. These interest rate swap agreements were used to hedge the variable cash

flows associated with variable-rate debt. At December 31, 2018 and 2017, the net fair value of such swap contracts was a net asset of \$5 million and a net liability of \$4 million, respectively.

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Commodity Price Risk

The Company enters into commodity forward contracts related to forecasted natural gas requirements, the objectives of which are to limit the effects of fluctuations in the future market price paid for natural gas and the related volatility in cash flows. At December 31, 2018 and 2017, the net fair value of such contracts was a net asset of \$1 million and a net liability of \$10 million, respectively.

The Company believes the near term exposure to commodity price risk of its commodity forward contracts was not material at December 31, 2018.

Forward-Looking Statements

This document contains "forward-looking" statements within the meaning of Section 21E of the Securities Exchange Act of 1934, as amended (the "Exchange Act") and Section 27A of the Securities Act of 1933. Forward-looking statements reflect the Company's current expectations and projections about future events at the time, and thus involve uncertainty and risk. The words "believe," "expect," "anticipate," "will," "could," "would," "should," "may," "plan," "estimate," "predict," "potential," "continue," and the negatives of these words and other similar expressions generally identify forward-looking statements. It is possible the Company's future financial performance may differ from expectations due to a variety of factors including, but not limited to the following: (1) foreign currency fluctuations relative to the U.S. dollar, (2) changes in capital availability or cost, including interest rate fluctuations and the ability of the Company to refinance debt at favorable terms, (3) the general political, economic and competitive conditions in markets and countries where the Company has operations, including uncertainties related to economic and social conditions, disruptions in the supply chain, competitive pricing pressures, inflation or deflation, and changes in tax rates and laws, (4) the Company's ability to generate sufficient future cash flows to ensure the Company's goodwill is not impaired, (5) consumer preferences for alternative forms of packaging, (6) cost and availability of raw materials, labor, energy and transportation, (7) the Company's ability to manage its cost structure, including its success in implementing restructuring plans and achieving cost savings, (8) consolidation among competitors and customers, (9) the Company's ability to acquire businesses and expand plants, integrate operations of acquired businesses and achieve expected synergies, (10) unanticipated expenditures with respect to environmental, safety and health laws, (11) unanticipated operational disruptions, including higher capital spending, (12) the Company's ability to further develop its sales, marketing and product development capabilities, (13) the failure of the Company's joint venture partners to meet their obligations or commit additional capital to the joint venture, (14) the Company's ability to prevent and detect cybersecurity threats against its information technology systems and to comply with data privacy regulations, (15) the Company's ability to accurately estimate its total asbestos-related liability or to control the timing and occurrence of events related to outstanding asbestos-related claims, including but not limited to settlements of those claims, (16) changes in U.S. trade policies, (17) the Company's ability to achieve its strategic plan, and the other risk factors discussed in this Annual Report on Form 10-K for the year ended December 31, 2018 and any subsequently filed Quarterly Report on Form 10-Q. It is not possible to foresee or identify all such factors. Any forward-looking statements in this document are based on certain assumptions and analyses made by the Company in light of its experience and perception of historical trends, current conditions, expected future developments, and other factors it believes are appropriate in the circumstances. Forward-looking statements are not a guarantee of future performance and actual results or developments may differ materially from expectations. While the Company continually reviews trends and uncertainties affecting the Company's results of operations and financial condition, the Company does not assume any obligation to update or supplement any particular forward-looking statements contained in this document.

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ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

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REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Board of Directors and Share Owners of Owens Illinois, Inc.

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of Owens-Illinois, Inc. (the Company) as of December 31, 2018 and 2017, the related consolidated statements of results of operations, comprehensive income, share owners' equity and cash flows for each of the three years in the period ended December 31, 2018, and the related notes and financial statement schedule listed in the Index at Item 15 (collectively referred to as the "consolidated financial statements"). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company at December 31, 2018 and 2017, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2018, in conformity with U.S. generally accepted accounting principles.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the Company's internal control over financial reporting as of December 31, 2018, based on criteria established in Internal Control-Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework), and our report dated February 14, 2019 expressed an unqualified opinion thereon.

Basis for Opinion

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

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the 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 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 financial statements. We believe that our audits provide a reasonable basis for our opinion.

/s/ Ernst & Young LLP

We have served as the Company's auditor since 1987.

Toledo, Ohio

February 14, 2019

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Owens-Illinois, Inc.

CONSOLIDATED RESULTS OF OPERATIONS

Dollars in millions, except per share amounts

Years ended December 31,	2018	2017	2016
Net sales	\$ 6,877	\$ 6,869	\$ 6,702
Cost of goods sold	(5,594)	(5,536)	(5,392)
Gross profit	1,283	1,333	1,310
Selling and administrative expense	(483)	(484)	(503)
Research, development and engineering expense	(70)	(60)	(65)
Interest expense, net	(261)	(268)	(272)
Equity earnings	77	77	60
Other expense, net	(269)	(323)	(174)
Earnings from continuing operations before income taxes	277	275	356
Provision for income taxes	(108)	(70)	(119)
Earnings from continuing operations	169	205	237
Gain (loss) from discontinued operations	113	(3)	(7)
Net earnings	282	202	230
Net earnings attributable to noncontrolling interests	(25)	(22)	(21)
Net earnings attributable to the Company	\$ 257	\$ 180	\$ 209
Amounts attributable to the Company:			
Earnings from continuing operations	\$ 144	\$ 183	\$ 216
Gain (loss) from discontinued operations	113	(3)	(7)
Net earnings	\$ 257	\$ 180	\$ 209
Basic earnings per share:			
Earnings from continuing operations	\$ 0.90	\$ 1.12	\$ 1.33
Gain (loss) from discontinued operations	0.71	(0.01)	(0.04)
Net earnings	\$ 1.61	\$ 1.11	\$ 1.29
Diluted earnings per share:			
Earnings from continuing operations	\$ 0.89	\$ 1.11	\$ 1.32
Gain (loss) from discontinued operations	0.70	(0.01)	(0.04)
Net earnings	\$ 1.59	\$ 1.10	\$ 1.28
Dividends declared per common share	\$ 0.05	\$ -	\$ -

See accompanying Notes to the Consolidated Financial Statements.

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Owens-Illinois, Inc.

CONSOLIDATED COMPREHENSIVE INCOME

Dollars in millions

Years ended December 31,	2018	2017	2016
Net earnings	\$ 282	\$ 202	\$ 230
Other comprehensive income (loss):			
Foreign currency translation adjustments	(174)	70	(224)
Pension and other postretirement benefit adjustments, net of tax	30	289	52
Change in fair value of derivative instruments, net of tax	(6)	(8)	13
Other comprehensive income (loss)	(150)	351	(159)
Total comprehensive income	132	553	71
Comprehensive income attributable to noncontrolling interests	(17)	(27)	(17)
Comprehensive income attributable to the Company	\$ 115	\$ 526	\$ 54

See accompanying Notes to the Consolidated Financial Statements.

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Owens-Illinois, Inc.

CONSOLIDATED BALANCE SHEETS

Dollars in millions

December 31,	2018	2017
Assets		
Current assets:		
Cash and cash equivalents	\$ 512	\$ 492
Trade receivables, net of allowances of \$35 million and \$34 million at December 31, 2018 and 2017, respectively	549	663
Inventories	1,018	1,036
Prepaid expenses and other current assets	278	229
Total current assets	2,357	2,420
Other assets:		
Equity investments	698	525
Pension assets	44	49
Other assets	602	602
Intangibles	400	439
Goodwill	2,513	2,590
Total other assets	4,257	4,205
Property, plant and equipment:		
Land, at cost	244	255
Buildings and equipment, at cost:		
Buildings and building equipment	1,141	1,180
Factory machinery and equipment	5,193	5,015
Transportation, office and miscellaneous equipment	102	96
Construction in progress	344	303
	7,024	6,849
Less accumulated depreciation	3,939	3,718
Net property, plant and equipment	3,085	3,131
Total assets	\$ 9,699	\$ 9,756

See accompanying Notes to the Consolidated Financial Statements.

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Owens-Illinois, Inc.

CONSOLIDATED BALANCE SHEETS (Continued)

Dollars in millions, except per share amounts

December 31,	2018	2017
Liabilities and Share Owners' Equity		
Current liabilities:		
Accounts payable	\$ 1,321	\$ 1,324
Salaries and wages	157	166
U.S. and foreign income taxes	34	35
Current portion of asbestos-related liabilities	160	100
Other accrued liabilities	375	378
Other liabilities - discontinued operations		115
Short-term loans	127	151
Long-term debt due within one year	33	11
Total current liabilities	2,207	2,280
Long-term debt	5,181	5,121
Deferred taxes	96	99
Pension benefits	534	471
Nonpension postretirement benefits	145	167
Other liabilities	194	209
Asbestos-related liabilities	442	482
Share owners' equity:		
Share owners' equity of the Company:		
Common stock, par value \$.01 per share, 250,000,000 shares authorized, 186,575,999 and 185,727,663 shares issued (including treasury shares), respectively	2	2
Capital in excess of par value	3,124	3,099
Treasury stock, at cost, 30,917,603 and 22,648,606 shares, respectively	(705)	(551)
Retained earnings	333	84
Accumulated other comprehensive loss	(1,968)	(1,826)
Total share owners' equity of the Company	786	808
Noncontrolling interests	114	119
Total share owners' equity	900	927
Total liabilities and share owners' equity	\$ 9,699	\$ 9,756

See accompanying Notes to the Consolidated Financial Statements.

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Owens-Illinois, Inc.

CONSOLIDATED SHARE OWNERS' EQUITY

Dollars in millions

Share Owners' Equity of the Company

	Common Stock	Capital in Excess of Par Value	Treasury Stock	Retained Earnings (accumulated deficit)	Accumulated Other Comprehensive Loss	Non- Controlling Interests	Total Share Owners' Equity
Balance on January 1, 2016	\$ 2	3,064	(573)	(305)	(2,017)	108	279
Issuance of common stock (0.5 million shares)		5					5
Reissuance of common stock (0.5 million shares)			13				13
Stock compensation (0.2 million shares)		11					11
Net earnings				209		21	230
Other comprehensive loss					(155)	(4)	(159)
Distributions to noncontrolling interests						(16)	(16)
Balance on December 31, 2016	2	3,080	(560)	(96)	(2,172)	109	363
Issuance of common stock (0.1 million shares)		1					1
Reissuance of common stock (0.4 million shares)			9				9
Stock compensation (0.3 million shares)		18					18
Net earnings				180		22	202
Other comprehensive income					346	5	351
Distributions to noncontrolling interests						(17)	(17)
Balance on December 31, 2017	2	3,099	(551)	84	(1,826)	119	927
Issuance of common stock (0.03 million shares)							—
Reissuance of common stock (0.4 million shares)		(2)	9				7
Treasury shares purchased (8.6 million shares)			(163)				(163)
Stock compensation (0.8 million shares)		27					27

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Dividends declared (a)				(8)			(8)
Net earnings				257		25	282
Other comprehensive loss					(142)	(8)	(150)
Distributions to noncontrolling interests						(22)	(22)
Balance on December 31, 2018	\$ 2	\$ 3,124	\$ (705)	\$ 333	\$ (1,968)	\$ 114	\$ 900

(a) The Company's Board of Directors declared a quarterly cash dividend of five cents per share of common stock in the fourth quarter of 2018.

See accompanying Notes to the Consolidated Financial Statements.

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Owens-Illinois, Inc.

CONSOLIDATED CASH FLOWS

Dollars in millions

Years ended December 31,	2018	2017	2016
Operating activities:			
Net earnings	\$ 282	\$ 202	\$ 230
Loss (gain) from discontinued operations	(113)	3	7
Non-cash charges (credits):			
Depreciation	388	387	375
Amortization of intangibles and other deferred items	106	101	103
Amortization of finance fees and debt discount	13	13	13
Deferred tax provision (benefit)	(9)	(12)	(4)
Pension expense	32	29	31
Restructuring, asset impairment and related charges	92	72	98
Pension settlement charges	74	218	98
Asbestos-related costs	125		
Impairment of equity investment			25
Gain on China land sale			(71)
Pension contributions	(34)	(31)	(38)
Asbestos-related payments	(105)	(110)	(125)
Cash paid for restructuring activities	(32)	(62)	(24)
Change in components of working capital	15	(89)	90
Other, net	(41)	3	(50)
Cash provided by continuing operating activities	793	724	758
Cash utilized in discontinued operating activities	(2)	(3)	(7)
Total cash provided by operating activities	791	721	751
Investing activities:			
Cash payments for property, plant and equipment	(536)	(441)	(454)
Acquisitions, net of cash acquired	(175)	(39)	(56)
Net cash proceeds on disposal of assets	11	14	85
Net foreign exchange derivative activity	2		8
Cash utilized in continuing investing activities	(698)	(466)	(417)
Cash provided by discontinued investing activities		115	
Total cash utilized in investing activities	(698)	(351)	(417)
Financing activities:			
Additions to long-term debt	2,511	1,458	1,235
Repayments of long-term debt	(2,353)	(1,764)	(1,453)
Increase (decrease) in short-term loans	(18)	(36)	10
Payment of finance fees	(13)	(28)	(9)
Distributions paid to noncontrolling interests	(22)	(17)	(16)
Treasury shares repurchased	(163)		
Issuance of common stock and other	5	(5)	5
Cash utilized in financing activities	(53)	(392)	(228)
Effect of exchange rate fluctuations on cash	(20)	22	(13)
Increase in cash	20	—	93

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Cash and cash equivalents at beginning of period	492	492	399
Cash and cash equivalents at end of period	\$ 512	\$ 492	\$ 492

See accompanying Notes to the Consolidated Financial Statements.

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1. Significant Accounting Policies

Basis of Consolidated Statements The consolidated financial statements of Owens-Illinois, Inc. (the “Company”) include the accounts of its subsidiaries. Newly acquired subsidiaries have been included in the consolidated financial statements from dates of acquisition.

The Company uses the equity method of accounting for investments in which it has a significant influence and generally an ownership interest of 20% to 50%. The Company monitors other than temporary declines in fair value and records reductions in carrying values when appropriate.

Nature of Operations The Company is a leading manufacturer of glass container products. The Company’s principal product lines are glass containers for the food and beverage industries. The Company has glass container operations located in 23 countries. The principal markets and operations for the Company’s products are in the Americas, Europe and Asia Pacific.

Use of Estimates The preparation of financial statements in conformity with accounting principles generally accepted in the United States requires management of the Company to make estimates and assumptions that affect certain amounts reported in the financial statements and accompanying notes. Actual results may differ from those estimates, at which time the Company would revise its estimates accordingly.

Foreign Currency Translation The assets and liabilities of non-U.S. subsidiaries are translated into U.S. dollars at year-end exchange rates and their results of operations are converted on an ongoing basis at the monthly average rate. Any related translation adjustments are recorded in accumulated other comprehensive income in share owners’ equity.

Revenue Recognition Revenue is recognized when obligations under the terms of the Company’s contracts and related purchase orders with its customers are satisfied, which primarily takes place when products are shipped from the Company’s manufacturing or warehousing facilities to the customer. Revenue is measured as the amount of consideration the Company expects to receive in exchange for transferring goods, which includes estimated provisions for rebates, discounts, returns and allowances. Sales, value added, and other taxes the Company collects concurrent with revenue-producing activities are excluded from revenue.

Shipping and Handling Costs Shipping and handling costs are included with cost of goods sold in the Consolidated Results of Operations.

Stock-Based Compensation The Company has various stock-based compensation plans consisting of stock option grants and restricted share awards. Costs resulting from all share-based compensation plans are required to be recognized in the financial statements. A public entity is required to measure the cost of employee services received in exchange for an award of equity instruments based on the grant-date fair value of the award. That cost is recognized over the required service period (usually the vesting period). No compensation cost is recognized for equity instruments for which employees do not render the required service.

Cash The Company defines “cash” as cash and time deposits with maturities of three months or less when purchased. Outstanding checks in excess of funds on deposit are included in accounts payable.

Accounts Receivable Receivables are stated at amounts estimated by management to be the net realizable value. The Company charges off accounts receivable when it becomes apparent based upon age or customer circumstances that amounts will not be collected.

Allowance for Doubtful Accounts The allowance for doubtful accounts is established through charges to the provision for bad debts. The Company evaluates the adequacy of the allowance for doubtful accounts on a periodic basis. The evaluation includes historical trends in collections and write-offs, management's judgment of the probability of collecting accounts and management's evaluation of business risk.

Inventory Valuation Inventories are valued at the lower of average costs or market.

See accompanying Notes to the Consolidated Financial Statements.

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NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

Tabular data dollars in millions

Goodwill Goodwill represents the excess of cost over fair value of net assets of businesses acquired. Goodwill is evaluated annually, as of October 1, for impairment or more frequently if an impairment indicator exists.

Intangible Assets and Other Long-Lived Assets Intangible assets are amortized over the expected useful life of the asset. Amortization expense directly attributed to the manufacturing of the Company's products is included in cost of goods sold. Amortization expense related to non-manufacturing activities is included in Selling and administrative expense and Other expense, net. The Company evaluates the recoverability of intangible assets and other long-lived assets based on undiscounted projected cash flows, excluding interest and taxes, when factors indicate that impairment may exist. If impairment exists, the asset is written down to fair value.

Property, Plant and Equipment Property, plant and equipment ("PP&E") is carried at cost and includes expenditures for new facilities and equipment and those costs which substantially increase the useful lives or capacity of existing PP&E. In general, depreciation is computed using the straight-line method and recorded over the estimated useful life of the asset. Factory machinery and equipment is depreciated over periods ranging from 5 to 25 years with the majority of such assets (principally glass-melting furnaces and forming machines) depreciated over 7 to 15 years. Buildings and building equipment are depreciated over periods ranging from 10 to 50 years. Depreciation expense directly attributed to the manufacturing of the Company's products is included in cost of goods sold. Depreciation expense related to non-manufacturing activities is included in selling and administrative. Depreciation expense includes the amortization of assets recorded under capital leases. Maintenance and repairs are expensed as incurred. Costs assigned to PP&E of acquired businesses are based on estimated fair values at the date of acquisition. The Company evaluates the recoverability of PP&E based on undiscounted projected cash flows, excluding interest and taxes, when factors indicate that impairment may exist. If impairment exists, the asset is written down to fair value.

Derivative Instruments The Company uses derivative instruments to manage risks generally associated with foreign exchange rate, interest rate and commodity market volatility. Derivative financial instruments are included on the balance sheet at fair value. Changes in the fair value of derivative assets or liabilities (i.e., gains or losses) are recognized depending upon the type of hedging relationship and whether a hedge has been designated. For those derivative instruments that qualify for hedge accounting, the Company designates the hedging instrument, based upon the exposure being hedged, as a cash flow hedge, fair value hedge, or a hedge of a net investment in a foreign operation. For a derivative instrument designated as a fair value hedge, the gain or loss on the derivative is recognized in earnings immediately with the offsetting gain or loss on the hedged item. For a derivative instrument designated as a cash flow hedge, the effective portion of the derivative's gain or loss is initially reported as a component of Accumulated other comprehensive loss and is subsequently recognized in earnings when the hedged exposure affects earnings. If there is an ineffective portion of the change in fair value of the derivative it is recognized directly in earnings. For a derivative instrument designated as a hedge of a net investment in a foreign operation, the effective portion of the derivative's gain or loss is reported in Accumulated other comprehensive loss as part of the cumulative translation adjustment and amounts are reclassified out of accumulated other comprehensive loss into earnings when the hedged net investment is either sold or substantially liquidated. Changes in fair value of derivative instruments that do not qualify for hedge accounting are recognized immediately in current net earnings. The Company does not enter into derivative financial instruments for trading purposes and is not a party to leveraged derivatives. In the consolidated statement of cash flows, the settlement of derivative instruments designated as hedges is typically recorded in the category that is consistent with the nature of the underlying item being hedged. See Note 8 to the Consolidated Financial Statements for additional information about hedges and derivative financial instruments.

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NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

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Fair Value Measurements Fair value is defined as the amount that would be received to sell an asset or paid to transfer a liability in the principal or most advantageous market for the asset or liability in an orderly transaction between market participants. Generally accepted accounting principles defines a three-tier fair value hierarchy, which prioritizes the inputs used in measuring fair value as follows:

Level 1: Observable inputs such as quoted prices in active markets;

Level 2: Inputs, other than quoted prices in active markets, that are observable either directly or indirectly; and

Level 3: Unobservable inputs for which there is little or no market data, which requires the Company to develop assumptions.

The carrying amounts reported for cash and short-term loans approximate fair value. In addition, carrying amounts approximate fair value for certain long-term debt obligations subject to frequently redetermined interest rates. Fair values for the Company's significant fixed rate debt obligations are generally based on published market quotations.

Reclassifications Certain reclassifications of prior years' data have been made to conform to the current year presentation. As a result of the Company's implementation of Accounting Standards Update No. 2017-07, "Improving the Presentation of Net Periodic Pension Cost and Net Periodic Postretirement Benefit Cost," the Company reclassified \$200 million and \$98 million of pension settlement charges from Cost of goods sold to Other expense, net on the Consolidated Results of Operations for the years ended December 31, 2017 and 2016, respectively. The Company also reclassified \$18 million of pension settlement charges from Selling and administrative expense to Other expense, net on the Consolidated Results of Operations for the year ended December 31, 2017.

New Accounting Standards

Revenue from Contracts with Customers - In May 2014, the Financial Accounting Standards Board ("FASB") issued Accounting Standards Update ("ASU") No. 2014-09, "Revenue from Contracts with Customers," which requires an entity to recognize the amount of revenue to which it expects to be entitled for the transfer of promised goods or services to customers. On January 1, 2018, the Company adopted this accounting standard. See Note 3, Revenue, for additional information.

Leases - In February 2016, the FASB issued ASU No. 2016-02, "Leases" effective January 1, 2019. Under this guidance, lessees will be required to recognize on the balance sheet a lease liability and a right-of-use asset for all leases, with the exception of short-term leases. The lease liability represents the lessee's obligation to make lease payments arising from a lease, and will be measured as the present value of the lease payments. The right-of-use asset represents the lessee's right to use a specified asset for the lease term, and will be measured at the lease liability amount, adjusted for lease prepayment, lease incentives received and the lessee's initial direct costs. ASU No. 2016-02 is required to be applied using the modified retrospective approach for all leases existing as of the effective date. The Company expects to adopt this guidance using the additional, optional transition method, the package of transitional practical expedients relating to the identification, classification and initial direct costs of leases commencing before the effective date of ASU No. 2016-02, and the transitional practical expedient for the treatment of existing land easements; however, the Company does not expect to elect the hindsight transitional practical expedient. The Company anticipates the new guidance will significantly impact its consolidated financial statements as the Company has a significant number of leases. As of December 31, 2018, the Company had minimum lease commitments under

non-cancellable operating leases approximating \$265 million. The Company formed an implementation team, identified its lease population and implemented a new software to manage its leases in accordance with this new accounting standard.

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Credit Losses - In June 2016, the FASB issued ASU No. 2016-13, “Financial Instruments - Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments.” This guidance requires the measurement of all expected credit losses for financial assets held at the reporting date based on historical experience, current conditions and reasonable and supportable forecasts. This guidance also requires enhanced disclosures regarding significant estimates and judgments used in estimating credit losses. The new guidance is effective for the Company on January 1, 2020. Early adoption is permitted for fiscal years, and interim periods within those fiscal years, beginning after December 15, 2018. The Company is currently evaluating the impact that the adoption of this guidance will have on its consolidated financial statements.

Statement of Cash Flows - In August 2016, the FASB issued ASU No. 2016-15, “Classification of Certain Cash Receipts and Cash Payments” which was intended to reduce diversity in practice on how certain transactions are classified in the statement of cash flows. Application of the standard is required for annual periods beginning after December 15, 2017. The Company adopted this standard in the first quarter of 2018. The adoption of this standard did not have a material impact on the Company’s condensed consolidated financial statements.

Compensation - Retirement Benefits - In March 2017, the FASB issued ASU No. 2017-07, “Improving the Presentation of Net Periodic Pension Cost and Net Periodic Postretirement Benefit Cost” which requires the service cost component to be presented with other employee compensation costs in operating income within the income statement while the other components will be reported separately outside of operations. Application of the standard is required for annual periods beginning after December 15, 2017. The Company adopted this standard in the first quarter of 2018. The adoption of this standard did not have a material impact on the Company’s consolidated financial statements, except for in the Consolidated Results of Operations for the prior periods in which there were pension settlement charges. These prior period pension settlement charges were reclassified from the Cost of goods sold and Selling and administrative expense to Other expense, net for the years ended December 31, 2017 and 2016, respectively. See the Reclassifications section of Note 1 for additional details.

Derivatives and Hedging - In August 2017, the FASB issued ASU No. 2017-12, “Targeted Improvements to Accounting for Hedging Activities” which improves the financial reporting of hedging relationships to better portray the economic results of an entity’s risk management activities in its financial statements. Application of the standard is required for annual periods beginning after December 15, 2018. The Company adopted this standard in the first quarter of 2018. The adoption of this standard did not have a material impact on the Company’s condensed consolidated financial statements.

Income Taxes - In January 2018, the FASB issued ASU 2018-02, “Income Statement – Reporting Comprehensive Income (Topic 220): Reclassification of Certain Tax Effects from Accumulated Other Comprehensive Income,” which gives entities the option to reclassify to retained earnings the tax effects resulting from the U.S. Tax Cuts and Jobs Act (the “Act”) related to items in Accumulated other comprehensive income (“AOCI”) that the FASB refers to as having been stranded in AOCI. The new guidance may be applied retrospectively to each period in which the effect of the Act is recognized in the period of adoption. The Company must adopt this guidance for fiscal years beginning after December 15, 2018 and interim periods within those fiscal years. Early adoption is permitted for periods for which financial statements have not yet been issued or made available for issuance, including the period the Act was enacted. The guidance, when adopted, will require new disclosures regarding a company’s accounting policy for releasing the tax effects in AOCI and permit a company the option to reclassify to retained earnings the tax effects resulting from the Act that are stranded in AOCI. The Company is currently evaluating how to apply the new guidance and has not determined whether it will elect to reclassify stranded amounts, if any. The adoption of ASU 2018-02 is not expected

to have a material effect on the Company's consolidated financial statements.

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Owens Illinois, Inc.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

Tabular data dollars in millions

Disclosure Requirements for Fair Value Measurement - In August 2018, the FASB issued ASU No. 2018-13, “Disclosure Framework—Changes to the Disclosure Requirements for Fair Value Measurement” which modifies the fair value disclosure requirements. Application of the standard is required for annual periods beginning after December 15, 2019. The Company is currently evaluating the impact that the adoption of this guidance will have on its consolidated financial statements.

Disclosure Requirements for Defined Benefit Plans - In August 2018, the FASB issued ASU No. 2018-14, “Disclosure Framework—Changes to the Disclosure Requirements for Defined Benefit Plans” which modifies the defined benefit plan disclosure requirements. Application of the standard is required for annual periods beginning after December 15, 2020. The Company is currently evaluating the impact that the adoption of this guidance will have on its consolidated financial statements.

2. Segment Information

The Company has three reportable segments and three operating segments based on its geographic locations: Americas, Europe, and Asia Pacific. These three segments are aligned with the Company’s internal approach to managing, reporting, and evaluating performance of its global glass operations. As previously disclosed, to better leverage its scale and presence across a larger geography and market, the Company completed the consolidation of the former North America and Latin America segments into one segment, named the Americas, effective January 1, 2018. The consolidation resulted in the leadership roles of the former North America and Latin America segments being combined into one position, President of the Americas, reporting to the Company’s chief operating decision maker (“CODM”), who is the Company’s Chief Executive Officer. Beginning January 1, 2018, the CODM reviews the operating results at the Americas level to make resource allocation decisions and to assess performance. The consolidation also resulted in the elimination of duplicative costs as certain functions of the former North America and Latin America segments were combined to simplify the management of the new Americas segment. For example, the Company consolidated its business shared service centers in North America and Latin America into one Americas shared service center. Amounts for 2017 and 2016 in the following tables are presented on the redefined basis for the Americas segment.

Certain assets and activities not directly related to one of the regions or to glass manufacturing are reported with Retained corporate costs and other. These include licensing, equipment manufacturing, global engineering, and certain equity investments. Retained corporate costs and other also includes certain headquarters, administrative and facilities costs and certain incentive compensation and other benefit plan costs that are global in nature and are not allocable to the reportable segments.

The Company’s measure of profit for its reportable segments is segment operating profit, which is a non-GAAP financial measure that consists of consolidated earnings from continuing operations before interest income, interest expense, and provision for income taxes and excludes amounts related to certain items that management considers not representative of ongoing operations as well as certain retained corporate costs. The Company’s management uses segment operating profit, in combination with net sales and selected cash flow information, to evaluate performance and to allocate resources. Segment operating profit for reportable segments includes an allocation of some corporate

expenses based on both a percentage of sales and direct billings based on the costs of specific services provided.

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Owens Illinois, Inc.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

Tabular data dollars in millions

Financial information regarding the Company's reportable segments is as follows (dollars in millions):

	2018	2017	2016
Net sales:			
Americas	\$ 3,638	\$ 3,711	\$ 3,652
Europe	2,489	2,375	2,300
Asia Pacific	675	714	684
Reportable segment totals	6,802	6,800	6,636
Other	75	69	66
Net sales	\$ 6,877	\$ 6,869	\$ 6,702

	2018	2017	2016
Segment operating profit:			
Americas	\$ 585	\$ 614	\$ 568
Europe	316	263	237
Asia Pacific	44	65	77
Reportable segment totals	945	942	882
Items excluded from segment operating profit:			
Retained corporate costs and other charges	(106)	(104)	(98)
Charge for asbestos-related costs	(125)		
Pension settlement charges	(74)	(218)	(98)
Restructuring, asset impairment and other	(102)	(77)	(129)
Gain on China land sale			71
Interest expense, net	(261)	(268)	(272)
Earnings from continuing operations before income taxes	\$ 277	\$ 275	\$ 356

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Owens Illinois, Inc.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

Tabular data dollars in millions

	Americas	Europe	Asia Pacific	Reportable Segment Totals	Retained Corp Costs and Other	Consoli- dated Totals
Total assets:						
2018	\$ 5,497	\$ 3,036	\$ 918	\$ 9,451	\$ 248	\$ 9,699
2017	5,411	3,133	1,001	9,545	211	9,756
2016	5,059	2,792	926	8,777	358	9,135
Equity investments:						
2018	\$ 429	\$ 98	\$ 106	\$ 633	\$ 65	\$ 698
2017	259	95	114	468	57	525
2016	21	78	117	216	217	433
Equity earnings:						
2018	\$ 39	\$ 21	\$ —	\$ 60	\$ 17	\$ 77
2017	41	18		59	18	77
2016	12	15	4	31	29	60
Capital expenditures:						
2018	\$ 255	\$ 187	\$ 92	\$ 534	\$ 2	\$ 536
2017	233	152	55	440	1	441
2016	231	163	59	453	1	454
Depreciation and amortization expense:						
2018	\$ 293	\$ 136	\$ 55	\$ 484	\$ 10	\$ 494
2017	310	125	43	478	10	488
2016	312	118	37	467	11	478

The Company's net property, plant and equipment by geographic segment are as follows:

	U.S.	Non-U.S.	Total
2018	\$ 681	\$ 2,404	\$ 3,085
2017	757	2,374	3,131
2016	749	2,131	2,880

The Company's net sales by geographic segment are as follows:

	U.S.	Non-U.S.	Total
2018	\$ 2,020	\$ 4,857	\$ 6,877
2017	2,072	4,797	6,869
2016	2,124	4,578	6,702

None of the years presented had a country with operations outside of the U.S. that accounted for more than 10% or more of consolidated net sales.

3. Revenue

On January 1, 2018, the Company adopted accounting standard ASC 606, “Revenue from Contracts with Customers,” and selected the modified retrospective transition method. The adoption of this new standard did not impact the Company’s consolidated results of operations or balance sheet and there was no cumulative effect of initially applying this new revenue standard to the opening balance of retained earnings.

Revenue is recognized when obligations under the terms of the Company’s contracts and related purchase orders with its customers are satisfied. This occurs with the transfer of control of glass containers, which primarily takes place when products are shipped from the Company’s manufacturing or warehousing facilities to

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Owens Illinois, Inc.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

Tabular data dollars in millions

the customer. Revenue is measured as the amount of consideration the Company expects to receive in exchange for transferring goods, which includes estimated provisions for rebates, discounts, returns and allowances. Sales, value added, and other taxes the Company collects concurrent with revenue-producing activities are excluded from revenue. The Company's payment terms are based on customary business practices and can vary by customer type. The term between invoicing and when payment is due is not significant. Also, the Company elected to account for shipping and handling costs as a fulfillment cost at the time of shipment.

For the year ended December 31, 2018, the Company had no material bad debt expense and there were no material contract assets, contract liabilities or deferred contract costs recorded on the Consolidated Balance Sheet. For the year ended December 31, 2018, revenue recognized from prior periods (for example, due to changes in transaction price) was not material.

The following table for the year ended December 31, 2018 disaggregates the Company's revenue by customer end use:

	Americas	Europe	Asia Pacific	Total
Alcoholic beverages (beer, wine, spirits)	\$ 2,281	\$ 1,780	\$ 493	\$ 4,554
Food and other	780	461	101	1,342
Non-alcoholic beverages	577	248	81	906
Reportable segment totals	\$ 3,638	\$ 2,489	\$ 675	\$ 6,802
Other				75
Net sales				\$ 6,877

4. Inventories

Major classes of inventory are as follows:

	2018	2017
Finished goods	\$ 849	\$ 873
Raw materials	125	122
Operating supplies	44	41
	\$ 1,018	\$ 1,036

5. Equity Investments

At December 31, 2018 the Company's ownership percentage in affiliates include:

Affiliates	O-I Ownership Percentage	Business Type
Empresas Comegua S.A.	49.7 %	Glass container manufacturer
BJC O-I Glass Pte. Ltd.	50 %	Glass container manufacturer
CO Vidrieria SARL ("COV")	50 %	Glass container manufacturer
Rocky Mountain Bottle Company	50 %	Glass container manufacturer
Tata Chemical (Soda Ash) Partners	25 %	Soda ash supplier
Vetriere Meridionali SpA ("VeMe")	50 %	Glass container manufacturer
Vetri Speciali SpA	50 %	Specialty glass manufacturer

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NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

Tabular data dollars in millions

Summarized information pertaining to the Company's equity affiliates follows:

	2018	2017	2016
Equity in earnings:			
Non-U.S.	\$ 52	\$ 45	\$ 19
U.S.	25	32	41
Total	\$ 77	\$ 77	\$ 60
Dividends received	\$ 72	\$ 48	\$ 38

Summarized combined financial information for equity affiliates is as follows (unaudited):

	2018	2017
At end of year:		
Current assets	\$ 655	\$ 466
Non-current assets	1,306	1,021
Total assets	1,961	1,487
Current liabilities	342	232
Other liabilities and deferred items	242	198
Total liabilities and deferred items	584	430
Net assets	\$ 1,377	\$ 1,057

For the year:	2018	2017	2016
Net sales	\$ 972	\$ 883	\$ 755
Gross profit	\$ 234	\$ 242	\$ 182
Net earnings	\$ 184	\$ 165	\$ 145

Based on an evaluation of each of the Company's equity investments for the three years ending December 31, 2018, no investments exceeded the significant subsidiary thresholds per Rule 3-09 of Regulation S-X. As such, separate financial statements for the Company's equity investments are not required to be filed with the Securities and Exchange Commission.

The Company made purchases of approximately \$255 million and \$180 million from equity affiliates in 2018 and 2017, respectively, and owed approximately \$111 million and \$90 million to equity affiliates as of December 31, 2018 and 2017, respectively.

There is a difference of approximately \$9 million as of December 31, 2018, between the amount at which certain investments are carried and the amount of underlying equity in net assets. The portion of the difference related to inventory or amortizable assets is amortized as a reduction of the equity earnings. The remaining difference is considered goodwill.

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Owens Illinois, Inc.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

Tabular data dollars in millions

6. Goodwill and Intangible Assets

Goodwill

The changes in the carrying amount of goodwill for the years ended December 31, 2018, 2017, and 2016 are as follows:

	Europe	Americas	Other	Total
Balance as of January 1, 2016	\$ 840	\$ 1,644	\$ 5	\$ 2,489
Acquisition related adjustments		41		41
Translation effects	(32)	(36)		(68)
Balance as of December 31, 2016	808	1,649	5	2,462
Translation effects	105	23		128
Balance as of December 31, 2017	913	1,672	5	2,590
Translation effects	(39)	(38)		(77)
Balance as of December 31, 2018	\$ 874	\$ 1,634	\$ 5	\$ 2,513

The acquisition related adjustments in 2016 primarily relate to the Vitro acquisition that the Company completed on September 1, 2015.

Goodwill for the Asia Pacific segment is \$0 and net of accumulated impairment losses of \$1,135 million as of December 31, 2018, 2017, and 2016.

Goodwill is tested for impairment annually as of October 1 (or more frequently if impairment indicators arise) by comparing the business enterprise value (“BEV”) of each reporting unit with its carrying value. The BEV is computed based on estimated future cash flows, discounted at the weighted average cost of capital of a hypothetical third-party buyer. If the BEV is less than the carrying value for any reporting unit, then any excess of the BEV of the goodwill over the carrying value will be recorded as an impairment loss. The calculations of the BEV are based on significant unobservable inputs, such as projected future cash flows of the reporting units, discount rates, terminal business value, and are classified as Level 3 in the fair value hierarchy. The Company’s projected future cash flows incorporates management’s best estimates of the expected future results including, but not limited to, price trends, customer demand, material costs, asset replacement costs and any other known factors.

During the fourth quarter of 2018, the Company completed its annual impairment testing and determined that no impairment existed.

Intangible Assets

Customer list intangible assets are amortized using the accelerated amortization method over their 20 year lives. Net intangible asset values were \$400 million and \$439 million, which included accumulated amortization of \$142 million and \$102 million, for the years ended December 31, 2018 and 2017, respectively. Amortization expense for intangible assets was \$40 million, \$41 million and \$39 million for the years ended December 31, 2018, 2017, and 2016, respectively. Estimated amortization related to intangible assets through 2023 is as follows: 2019, \$42 million; 2020, \$41 million; 2021, \$39 million; 2022, \$36 million; and 2023, \$32 million. No impairment existed on these assets at

December 31, 2018.

The Company has determined that the fair value measurements related to the customer list intangibles are based on significant unobservable inputs and are classified as Level 3 in the fair value hierarchy.

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Owens Illinois, Inc.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

Tabular data dollars in millions

7. Other Assets

Other assets (noncurrent) consist of the following at December 31, 2018 and 2017:

	2018	2017
Deferred tax assets	\$ 191	\$ 194
Deferred returnable packaging costs	109	119
Repair part inventories	102	106
Capitalized software	79	82
Value added taxes	26	24
Other	95	77
	\$ 602	\$ 602

Capitalized software includes costs related to the acquisition and development of internal-use software. These costs are amortized over the estimated useful life of the software. Amortization expense for capitalized software was \$12 million, \$12 million and \$13 million for 2018, 2017, and 2016, respectively. Estimated amortization related to capitalized software through 2023 is as follows: 2019, \$14 million; 2020, \$12 million; 2021, \$12 million; 2022, \$11 million; and 2023, \$10 million.

8. Derivative Instruments

The Company has certain derivative assets and liabilities which consist of natural gas forwards, foreign exchange option and forward contracts, interest rate swaps and cross currency swaps. The valuation of these instruments is determined primarily using the income approach, including discounted cash flow analysis on the expected cash flows of each derivative. Natural gas forward rates, foreign exchange rates and interest rates are the significant inputs into the valuation models. The Company also evaluates counterparty risk in determining fair values. This analysis reflects the contractual terms of the derivatives, including the period to maturity, and uses observable market-based inputs, including interest rate curves and implied volatilities. The fair values of interest rate swaps are determined using the market standard methodology of netting the discounted future fixed cash receipts (or payments) and the discounted expected variable cash payments (or receipts). The variable cash payments (or receipts) are based on an expectation of future interest rates (forward curves) derived from observable market interest rate curves. These inputs are observable in active markets over the terms of the instruments the Company holds, and accordingly, the Company classifies its derivative assets and liabilities as Level 2 in the hierarchy.

Commodity Forward Contracts Designated as Cash Flow Hedges

The Company enters into commodity forward contracts related to forecasted natural gas requirements, the objectives of which are to limit the effects of fluctuations in the future market price paid for natural gas and the related volatility in cash flows.

An unrecognized gain of \$1 million at December 31, 2018 and an unrecognized gain of \$3 million at December 31, 2017, related to the commodity forward contracts were included in Accumulated OCI, and will be reclassified into earnings in the period when the commodity forward contracts expire.

Foreign Exchange Derivative Contracts Not Designated as Hedging Instruments

The Company uses short-term forward exchange or option agreements to purchase foreign currencies at set rates in the future. These agreements are used to limit exposure to fluctuations in foreign currency exchange rates for significant planned purchases of fixed assets or commodities that are denominated in currencies other than the subsidiaries' functional currency. The Company also uses foreign exchange agreements to offset the foreign currency risk for receivables and payables, including intercompany receivables, payables, and loans, not denominated in, or indexed to, their functional currencies.

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Tabular data dollars in millions

Cash Flow Hedges of Foreign Exchange Risk

The Company has variable-interest rate borrowings denominated in currencies other than the functional currency of the borrowing subsidiaries. As a result, the Company is exposed to fluctuations in the currency of the borrowing against the subsidiaries' functional currency. The Company uses derivatives to manage these exposures and designates these derivatives as cash flow hedges of foreign exchange risk.

During 2018, two of the Company's subsidiaries, a New Zealand dollar functional currency subsidiary and an Australian dollar functional currency subsidiary, entered into a series of cross-currency swaps to U.S. dollar instruments with a fixed notional amount of \$109 million and \$168 million, respectively. They reach final maturity in 2022. During 2017, one of the Company's Euro-functional subsidiaries entered into a series of cross-currency swaps that have a pay fixed notional amount of €263 million and a receive notional amount of \$310 million. They reach final maturity in 2023.

An unrecognized loss of \$9 million at December 31, 2018 and an unrecognized loss of less than \$1 million at December 31, 2017, related to these cross-currency swaps, were included in Accumulated OCI, and will be reclassified into earnings within the next twelve months.

Interest Rate Swaps Designated as Fair Value Hedges

The Company enters into interest rate swaps in order to maintain a capital structure containing targeted amounts of fixed and floating-rate debt and manage interest rate risk. The Company's fixed-to-variable interest rate swaps are accounted for as fair value hedges. The relevant terms of the swap agreements match the corresponding terms of the notes and therefore there is no hedge ineffectiveness. The Company recorded the net of the fair market values of the swaps as a long-term liability and short-term asset along with a corresponding net decrease in the carrying value of the hedged debt.

Cash Flow Hedges of Interest Rate Risk

The Company enters into interest rate swaps in order to maintain a capital structure containing targeted amounts of fixed and floating-rate debt and manage interest rate risk. Interest rate swaps designated as cash flow hedges involve the receipt of variable amounts from a counterparty in exchange for the Company making fixed-rate payments. These interest rate swap agreements were used to hedge the variable cash flows associated with variable-rate debt.

An unrecognized loss of less than \$1 million at year ended December 31, 2018 related to these interest rate swaps, was included in Accumulated OCI, and will be reclassified into earnings within the next twelve months.

Net Investment Hedges

The Company is exposed to fluctuations in foreign exchange rates on investments it holds in non-U.S. subsidiaries and uses cross currency swaps to partially hedge this exposure.

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Balance Sheet Classification

The following table shows the amount and classification (as noted above) of the Company's derivatives at December 31, 2018 and 2017:

	Notional Amount		Fair Value of		Hedge		Maximum	
	2018	2017	Hedge Assets		Liabilities		Maturity Date	
	2018	2017	2018	2017	2018	2017	2018	2017
Derivatives designated as hedging instruments:								
Commodity forward contracts	\$ 21	\$ 30	\$ 1	\$ 3	\$ —	\$ 13	various	various
Interest rate swaps (fair value hedges)	€ 725	€ 725	6	6	1	10	2024	2024
Cash flow hedges of foreign exchange risk	\$ 587	\$ 310	10	4	1		various	various
Interest rate swaps (cash flow hedges)	\$ 180						2020	
Net investment hedges	€ 160		6		8		2020	
Total derivatives accounted for as hedges			\$ 23	\$ 13	\$ 10	\$ 23		
Derivatives not designated as hedges:								
Foreign exchange derivative contracts	\$ 470	\$ 460	2	4	2	1	various	various
Total derivatives			\$ 25	\$ 17	\$ 12	\$ 24		
Current			\$ 19	\$ 14	\$ 3	\$ —		
Noncurrent			6	3	9	24		
Total derivatives			\$ 25	\$ 17	\$ 12	\$ 24		

The effects of derivative instruments on the Company's Consolidated Statements of Income and Comprehensive Income for OCI for the years ended December 31, 2018, 2017 and 2016 are as follows:

	Gain (Loss) Recognized in OCI (Effective Portion)			Gain (Loss) Reclassified from Accumulated OCI into Income (Effective Portion) (1)		
	2018	2017	2016	2018	2017	2016
Derivatives designated as hedging instruments:						
Cash Flow Hedges						
Commodity forward contracts (a)	\$ (6)	\$ 6	\$ 7	\$ 1	\$ -	\$ -
Cash flow hedges of foreign exchange risk (b)	12			9		

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9. Restructuring

The Company continually reviews its manufacturing footprint and operating cost structure and may decide to close operations or reduce headcount to gain efficiencies, integrate acquired operations, reduce future expenses and address other market factors. The Company incurs costs associated with these actions including employee severance and benefits, other exit costs such as those related to contract terminations, and asset impairment charges. The Company also may incur other costs related to closed facilities including environmental remediation, clean up, dismantling and preparation for sale or other disposition.

The Company accounts for restructuring and other costs under applicable provisions of generally accepted accounting principles. Charges for employee severance and related benefits are generally accrued based on contractual arrangements with employees or their representatives. Other exit costs are accrued based on the estimated cost to settle related contractual arrangements. Estimated environmental remediation costs are accrued when specific claims have been received or are probable of being received.

The Company's decisions to curtail selected production capacity have resulted in write downs of certain long-lived assets to the extent their carrying amounts exceeded fair value or fair value less cost to sell. The Company classified the significant assumptions used to determine the fair value of the impaired assets in the period that the measurement was taken as Level 3 (third party appraisal) in the fair value hierarchy as set forth in the general accounting principles for fair value measurements. For the asset impairments recorded through December 31, 2018 and December 31, 2017, the remaining carrying value of the impaired assets was approximately \$9 million and \$0, respectively.

When a decision is made to take restructuring actions, the Company manages and accounts for them programmatically apart from the on-going operations of the business. Information related to major programs are presented separately while minor initiatives are presented on a combined basis. As of December 31, 2018 and 2017, no major restructuring programs were in effect.

In 2018, the Company implemented several discrete restructuring initiatives and recorded restructuring, asset impairment and other charges of \$92 million. These charges consisted of employee costs, write-down of assets, and other exit costs primarily related to plant and furnace closures in the Americas region. These restructuring charges were discrete actions and are expected to approximate the total cumulative costs for those actions as no significant additional costs are expected to be incurred. These restructuring charges primarily relate to capacity curtailments and the Company reallocated the products produced at these facilities to other facilities. These charges were recorded to Cost of goods sold (\$5 million) and Other expense, net (\$87 million) on the Consolidated Results of Operations. The Company expects that the majority of the remaining cash expenditures related to the above charges will be paid out by the end of 2019.

In 2017, the Company implemented several discrete restructuring initiatives and recorded restructuring, asset impairment and other charges of \$72 million. These charges consisted of employee costs, write-down of assets, and other exit costs primarily related to a plant closure in the Americas region. These restructuring charges were discrete actions and are expected to approximate the total cumulative costs for those actions as no significant additional costs are expected to be incurred. These restructuring charges primarily relate to capacity curtailments and the Company reallocated the products produced at these facilities to other facilities. These charges were recorded to Other expense, net on the Consolidated Results of Operations. The Company expects that the majority of the remaining cash expenditures related to the above charges will be paid out by the end of 2019.

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The following table presents information related to restructuring, asset impairment and other costs related to closed facilities from January 1, 2017 through December 31, 2018:

	Employee Costs	Asset Impairment	Other Exit Costs	Total Restructuring
Balance at January 1, 2017	\$ 67	\$ —	\$ 18	\$ 85
Charges	45	11	16	72
Write-down of assets to net realizable value		(11)		(11)
Net cash paid, principally severance and related benefits	(49)		(13)	(62)
Other, including foreign exchange translation	4		(3)	1
Balance at December 31, 2017	\$ 67	\$ —	\$ 18	\$ 85
Charges	20	60	12	92
Write-down of assets to net realizable value		(60)		(60)
Net cash paid, principally severance and related benefits	(24)		(8)	(32)
Transfers to other accounts			(4)	(4)
Other, including foreign exchange translation	(3)		(9)	(12)
Balance at December 31, 2018	\$ 60	\$ —	\$ 9	\$ 69

10. Pension Benefit Plans and Other Postretirement Benefits

Pension Benefit Plans

The Company has defined benefit pension plans covering a substantial number of employees located in the United States and several other non-U.S. jurisdictions. Benefits generally are based on compensation for salaried employees and on length of service for hourly employees. The Company's policy is to fund pension plans such that sufficient assets will be available to meet future benefit requirements. The Company's defined benefit pension plans use a December 31 measurement date.

The changes in the pension benefit obligations for the year are as follows:

	U.S. 2018	2017	Non-U.S. 2018	2017
Obligations at beginning of year	\$ 1,650	\$ 1,956	\$ 1,148	\$ 1,235
Change in benefit obligations:				
Service cost	14	14	15	15
Interest cost	59	78	32	40
	(108)	123	(23)	(15)

Actuarial (gain) loss, including the effect of change in discount rates

Settlements	(114)	(393)	(35)	(171)
Participant contributions			2	1
Benefit payments	(91)	(128)	(51)	(60)
Other	3		(2)	
Foreign currency translation			(64)	103
Net change in benefit obligations	(237)	(306)	(126)	(87)
Obligations at end of year	\$ 1,413	\$ 1,650	\$ 1,022	\$ 1,148

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Tabular data dollars in millions

The changes in the fair value of the pension plans' assets for the year are as follows:

	U.S.		Non-U.S.	
	2018	2017	2018	2017
Fair value at beginning of year	\$ 1,394	\$ 1,654	\$ 975	\$ 1,011
Change in fair value:				
Actual gain (loss) on plan assets	(96)	254	(15)	87
Benefit payments	(91)	(128)	(51)	(60)
Employer contributions	1	7	33	24
Participant contributions			2	1
Settlements	(114)	(393)	(35)	(171)
Foreign currency translation			(58)	83
Other			(8)	
Net change in fair value of assets	(300)	(260)	(132)	(36)
Fair value at end of year	\$ 1,094	\$ 1,394	\$ 843	\$ 975

The Company recognizes the funded status of each pension benefit plan on the balance sheet. The funded status of each plan is measured as the difference between the fair value of plan assets and actuarially calculated benefit obligations as of the balance sheet date. Actuarial gains and losses are accumulated in Other Comprehensive Income and the portion of each plan that exceeds 10% of the greater of that plan's assets or projected benefit obligation is amortized to income on a straight-line basis over the average remaining service period of employees still accruing benefits or the expected life of participants not accruing benefits if all, or almost all, of the plan's participants are no longer accruing benefits.

The funded status of the pension plans at year end is as follows:

	U.S.		Non-U.S.	
	2018	2017	2018	2017
Plan assets at fair value	\$ 1,094	\$ 1,394	\$ 843	\$ 975
Projected benefit obligations	1,413	1,650	1,022	1,148
Plan assets less than projected benefit obligations	(319)	(256)	(179)	(173)
Items not yet recognized in pension expense:				
Actuarial loss	785	811	285	284
Prior service cost (credit)		1	4	(2)
	785	812	289	282
Net amount recognized	\$ 466	\$ 556	\$ 110	\$ 109

The net amount recognized is included in the Consolidated Balance Sheets at December 31, 2018 and 2017 as follows:

	U.S.		Non-U.S.	
	2018	2017	2018	2017
Pension assets	\$ —	\$ —	\$ 44	\$ 49
Current pension liability, included with other accrued liabilities	(3)	(2)	(5)	(5)
Pension benefits	(316)	(254)	(218)	(217)

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Accumulated other comprehensive loss	785	812	289	282
Net amount recognized	\$ 466	\$ 556	\$ 110	\$ 109

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NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

Tabular data dollars in millions

The following changes in plan assets and benefit obligations were recognized in accumulated other comprehensive income at December 31, 2018 and 2017 as follows (amounts are pretax):

	U.S.		Non-U.S.	
	2018	2017	2018	2017
Current year actuarial (gain) loss	\$ 86	\$ (2)	\$ 43	\$ (40)
Amortization of actuarial loss	(51)	(57)	(11)	(16)
Settlement	(61)	(176)	(13)	(42)
Other	(1)		6	
	(27)	(235)	25	(98)
Translation			(18)	30
Change in accumulated other comprehensive income	\$ (27)	\$ (235)	\$ 7	\$ (68)

The accumulated benefit obligation for all defined benefit pension plans was \$2,379 million and \$2,735 million at December 31, 2018 and 2017, respectively.

The components of the net pension expense for the year are as follows:

	U.S.			Non-U.S.		
	2018	2017	2016	2018	2017	2016
Service cost	\$ 14	\$ 14	\$ 15	\$ 15	\$ 15	\$ 16
Interest cost	59	78	90	32	40	44
Expected asset return	(98)	(128)	(149)	(52)	(63)	(65)
Amortization:						
Actuarial loss	51	57	67	11	16	13
Net expense	\$ 26	\$ 21	\$ 23	\$ 6	\$ 8	\$ 8

Effective January 1, 2016, the Company amended its salary pension plan in North America to freeze future pension benefits. This action required an obligation remeasurement for the curtailment of benefits, which resulted in a reduction of the Company's pension expense.

In 2018, the Company settled a portion of its pension obligations in the U.S. and the United Kingdom, resulting in settlement charges of \$61 million and \$13 million, respectively. A retiree annuity contract purchase transaction in the U.S. amounting to approximately \$94 million gave rise to the majority of the settlement charges, with lump-sum payments directly to plan participants comprising the remainder. In 2017, the Company settled a portion of its pension obligations in the U.S., Canada and the United Kingdom, resulting in settlement charges of \$176 million, \$27 million and \$15 million, respectively. Retiree annuity contract purchase transactions in the U.S. and Canada amounting to approximately \$369 million and \$123 million, respectively, with several insurers, gave rise to the majority of the settlement transactions, with lump-sum payments directly to plan participants comprising the remainder. In 2016, the Company settled a portion of its U.S. pension obligation via a retiree annuity contract purchase of approximately \$200 million, which resulted in a settlement charge of \$98 million.

The components of pension expense, other than the service cost component, as well as pension settlement charges are included in Other expense, net on the Consolidated Results of Operations.

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NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

Tabular data dollars in millions

Amounts that are expected to be amortized from accumulated other comprehensive income into net pension expense during 2019:

	U.S.	Non-U.S.
Actuarial loss	\$ 40	\$ 10

The following information is for plans with projected and accumulated benefit obligations in excess of the fair value of plan assets at year end:

	Projected Benefit Obligation Exceeds the Fair Value of Plan Assets				Accumulated Benefit Obligation Exceeds the Fair Value of Plan Assets			
	U.S.		Non-U.S.		U.S.		Non-U.S.	
	2018	2017	2018	2017	2018	2017	2018	2017
Projected benefit obligations	\$ 1,413	\$ 1,650	\$ 815	\$ 905	\$ 1,413	\$ 1,650	\$ 815	\$ 261
Accumulated benefit obligation	1,412	1,650	793	878	1,412	1,650	793	241
Fair value of plan assets	1,094	1,394	591	682	1,094	1,394	591	39

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

	U.S.		Non-U.S.	
	2018	2017	2018	2017
Discount rate	4.36 %	3.69 %	3.01 %	2.76 %
Rate of compensation increase	N/A	N/A	2.75 %	2.78 %

The weighted average assumptions used to determine net periodic pension costs are as follows:

	U.S.			Non-U.S.		
	2018	2017	2016	2018	2017	2016
Discount rate	3.69 %	4.17 %	4.43 %	2.76 %	2.94 %	3.68 %
Rate of compensation increase	N/A	N/A	N/A %	2.78 %	2.90 %	2.84 %
Expected long-term rate of return on assets	7.25 %	7.50 %	7.50 %	5.52 %	6.32 %	7.15 %

Future benefits are assumed to increase in a manner consistent with past experience of the plans, which, to the extent benefits are based on compensation, includes assumed salary increases as presented above.

For 2018, the Company's weighted average expected long-term rate of return on assets was 7.25% for the U.S. plans and 5.52% for the non-U.S. plans. In developing this assumption, the Company considered its historical 10-year average return (through December 31, 2018) and evaluated input from its third party pension plan asset consultants, including their review of asset class return expectations.

It is the Company's policy to invest pension plan assets in a diversified portfolio consisting of an array of asset classes within established target asset allocation ranges. The investment risk of the assets is limited by appropriate

diversification both within and between asset classes. Plan assets are primarily invested in a broad mix of domestic and international equities, domestic and international bonds, and real estate, subject to target asset allocation ranges, which may differ by individual plan. The assets are managed with a view to ensuring that sufficient liquidity will be available to meet expected cash flow requirements.

The investment valuation policy of the Company is to value investments at fair value. Equity securities for which market quotations are readily available are valued at the last reported sales price on their principal exchange on valuation date or official close for certain markets. Fixed income investments are valued by an independent pricing service. Investments in registered investment companies or collective pooled funds are valued at their respective net asset values. Short-term investments are stated at amortized cost, which approximates fair value. The fair value of real estate is determined by periodic appraisals.

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The assets of the U.S. plans are maintained in a group trust. The U.S. plans hold no individual assets other than the investment in the group trust. The Company's U.S. pension plan assets held in the group trust are measured at net asset value in the fair value hierarchy. The total U.S. plan assets amounted to \$1,094 million and \$1,394 million as of December 31, 2018 and 2017, respectively. In 2018, the group trust assets consisted of approximately 62% equity securities, 32% debt securities, and 6% real estate and other.

In 2018, the non-U.S. plan assets consisted of approximately 16% equity securities, 60% debt securities, and 24% real estate and other. The following table sets forth by level, within the fair value hierarchy, the Company's non-U.S. pension plan assets at fair value as of December 31, 2018 and 2017:

	2018				2017			
	Level 1	Level 2	Level 3	Total	Level 1	Level 2	Level 3	Total
Cash and cash equivalents	\$ 9	\$ —	\$ —	\$ 9	\$ 9	\$ —	\$ —	\$ 9
Equity securities				—				—
Debt securities	34	7		41	33			33
Real estate				—				—
Other		30		30		27		27
Total	\$ 43	\$ 37	\$ —		\$ 42	\$ 27	\$ —	
Investments measured at net asset value				\$ 763				\$ 906
Total non-U.S. assets at fair value				\$ 843				\$ 975

The following is a reconciliation of the Company's pension plan assets recorded at fair value using significant unobservable inputs (Level 3):

	2018	2017
Beginning balance	\$ —	\$ 10
Net increase (decrease)		(10)
Ending balance	\$ —	\$ —

The net increase (decrease) in the fair value of the Company's Level 3 pension plan assets is primarily due to purchases and sales of unlisted real estate funds. The change in the fair value of Level 3 pension plan assets due to actual return on those assets was immaterial in 2018.

In order to maintain minimum funding requirements, the Company is required to make contributions to its defined benefit pension plans of approximately \$36 million in 2019.

The following estimated future benefit payments, which reflect expected future service, as appropriate, are expected to be paid in the years indicated:

Year(s)	U.S.	Non-U.S.
2019	\$ 102	\$ 47
2020	100	48

2021	99	51
2022	99	54
2023	97	56
2024-2028	463	279

The Company also sponsors several defined contribution plans for all salaried and hourly U.S. employees, and employees in Canada, the United Kingdom, the Netherlands and Australia. Participants' contributions are based on their compensation. The Company matches contributions of participants, up to various limits, in substantially all plans. Company contributions to these plans amounted to \$36 million in 2018, \$33 million in 2017, and \$34 million in 2016.

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Postretirement Benefits Other Than Pensions

The Company provides retiree health care and life insurance benefits covering certain U.S. salaried and hourly employees, and substantially all employees in Canada. Benefits provided by the Company for hourly retirees are determined by collective bargaining. Employees are generally eligible for benefits upon retirement and completion of a specified number of years of creditable service. The Company uses a December 31 measurement date to measure its postretirement benefit obligations.

The changes in the postretirement benefit obligations for the year are as follows:

	U.S.		Non-U.S.	
	2018	2017	2018	2017
Obligations at beginning of year	\$ 89	\$ 92	\$ 89	\$ 81
Change in benefit obligations:				
Service cost			1	1
Interest cost	3	4	3	3
Actuarial (gain) loss, including the effect of changing discount rates	(9)		(4)	1
Benefit payments	(9)	(7)	(2)	(2)
Foreign currency translation			(7)	5
Other				
Net change in benefit obligations	(15)	(3)	(9)	8
Obligations at end of year	\$ 74	\$ 89	\$ 80	\$ 89

The funded status of the postretirement benefit plans at year end is as follows:

	U.S.		Non-U.S.	
	2018	2017	2018	2017
Postretirement benefit obligations	\$ (74)	\$ (89)	\$ (80)	\$ (89)
Items not yet recognized in net postretirement benefit cost:				
Actuarial gain (loss)	(8)	(19)	(2)	(7)
Prior service credit	15	22		
	7	3	(2)	(7)
Net amount recognized	\$ (67)	\$ (86)	\$ (82)	\$ (96)

The net amount recognized is included in the Consolidated Balance Sheets at December 31, 2018 and 2017 as follows:

	U.S.		Non-U.S.	
	2018	2017	2018	2017
Current nonpension postretirement benefit, included with Other accrued liabilities	\$ (6)	\$ (8)	\$ (3)	\$ (3)
Nonpension postretirement benefits	(68)	(81)	(77)	(86)
Accumulated other comprehensive income (loss)	7	3	(2)	(7)
Net amount recognized	\$ (67)	\$ (86)	\$ (82)	\$ (96)

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The following changes in benefit obligations were recognized in accumulated other comprehensive income at December 31, 2018 and 2017 as follows (amounts are pretax):

	U.S.		Non-U.S.	
	2018	2017	2018	2017
Current year actuarial (gain) loss	\$ (8)	\$ —	\$ (4)	\$ 1
Amortization of actuarial loss	(2)	(2)		
Amortization of prior service credit	7	8		
	\$ (3)	\$ 6	\$ (4)	\$ 1

The components of the net postretirement benefit cost for the year are as follows:

	U.S.			Non-U.S.		
	2018	2017	2016	2018	2017	2016
Service cost	\$ —	\$ —	\$ —	\$ 1	\$ 1	\$ 1
Interest cost	3	4	4	3	3	3
Amortization:						
Actuarial loss	2	2	2			
Prior service credit	(7)	(8)	(8)			
Net amortization	(5)	(6)	(6)	—	—	—
Net postretirement benefit (income) cost	\$ (2)	\$ (2)	\$ (2)	\$ 4	\$ 4	\$ 4

Amounts that are expected to be amortized from accumulated other comprehensive income into net postretirement benefit cost during 2019:

	U.S.	Non-U.S.
Amortization:		
Actuarial loss	\$ 1	\$ —
Prior service credit	(8)	
Net amortization	\$ (7)	\$ —

Amortization included in net postretirement benefit cost is based on the average remaining service of employees. The weighted average discount rates used to determine the accumulated postretirement benefit obligation and net postretirement benefit cost are as follows:

	U.S.			Non-U.S.		
	2018	2017	2016	2018	2017	2016
Accumulated postretirement benefit obligation	4.30 %	3.61 %	4.11 %	3.60 %	3.35 %	3.55 %
Net postretirement benefit cost	3.61 %	4.11 %	4.35 %	3.35 %	3.55 %	3.80 %

The weighted average assumed health care cost trend rates at December 31 are as follows:

	U.S.		Non-U.S.	
	2018	2017	2018	2017

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Health care cost trend rate assumed for next year	6.00	%	6.20	%	5.00	%	5.00	%
Rate to which the cost trend rate is assumed to decline (ultimate trend rate)	5.00	%	5.00	%	5.00	%	5.00	%
Year that the rate reaches the ultimate trend rate	2025		2024		N/A		N/A	

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Assumed health care cost trend rates affect the amounts reported for the postretirement benefit plans. A one-percentage-point change in assumed health care cost trend rates would have the following effects:

	U.S.		Non-U.S.	
	1-Percentage-Point Increase	1-Percentage-Point Decrease	1-Percentage-Point Increase	1-Percentage-Point Decrease
Effect on total of service and interest cost	\$ —	\$ —	\$ 1	\$ (1)
Effect on accumulated postretirement benefit obligations	3	(2)	14	(11)

Amortization included in net postretirement benefit cost is based on the average remaining service of employees.

The following estimated future benefit payments, which reflect expected future service, as appropriate, are expected to be paid in the years indicated:

Year(s)	U.S.	Non-U.S.
2019	\$ 7	\$ 3
2020	7	3
2021	6	3
2022	6	3
2023	6	4
2024 - 2028	25	19

Other U.S. hourly retirees receive health and life insurance benefits from a multi-employer trust established by collective bargaining. Payments to the trust as required by the bargaining agreements are based upon specified amounts per hour worked and were \$6 million in 2018, \$6 million in 2017 and \$6 million in 2016. Postretirement health and life benefits for retirees of foreign subsidiaries are generally provided through the national health care programs of the countries in which the subsidiaries are located.

11. Income Taxes

The provision for income taxes was calculated based on the following components of earnings (loss) before income taxes:

Continuing operations	2018	2017	2016
U.S.	\$ (100)	\$ (43)	\$ (27)
Non-U.S.	377	318	383
	\$ 277	\$ 275	\$ 356
Discontinued operations	2018	2017	2016
U.S.	\$ —	\$ —	\$ —

Non-U.S.	113	(3)	(7)
	\$ 113	\$ (3)	\$ (7)

The provision (benefit) for income taxes consists of the following:

	2018	2017	2016
Current:			
U.S.	\$ 8	\$ (5)	\$ —
Non-U.S.	109	87	123
	117	82	123
Deferred:			
U.S.	—	6	3

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Non-U.S.	(9)	(18)	(7)
	(9)	(12)	(4)
Total:			
U.S.	8	1	3
Non-U.S.	100	69	116
Total for continuing operations	108	70	119
Total for discontinued operations	—	—	—
	\$ 108	\$ 70	\$ 119

A reconciliation of the provision for income taxes based on the statutory U.S. Federal tax rate of 21% for 2018 and 35% for 2017 and 2016 to the provision for income taxes is as follows:

	2018	2017	2016
Tax provision on pretax earnings from continuing operations at statutory U.S. Federal tax rate	\$ 58	\$ 96	\$ 124
Increase (decrease) in provision for income taxes due to:			
Non-U.S. tax rates	25	(29)	(22)
Global intangible low taxed income	32		
U.S. Tax Cuts and Jobs Act: transition tax, net of foreign tax credits	(2)	2	
Tax law changes	4	152	(3)
Change in valuation allowance: U.S. tax law change	(2)	(162)	
Change in valuation allowance: other	(18)	(283)	3
Tax attribute expiration	6	330	
Withholding tax	10	8	7
Non-deductible expenses	4	9	20
U.S. tax on intercompany dividends and interest	1	2	3
Tax exempt income	(2)	(3)	(2)
Intraperiod tax allocation			(8)
Tax credits and incentives	(23)	(37)	(19)
Changes in tax reserves	13	(18)	8
Mexico inflationary adjustments	8	13	6
Equity earnings	(13)	(13)	(9)
Intercompany financing	1	(4)	(5)
Other taxes based on income	7	10	11
Other items	(1)	(3)	5
Provision for income taxes	\$ 108	\$ 70	\$ 119

Deferred income taxes reflect: (1) the net tax effects of temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and their relevant tax basis; and (2) carryovers and credits for income tax purposes.

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Significant components of the Company's deferred tax assets and liabilities at December 31, 2018 and 2017 are as follows:

	2018	2017
Deferred tax assets:		
Accrued postretirement benefits	\$ 38	\$ 44
Asbestos-related liabilities	127	122
Foreign tax credit carryovers	96	124
Operating and capital loss carryovers	286	342
Other credit carryovers	18	17
Accrued liabilities	65	69
Pension liabilities	92	77
Other	57	41
Total deferred tax assets	779	836
Deferred tax liabilities:		
Property, plant and equipment	97	101
Intangibles and deferred software	92	97
Total deferred tax liabilities	189	198
Valuation allowance	(495)	(543)
Net deferred taxes	\$ 95	\$ 95

Deferred taxes are included in the Consolidated Balance Sheets at December 31, 2018 and 2017 as follows:

	2018	2017
Other assets	\$ 191	\$ 194
Deferred taxes	(96)	(99)
Net deferred taxes	\$ 95	\$ 95

The deferred tax benefit associated with the reduction in the valuation allowance of \$48 million was primarily allocated \$41 million to income from continuing operations due to the primacy of continuing operations, changes in tax law and expiration of certain tax attribute carryovers, and \$7 million to other comprehensive income.

Deferred tax assets and liabilities are determined separately for each tax jurisdiction on a separate or on a consolidated tax filing basis, as applicable, in which the Company conducts its operations or otherwise incurs taxable income or losses. A valuation allowance is recorded when it is more likely than not that some portion or all of the gross deferred tax assets will not be realized. The realization of deferred tax assets depends on the ability to generate sufficient taxable income of the appropriate character within the carryback or carryforward periods provided for in the tax law for each applicable tax jurisdiction. The Company considers the following possible sources of taxable income when assessing the realization of deferred tax assets:

- taxable income in prior carryback years;
- future reversals of existing taxable temporary differences;
- future taxable income exclusive of reversing temporary differences and carryforwards; and
- prudent and feasible tax planning strategies that the Company would be willing to undertake to prevent a deferred tax asset from otherwise expiring.

The assessment regarding whether a valuation allowance is required or whether a change in judgment regarding the valuation allowance has occurred also considers all available positive and negative evidence, including but not limited to:

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- nature, frequency, and severity of cumulative losses in recent years;
- duration of statutory carryforward and carryback periods;
- statutory limitations against utilization of tax attribute carryforwards against taxable income;
- historical experience with tax attributes expiring unused; and
- near and medium term financial outlook.

The weight given to the positive and negative evidence is commensurate with the extent to which the evidence may be objectively verified. Accordingly, it is generally difficult to conclude a valuation allowance is not required when there is significant objective and verifiable negative evidence, such as cumulative losses in recent years. The Company uses the actual results for the last two years and current year results as the primary measure of cumulative losses in recent years.

The evaluation of deferred tax assets requires judgment in assessing the likely future tax consequences of events recognized in the financial statements or tax returns and future profitability. The recognition of deferred tax assets represents the Company's best estimate of those future events. Changes in the current estimates, due to unanticipated events or otherwise, could have a material effect on the Company's results of operations and financial condition.

In certain tax jurisdictions, the Company's analysis indicates that it has cumulative losses in recent years. This is considered significant negative evidence which is objective and verifiable and, therefore, difficult to overcome. However, the cumulative loss position is not solely determinative and, accordingly, the Company considers all other available positive and negative evidence in its analysis. Based on its analysis, the Company has recorded a valuation allowance for the portion of deferred tax assets where based on the weight of available evidence it is unlikely to realize those deferred tax assets.

Based on the evidence available including a lack of sustainable earnings, the Company in its judgment previously recorded a valuation allowance against substantially all of its net deferred tax assets in the United States. If a change in judgment regarding this valuation allowance were to occur in the future, the Company will record a potentially material deferred tax benefit, which could result in a favorable impact on the effective tax rate in that period.

The U.S. Tax Cuts and Jobs Act ("Act") was enacted on December 22, 2017. The Act reduced the U.S. federal corporate tax rate to 21% from 35%, required companies to pay a one-time transition tax on earnings of certain foreign subsidiaries that were previously tax deferred and created new taxes on certain foreign sourced earnings. In 2017 and the first nine months of 2018, the Company recorded provisional amounts for certain enactment-date effects of the Act by applying the guidance in SAB 118 because the Company had not yet completed its enactment-date accounting for these effects. At December 31, 2018, the Company has now completed its accounting for all of the enactment-date income tax effects of the Act. At December 31, 2017, the Company originally recorded a provisional amount for its one-time transition tax of \$331 million, which was expected to be substantially offset by available foreign tax credits resulting in a provisional net tax expense of \$2 million, primarily attributable to state taxes. Upon further analyses of certain aspects of the Act and refinement of its calculations during 2018, the Company decreased its provisional amount of transition tax by \$17 million, to \$314 million. This resulted in no change to U.S. federal income tax expense due to the impact of foreign tax credits. In addition, the provisional net tax expense, which was estimated at approximately \$2 million, primarily attributable to state taxes, was substantially eliminated. The Company recognized this favorable adjustment of \$2 million as a component of income tax expense from continuing operations.

As of December 31, 2017, the Company remeasured certain deferred tax assets and liabilities based on the rates at which they were expected to reverse in the future (which was generally 21%) and based on the expected future benefit

to be realized as a result of changes to the tax base provided in the Act. The Company recorded a

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provisional net tax charge of \$162 million related to the remeasurement of net deferred tax assets, which was fully offset by an adjustment to valuation allowance. Upon further analysis of certain aspects of the Act and refinement of its calculations during 2018, the Company adjusted its provisional amount by \$2 million, which is fully offset by an adjustment to valuation allowance. Additionally, as of December 31, 2017, the Company recorded a provisional deferred tax benefit of \$11 million for the reduction of a deferred tax liability related to an indefinite lived intangible asset. No adjustment was made to this provisional amount.

At December 31, 2018, before valuation allowance, the Company had unused foreign tax credits of \$96 million expiring in 2020 through 2027 and research tax credits of \$17 million expiring from 2019 to 2037. Approximately \$146 million of the deferred tax assets related to operating and capital loss carryforwards can be carried over indefinitely, with the remaining \$140 million expiring between 2019 and 2038. Approximately \$14 million of other deferred tax assets are related to interest carryforwards that can be carried over indefinitely.

As a result of the Act, in 2018, the Company has had a change in judgement regarding the gross book-tax basis differences in its non-U.S. consolidated subsidiaries. Since a majority of the pre-2018 non-U.S. earnings (net of losses) were substantially taxed under the Act, distributions of those net earnings no longer attract significant U.S. income taxes except for any associated currency gains. Therefore, the Company does not assert that these net earnings (to the extent of foreign distributable reserves) and any associated gross book-tax basis differences, if any, are indefinitely reinvested. For all remaining gross book-tax basis differences in its non-U.S. consolidated subsidiaries, the Company maintains its assertion that it intends these to be indefinitely reinvested. The Company also records deferred foreign taxes on gross book-tax basis differences to the extent of foreign distributable reserves for certain foreign subsidiaries. Determining the amount of unrecognized deferred tax liability related to any remaining undistributed foreign earnings is not practicable.

The Company records a liability for unrecognized tax benefits related to uncertain tax positions. The Company accrues interest and penalties associated with unrecognized tax benefits as a component of its income tax expense.

The following is a reconciliation of the Company's total gross unrecognized tax benefits for the years ended December 31, 2018, 2017, and 2016:

	2018	2017	2016
Balance at January 1	\$ 79	\$ 74	\$ 74
Additions and reductions for tax positions of prior years	(4)	1	
Additions based on tax positions related to the current year	15	17	15
Reductions due to the lapse of the applicable statute of limitations		(7)	(3)
Reductions due to settlements		(9)	(12)
Foreign currency translation	(3)	3	
Balance at December 31	\$ 87	\$ 79	\$ 74
Unrecognized tax benefits, which if recognized, would impact the Company's effective income tax rate	\$ 78	\$ 72	\$ 66
Accrued interest and penalties at December 31	\$ 10	\$ 8	\$ 23
Interest and penalties included in tax expense for the years ended December 31	\$ 2	\$ (15)	\$ (2)

Based upon the outcome of tax examinations, judicial proceedings, or expiration of statute of limitations, it is reasonably possible that the ultimate resolution of these unrecognized tax benefits may result in a payment that is materially different from the current estimate of the tax liabilities. The Company believes that it is reasonably possible that the estimated liability could decrease up to \$8 million within the next 12 months. This is primarily the result of anticipated audit settlements or statute expirations in several taxing jurisdictions.

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The Company is currently under income tax examination in various tax jurisdictions in which it operates, including Bolivia, Brazil, Canada, Colombia, France, Germany, Indonesia and Italy. The years under examination range from 2004 through 2017. The Company has received tax assessments in excess of established reserves. The Company is contesting these tax assessments, and will continue to do so, including pursuing all available remedies such as appeals and litigation, if necessary.

The Company believes that adequate provisions for all income tax uncertainties have been made. However, if tax assessments are settled against the Company at amounts in excess of established reserves, it could have a material impact to the Company's results of operations, financial position or cash flows. During 2018, the Company concluded income tax audits in several jurisdictions, including Czech Republic, France, Germany and Indonesia.

12. Debt

The following table summarizes the long-term debt of the Company at December 31, 2018 and 2017:

	2018	2017
Secured Credit Agreement:		
Revolving Credit Facility:		
Revolving Loans	\$ —	\$ —
Term Loans:		
Term Loan A	897	
Previous Secured Credit Agreement:		
Revolving Credit Facility:		
Revolving Loans		
Term Loans:		
Term Loan A		1,148
Other secured debt	404	
Senior Notes:		
6.75%, due 2020 (€500 million)	570	594
4.875%, due 2021 (€330 million)	376	392
5.00%, due 2022	497	496
4.00%, due 2023	306	305
5.875%, due 2023	688	685
3.125%, due 2024 (€725 million)	825	849
6.375%, due 2025	295	295
5.375%, due 2025	297	297
Capital leases	45	54
Other	14	17
Total long-term debt	5,214	5,132
Less amounts due within one year	33	11
Long-term debt	\$ 5,181	\$ 5,121

On June 27, 2018, certain of the Company's subsidiaries entered into a new Senior Secured Credit Facility (the "Agreement"), which amended and restated the previous credit agreement (the "Previous Agreement"). The proceeds from the Agreement were used to repay all outstanding amounts under the Previous Agreement. The Company recorded \$11 million of additional interest charges for the write-off of unamortized fees during 2018.

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The Agreement provides for up to \$1.91 billion of borrowings pursuant to term loans and revolving credit facilities. The term loans mature, and the revolving credit facilities terminate, in June 2023. At December 31, 2018, the Agreement includes a \$300 million revolving credit facility, a \$700 million multicurrency revolving credit facility, and a \$910 million term loan A facility (\$897 million net of debt issuance costs). At December 31, 2018, the Company had unused credit of \$988 million available under the Agreement. The weighted average interest rate on borrowings outstanding under the Agreement at December 31, 2018 was 3.97%.

The Agreement contains various covenants that restrict, among other things and subject to certain exceptions, the ability of the Company to incur certain indebtedness and liens, make certain investments, become liable under contingent obligations in certain defined instances only, make restricted payments, make certain asset sales within guidelines and limits, engage in certain affiliate transactions, participate in sale and leaseback financing arrangements, alter its fundamental business, and amend certain subordinated debt obligations.

The Agreement also contains one financial maintenance covenant, a Total Leverage Ratio (the “Leverage Ratio”), that requires the Company not to exceed a ratio of 4.5x calculated by dividing consolidated total debt, less cash and cash equivalents, by Consolidated EBITDA, as defined in the Agreement. The maximum Leverage Ratio is subject to an increase of 0.5x for (i) any fiscal quarter during which certain qualifying acquisitions (as specified in the Agreement) are consummated and (ii) the following three fiscal quarters. The Leverage Ratio could restrict the ability of the Company to undertake additional financing or acquisitions to the extent that such financing or acquisitions would cause the Leverage Ratio to exceed the specified maximum.

Failure to comply with these covenants and other customary restrictions could result in an event of default under the Agreement. In such an event, the Company could not request borrowings under the revolving facilities, and all amounts outstanding under the Agreement, together with accrued interest, could then be declared immediately due and payable. Upon the occurrence and for the duration of a payment event of default, an additional default interest rate equal to 2.0% per annum will apply to all overdue obligations under the Agreement. If an event of default occurs under the Agreement and the lenders cause all of the outstanding debt obligations under the Agreement to become due and payable, this would result in a default under a number of other outstanding debt securities and could lead to an acceleration of obligations related to these debt securities. As of December 31, 2018, the Company was in compliance with all covenants and restrictions in the Agreement. In addition, the Company believes that it will remain in compliance and that its ability to borrow funds under the Agreement will not be adversely affected by the covenants and restrictions.

The Leverage Ratio also determines pricing under the Agreement. The interest rate on borrowings under the Agreement is, at the Company’s option, the Base Rate or the Eurocurrency Rate, as defined in the Agreement, plus an applicable margin. The applicable margin is linked to the Leverage Ratio. The margins range from 1.00% to 1.50% for Eurocurrency Rate loans and from 0.00% to 0.50% for Base Rate Loans. In addition, a commitment fee is payable on the unused revolving credit facility commitments ranging from 0.20% to 0.30% per annum linked to the Leverage Ratio.

Obligations under the Agreement are secured by substantially all of the assets, excluding real estate and certain other excluded assets, of certain of the Company’s domestic subsidiaries and certain foreign subsidiaries. Such obligations are also secured by a pledge of intercompany debt and equity investments in certain of the Company’s domestic subsidiaries and, in the case of foreign obligations, of stock of certain foreign subsidiaries. All obligations under the Agreement are guaranteed by certain domestic subsidiaries of the Company, and certain foreign obligations under the

Agreement are guaranteed by certain foreign subsidiaries of the Company.

In March 2017, the Company expanded its borrowings under the Senior Notes due 2024 by issuing €225 million of additional notes that bear interest at 3.125% and are due November 15, 2024. The notes were issued via a private placement and are guaranteed by certain of the Company's domestic subsidiaries. The net proceeds, after deducting debt issuance costs, totaled approximately \$237 million and were used to repay a portion of the Company's revolving credit facility.

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During March 2017, the Company purchased in a tender offer approximately \$228 million aggregate principal amount of its 7.80% Senior Debentures due in 2018. In November 2017, the remaining \$22 million of the 7.80% Senior Debentures were repurchased by the Company, the indenture relating thereto was discharged, and all collateral and guarantees thereunder were released. The Company recorded \$18 million of additional interest charges for note repurchase premiums and the write-off of unamortized finance fees related to these actions.

During December 2017, the Company issued senior notes with a face value of \$310 million that bear interest at 4.00% and are due March 15, 2023. The notes were issued via a private placement and are guaranteed by certain of the Company's domestic subsidiaries. The net proceeds, after deducting debt issuance costs, totaled approximately \$305 million and were used to repay a portion of the term loan A facility under the Previous Agreement.

In the third quarter of 2018, the Company terminated a €185 million European accounts receivable securitization program.

In order to maintain a capital structure containing appropriate amounts of fixed and floating-rate debt, the Company has entered into a series of interest rate swap agreements. These interest rate swap agreements were accounted for as either fair value hedges or cash flow hedges (see Note 8 for more information).

The Company assesses its capital raising and refinancing needs on an ongoing basis and may enter into additional credit facilities and seek to issue equity and/or debt securities in the domestic and international capital markets if market conditions are favorable. Also, depending on market conditions, the Company may elect to repurchase portions of its debt securities in the open market.

Annual maturities for all of the Company's long-term debt through 2023 and thereafter are as follows: 2019, \$33 million; 2020, \$1,018 million; 2021, \$431 million; 2022, \$549 million; 2023, \$1,749 million; and 2024 and thereafter \$1,434 million.

The carrying amounts reported for certain long-term debt obligations subject to frequently redetermined interest rates, approximate fair value. Fair values for the Company's significant fixed rate debt obligations are based on published market quotations, and are classified as Level 1 in the fair value hierarchy. Fair values at December 31, 2018, of the Company's significant fixed rate debt obligations are as follows:

	Principal Amount	Indicated Market Price	Fair Value
Senior Notes:			
6.75%, due 2020 (€500 million)	\$ 571	\$ 108.96	\$ 622
4.875%, due 2021 (€330 million)	377	107.28	404
5.00%, due 2022	500	99.46	497
5.875%, due 2023	700	102.02	714
4.00%, due 2023	310	94.12	292
3.125%, due 2024 (€725 million)	828	98.88	819
6.375%, due 2025	300	100.99	303

5.375%, due 2025

300

97.08

291

13. Contingencies

Asbestos

From 1948 to 1958, one of the Company's former business units commercially produced and sold approximately \$40 million of a high-temperature, calcium-silicate based pipe and block insulation material containing asbestos. The Company sold its insulation business unit in April 1958. The Company receives claims from individuals alleging bodily injury and death as a result of exposure to asbestos from this product (“Asbestos

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Claims”). Some Asbestos Claims are brought as personal injury lawsuits that typically allege various theories of liability, including negligence, gross negligence and strict liability and seek compensatory and, in some cases, punitive damages.

Predominantly, however, Asbestos Claims are presented to the Company under administrative claims-handling agreements, which the Company has in place with many plaintiffs’ counsel throughout the country (“Administrative Claims”). Administrative Claims require evaluation and negotiation regarding whether particular claimants qualify under the criteria established by the related claims-handling agreements. The criteria for Administrative Claims include verification of a compensable illness and a reasonable probability of exposure to a product manufactured by the Company’s former business unit during its manufacturing period ending in 1958. Plaintiffs’ counsel present, and the Company negotiates, Administrative Claims under these various agreements in differing quantities, at different times, and under a variety of conditions.

The following table shows the approximate number of plaintiffs who had asbestos lawsuits pending against the Company at the beginning of each listed year, the number of Asbestos Claims administratively presented or filed in the tort system, the number of Asbestos Claims disposed of during that year, and the number of lawsuits pending at the end of each listed year (eliminating duplicate filings):

	2018	2017	2016
Pending at beginning of year	1,330	1,400	2,080
Disposed	1,220	1,320	1,750
Filed	960	1,250	1,070
Pending at end of year	1,070	1,330	1,400

The pending lawsuit figures do not include an estimate of potential Administrative Claims that may be presented under a claims-handling agreement due to the uncertainties around presentation timing, quantities, or qualification rates. The Company considers Administrative Claims to be “Filed” and “Disposed” when they are accepted for payment.

The lack of uniform rules in lawsuit pleading practice, technical pleading requirement in some jurisdictions, local rules, and other factors cause considerable variation in the specific amounts of monetary damages asserted. In the Company’s experience, the monetary relief alleged in a lawsuit bears little relationship to an Asbestos Claim’s merits or its disposition value. Rather, several variables, including but not limited to, the type and severity of the asbestos disease, medical history, and exposure to other disease-causing agents; the product identification evidence against the Company and other co-defendants; the defenses available to the Company and other co-defendants; the specific jurisdiction in which the claim is made; the applicable law; and the law firm representing the claimant, affect the value.

The Company has also been a defendant in other Asbestos Claims involving maritime workers, medical monitoring, co-defendants’ third-party actions, and property damage allegations. Based upon its experience, the Company believes that these categories of Asbestos Claims will not involve any material liability. Therefore, they are not included in the description of pending or disposed matters.

Since receiving its first Asbestos Claim, as of December 31, 2018, the Company in the aggregate has disposed of approximately 400,000 Asbestos Claims at an average indemnity payment of approximately \$9,800 per claim. The Company’s asbestos indemnity payments have varied on a per-claim basis and are expected to continue to vary

considerably over time. Asbestos-related cash payments for 2018, 2017, and 2016 were \$105 million, \$110 million, and \$125 million, respectively. The Company's cash payments per claim disposed (inclusive of legal costs) were approximately \$86,000, \$83,000 and \$71,000 for the years ended December 31, 2018, 2017, and 2016, respectively.

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The Company's objective is to achieve, where possible, resolution of Asbestos Claims pursuant to claims-handling agreements. Failure of claimants to meet certain medical and product exposure criteria in claims-handling agreements generally has reduced the number of claims that would otherwise have been received by the Company in the tort system. In addition, changes in jurisdictional dynamics, legislative acts, asbestos docket management and procedures, the substantive law, the co-defendant pool, and other external factors have affected lawsuit volume, claim volume, qualification rates, claim values, and related matters. Collectively, these variables generally have had the effect of increasing the Company's per-claim average indemnity payment over time.

Beginning with the initial liability of \$975 million established in 1993, the Company has accrued a total of approximately \$5.0 billion through 2018, before insurance recoveries, for its asbestos-related liability. The Company's estimates of its liability have been significantly affected by, among other factors, the volatility of asbestos-related litigation in the United States, the significant number of co-defendants that have filed for bankruptcy, changes in mortality rates, the inherent uncertainty of future disease incidence and claiming patterns against the Company, the significant expansion of the types of defendants that are now sued in this litigation, and the continuing changes in the extent to which these defendants participate in the resolution of cases in which the Company is also a defendant.

The Company continues to monitor trends that may affect its ultimate liability and analyze the developments and variables likely to affect the resolution of Asbestos Claims against the Company. The material components of the Company's total accrued liability are determined by the Company in connection with its annual comprehensive legal review and consist of the following estimates, to the extent it is probable that such liabilities have been incurred and can be reasonably estimated: (i) the liability for Asbestos Claims already asserted against the Company; (ii) the liability for Asbestos Claims not yet asserted against the Company; and (iii) the legal defense costs estimated to be incurred in connection with the Asbestos Claims already asserted and those Asbestos Claims the Company believes will be asserted.

The Company conducts an annual comprehensive legal review of its asbestos-related liabilities and costs in connection with finalizing and reporting its annual results of operations, unless significant changes in trends or new developments warrant an earlier review. As part of its annual comprehensive legal review, the Company provides historical Asbestos Claims' data to a third party with expertise in determining the impact of disease incidence and mortality on future filing trends to develop information to assist the Company in estimating the total number of future Asbestos Claims likely to be asserted against the Company. The Company uses this estimate, along with an estimation of disposition costs and related legal costs, as inputs to develop its best estimate of its total probable liability. If the results of the annual comprehensive legal review indicate that the existing amount of the accrued liability is lower (higher) than its reasonably estimable asbestos-related costs, then the Company will record an appropriate charge (credit) to the Company's results of operations to increase (decrease) the accrued liability.

The significant assumptions underlying the material components of the Company's accrual are:

a) settlements will continue to be limited almost exclusively to claimants who were exposed to the Company's asbestos containing insulation prior to its exit from that business in 1958;

b) Asbestos Claims will continue to be resolved primarily under the Company's administrative claims-handling agreements or on terms comparable to those set forth in those agreements;

- c)the incidence of serious asbestos-related disease cases and claiming patterns against the Company for such cases do not change materially;
- d)the Company is substantially able to defend itself successfully at trial and on appeal;
- e)the number and timing of additional co-defendant bankruptcies do not change significantly the assets available to participate in the resolution of cases in which the Company is a defendant; and

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f)co-defendants with substantial resources and assets continue to participate significantly in the resolution of future Asbestos Claims.

For the years ended December 31, 2018 and 2017, the Company concluded that accruals in the amounts of \$602 million and \$582 million, respectively, were required. These amounts have not been discounted for the time value of money. The Company's comprehensive legal reviews resulted in charges of \$125 million, \$0 million and \$0 million for the years ended December 31, 2018, 2017 and 2016, respectively. As previously disclosed, the Company anticipated that adjustments to its asbestos-related accruals were possible given the inherent uncertainties involved in asbestos litigation. In the fourth quarter of 2018, the Company determined that it was advantageous to accelerate the disposition of certain claims in light of additional information the Company obtained about higher estimated future claim volumes and values in certain of the affected discrete streams of potential liability. Factors impacting the increased likelihood of these additional losses included changes in the law, procedure, the expansion of judicial resources in certain jurisdictions, and renewed attention to dockets of non-mesothelioma cases. The Company also obtained new information about other Asbestos Claims, which had the effect of reducing its asbestos-related liability. The combined effect of these items resulted in a change in estimate of the Company's asbestos-related liability.

The Company believes that it is reasonably possible that it will incur a loss for its asbestos-related liabilities in excess of the amount currently recognized, which was \$602 million as of December 31, 2018. The Company estimated that reasonably possible losses could result in asbestos-related liabilities of approximately \$722 million. This estimate of additional reasonably possible loss reflects a qualitative judgment regarding the nature of contingencies that could impact future Asbestos Claims and legal costs, which include, but are not limited to, successful attempts by plaintiffs to challenge existing legal barriers to entry, enact plaintiff-oriented procedural rules or liability or damage-related legislation, establish new theories of liability, revive long-dormant inventories of non-mesothelioma cases, or leverage changing jurisdictional dynamics and a changing litigation environment to increase the volume of Asbestos Claims presented or per-claim indemnity values. However, it is also possible that the ultimate amount of asbestos-related liabilities could be above this estimate.

The Company expects a significant majority of the total number of Asbestos Claims to be received in the next five to seven years. This timeframe appropriately reflects the mortality of current and expected claimants in light of the Company's sale of its insulation business unit in 1958. The Company may continue to experience increased year-over-year variability with regard to the annual quantity of Asbestos Claims presented to and disposed by the Company. This increased variability, jurisdictional dynamics, a changing litigation environment, the size of the remaining pool of claimants, and the expected increase in mortality over the next five to seven years may present the Company with further opportunities to accelerate disposition of discrete parts of its claimant pool. These influences may create increased variability in the annual cash payments year-over-year.

The Company's asbestos-related liability is based on a projection of new Asbestos Claims that will eventually be filed against the Company and the estimated average disposition cost of these claims and related legal costs. Changes in these projections, and estimates, as well as changes in the significant assumptions noted above, have the potential to significantly impact the estimation of the Company's asbestos-related liability.

Other Matters

On July 5, 2016, the Company learned that the Enforcement Division of the Securities and Exchange Commission ("SEC") was conducting an investigation into certain accounting and control matters pertaining to the Company's

determination of its asbestos-related liabilities. On May 13, 2016, the Company restated its consolidated financial statements for the years ended December 31, 2015, 2014 and 2013 in order to correct an error related to the Company's method for estimating its future asbestos-related liabilities. On May 11, 2018, the SEC informed the Company that it had concluded its investigation, and, based on the information the SEC had as of that date, it did not intend to recommend an enforcement action against the Company.

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Other litigation is pending against the Company, in some cases involving ordinary and routine claims incidental to the business of the Company and in others presenting allegations that are non-routine and involve compensatory, punitive or treble damage claims as well as other types of relief. The Company records a liability for such matters when it is both probable that the liability has been incurred and the amount of the liability can be reasonably estimated. Recorded amounts are reviewed and adjusted to reflect changes in the factors upon which the estimates are based, including additional information, negotiations, settlements and other events.

14. Accumulated Other Comprehensive Income (Loss)

The components of comprehensive income are: (a) net earnings; (b) change in fair value of certain derivative instruments; (c) pension and other postretirement benefit adjustments; and (d) foreign currency translation adjustments. The net effect of exchange rate fluctuations generally reflects changes in the relative strength of the U.S. dollar against major foreign currencies between the beginning and end of the year.

The following table lists the beginning balance, annual activity and ending balance of each component of accumulated other comprehensive income (loss):

	Net Effect of Exchange Rate Fluctuations	Change in Certain Derivative Instruments	Employee Benefit Plans	Total Accumulated Other Comprehensive Income (Loss)
Balance on January 1, 2017	\$ (788)	\$ (4)	\$ (1,380)	\$ (2,172)
Change before reclassifications	65	(3)	(8)	54
Amounts reclassified from accumulated other comprehensive income		(6)	285	279
Translation effect			32	32
Tax effect		1	(20)	(19)
Other comprehensive income (loss) attributable to the Company	65	(8)	289	346
Balance on December 31, 2017	(723)	(12)	(1,091)	(1,826)
Change before reclassifications	(166)	(4)	(114)	(284)
Amounts reclassified from accumulated other comprehensive income		(1)	131	130
Translation effect		(1)	16	15
Tax effect			(3)	(3)
Other comprehensive income (loss) attributable to the Company	(166)	(6)	30	(142)
Balance on December 31, 2018	\$ (889)	\$ (18)	\$ (1,061)	\$ (1,968)

(a) Amount is included in Cost of goods sold on the Consolidated Results of Operations (see Note 8 for additional information).

- (b) Amount is included in the computation of net periodic pension cost and net postretirement benefit cost (see Note 10 for additional information).

15. Stock Based Compensation

The Company has various nonqualified plans approved by share owners under which it has granted stock options, restricted shares and performance vested restricted share units. Starting with the 2017 equity awards, the Company has allocated these awards solely in the form of restricted shares and performance vested restricted share units. As such, the Company's annual compensation expense related to stock option awards is immaterial.

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At December 31, 2018, there were 3,547,267 shares available for grants under these plans. Total compensation cost for all grants of shares and units under these plans was \$27 million, \$18 million and \$11 million for the years ended December 31, 2018, 2017, and 2016, respectively.

Restricted Shares and Restricted Share Units

Restricted share units granted to employees vest 25% per year beginning on the first anniversary. Granted but unvested restricted share units are forfeited upon termination, unless certain retirement criteria are met. Holders of vested restricted share units receive one share of the Company's common stock for each unit as units vest. Restricted share units granted to directors vest after one year.

The fair value of the restricted shares and restricted share units is equal to the market price of the Company's common stock on the date of the grant. The fair value of restricted shares and restricted share units, is amortized over the vesting periods which range from one to four years.

The activity of restricted shares and restricted share units is as follows:

	Number of Restricted Shares (thousands)	Weighted Average Grant-Date Fair Value (per share)
Nonvested at January 1, 2018	1,108	\$ 19.39
Granted	579	21.64
Vested	(492)	19.73
Forfeited	(116)	29.90
Nonvested at December 31, 2018	1,079	20.29
Awards granted during 2017		\$ 20.01
Awards granted during 2016		\$ 15.70

	2018	2017	2016
Total fair value of shares vested	\$ 10	\$ 5	\$ 6

Performance Vested Restricted Share Units

Performance vested restricted share units vest on January 1 of the third year following the year in which they are granted. Holders of vested units may receive up to two shares of the Company's common stock for each unit, depending upon the attainment of consolidated performance goals established by the Compensation Committee of the Company's Board of Directors. If minimum goals are not met, no shares will be issued. Granted but unvested restricted share units are forfeited upon termination of employment, unless certain retirement criteria are met.

The fair value of each performance vested restricted share unit is equal to the product of the fair value of the Company's common stock on the date of grant and the estimated number of shares into which the performance vested

restricted share unit will be converted. The fair value of performance vested restricted share units is amortized ratably over the vesting period. Should the estimated number of shares into which the performance vested restricted share unit will be converted change, an adjustment will be recorded to recognize the accumulated difference in amortization between the revised and previous estimates.

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Owens Illinois, Inc.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

Tabular data dollars in millions

Performance vested restricted share unit activity is as follows:

	Number of Performance Vested Restricted Shares Units (thousands)	Weighted Average Grant-Date Fair Value (per unit)
Nonvested at January 1, 2018	1,594	\$ 18.66
Granted	501	22.05
Vested	(375)	23.58
Forfeited/Cancelled	(88)	20.33
Nonvested at December 31, 2018	1,632	18.48
Awards granted during 2017		\$ 19.57
Awards granted during 2016		\$ 15.10

Approximately 501,000 shares were issued in 2018 with a fair value at issuance date of \$9 million related to performance vested restricted share units.

As of December 31, 2018, there was \$19 million of total unrecognized compensation cost related to all unvested stock options, restricted shares, restricted share units and performance vested restricted share units. That cost is expected to be recognized over a weighted average period of approximately two years.

16. Other Expense, net

Other expense, net for the years ended December 31, 2018, 2017, and 2016 included the following:

	2018	2017	2016
Restructuring, asset impairment and other charges	\$ 97	\$ 77	\$ 104
Charge for asbestos-related costs	125		
Pension settlement charges	74	218	98
Intangible amortization expense	40	41	39
Impairment of equity investment			25
Gain on China land compensation			(71)
Royalty income	(13)	(11)	(13)
Foreign currency exchange loss	6	5	6
Non-income tax gain	(19)		
Other income (including gains on asset sales), net	(41)	(7)	(14)
	\$ 269	\$ 323	\$ 174

In 2018, other income, net includes a gain realized on a sale of an asset in Europe (approximately \$11 million) and gains recorded on insurance proceeds in the Americas (approximately \$11 million).

In 2016, the Company evaluated the future estimated earnings and cash flow of an equity investment and determined that it was other-than-temporarily impaired. As such, the Company recorded an impairment charge of \$25 million to reduce its carrying value down to its estimated fair value. The Company classified the significant assumptions used to determine the fair value of the impaired assets as Level 3 in the fair value hierarchy.

17. Operating Leases

Rent expense attributable to all warehouse, office buildings and equipment operating leases was \$91 million in 2018, \$91 million in 2017, and \$80 million in 2016. Minimum future rentals under operating leases are as follows: 2019, \$69 million; 2020, \$53 million; 2021, \$41 million; 2022, \$36 million; 2023, \$29 million; and 2024 and thereafter, \$40 million.

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Owens Illinois, Inc.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

Tabular data dollars in millions

18. Earnings Per Share

The following table sets forth the computation of basic and diluted earnings per share:

	2018	2017	2016
Numerator:			
Net earnings attributable to the Company	\$ 257	\$ 180	\$ 209
Denominator (in thousands):			
Denominator for basic earnings per share-weighted average shares outstanding	160,125	162,737	161,857
Effect of dilutive securities:			
Stock options and other	1,963	1,910	968
Denominator for diluted earnings per share-adjusted weighted average shares outstanding	162,088	164,647	162,825
Basic earnings per share:			
Earnings from continuing operations	\$ 0.90	\$ 1.12	\$ 1.33
Gain (loss) from discontinued operations	0.71	(0.01)	(0.04)
Net earnings	\$ 1.61	\$ 1.11	\$ 1.29
Diluted earnings per share:			
Earnings from continuing operations	\$ 0.89	\$ 1.11	\$ 1.32
Gain (loss) from discontinued operations	0.70	(0.01)	(0.04)
Net earnings	\$ 1.59	\$ 1.10	\$ 1.28

Options to purchase 1,726,275, 1,522,928 and 2,770,458 weighted average shares of common stock which were outstanding during 2018, 2017, and 2016, respectively, were not included in the computation of diluted earnings per share because the options' exercise price was greater than the average market price of the common shares.

19. Supplemental Cash Flow Information

Changes in the components of working capital related to operations (net of the effects related to acquisitions and divestitures) were as follows:

	2018	2017	2016
Decrease (increase) in current assets:			
Receivables	\$ 43	\$ (37)	\$ (32)
Inventories	(29)	2	16
Prepaid expenses and other	(58)	(10)	145
Increase (decrease) in current liabilities:			
Accounts payable	67	69	(58)
Accrued liabilities	(16)	(49)	(31)
Salaries and wages	(1)	(21)	32

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U.S. and foreign income taxes	9	(43)	18
	\$ 15	\$ (89)	\$ 90

The Company uses various factoring programs to sell certain receivables to financial institutions as part of managing its cash flows. At December 31, 2018 and 2017, the amount of receivables sold by the Company was \$600 million and \$454 million, respectively. Any continuing involvement with the sold receivables is immaterial.

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Owens Illinois, Inc.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

Tabular data dollars in millions

Income taxes paid in cash were as follows:

	2018	2017	2016
U.S.	\$ 11	\$ 4	\$ —
Non-U.S.	97	127	99
Total income taxes paid in cash	\$ 108	\$ 131	\$ 99

Interest paid in cash, including note repurchase premiums, for the years ended December 31, 2018, 2017 and 2016 was \$236 million, \$261 million and \$261 million, respectively. Cash interest for the years ended December 31, 2018, 2017 and 2016 included \$0 million, \$18 million and \$9 million of note repurchase premiums, respectively.

20. Discontinued Operations

On December 6, 2018, an ad hoc committee for the World Bank's International Centre for Settlement of Investment Disputes ("ICSID") rejected the request by the Bolivarian Republic of Venezuela ("Venezuela") to annul the award issued by an ICSID tribunal in favor of OI European Group B.V. ("OIEG") related to the 2010 expropriation of OIEG's majority interest in two plants in Venezuela (the "Award"). The annulment proceeding with respect to the Award is now concluded.

On July 31, 2017, OIEG sold its right, title and interest in amounts due under the Award to an Ireland-domiciled investment fund. Under the terms of the sale, OIEG received a payment, in cash, at closing equal to \$115 million (the "Cash Payment"). OIEG may also receive additional payments in the future ("Deferred Amounts") calculated based on the total compensation that is received from Venezuela as a result of collection efforts or as settlement of the Award with Venezuela. OIEG's right to receive any Deferred Amounts is subject to the limitations described below.

OIEG's interest in any amounts received in the future from Venezuela in respect of the Award is limited to a percentage of such recovery after taking into account reimbursement of the Cash Payment to the purchaser and reimbursement of legal fees and expenses incurred by the Company and the purchaser. OIEG's percentage of such recovery will also be reduced over time. Because the Award has yet to be satisfied and the ability to successfully enforce the Award in countries that are party to the ICSID Convention is subject to significant challenges, the Company is unable to reasonably predict the amount of recoveries from the Award, if any, to which the Company may be entitled in the future. Any future amounts that the Company may receive from the Award are highly speculative and the timing of any such future payments, if any, is highly uncertain. As such, there can be no assurance that the Company will receive any future payments under the Award beyond the Cash Payment.

A separate arbitration involving other subsidiaries of the Company was initiated in 2012 to obtain compensation primarily for third-party minority shareholders' lost interests in the two expropriated plants. However, on November

13, 2017, ICSID issued an award that dismissed this arbitration on jurisdiction grounds. In March 2018, the two subsidiaries of the Company submitted to ICSID an application to annul the November 13, 2017 award; they have since submitted a pleading seeking annulment.

As a result of the favorable ruling by an ICSID ad hoc committee rejecting Venezuela's request to annul the OIEG Award, and thereby concluding those annulment proceedings, the Company has recognized a \$115 million gain from discontinued operations in 2018. The gain from discontinued operations of \$113 million, and the losses from discontinued operations of \$3 million and \$7 million, for the years ended December 31, 2018, 2017 and 2016, respectively, reflect the gain in 2018 and the ongoing costs for the Venezuelan expropriation in all three years.

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Owens Illinois, Inc.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

Tabular data dollars in millions

Selected Quarterly Financial Data (unaudited) The following tables present selected financial data by quarter for the years ended December 31, 2018 and 2017:

	2018				
	First	Second	Third	Fourth	Total
	Quarter	Quarter	Quarter	Quarter	Year
Net sales	\$ 1,736	\$ 1,772	\$ 1,734	\$ 1,635	\$ 6,877
Gross profit	\$ 319	\$ 346	\$ 324	\$ 294	\$ 1,283
Earnings (loss) from continuing operations attributable to the Company (a)	\$ 98	\$ 50	\$ 120	\$ (125)	\$ 144
Gain from discontinued operations attributable to the Company				115	113
Net earnings attributable to the Company	\$ 98	\$ 50	\$ 120	\$ (10)	\$ 257
Earnings per share of common stock (a) (b):					
Basic:					
Earnings (loss) from continuing operations	\$ 0.60	\$ 0.31	\$ 0.75	\$ (0.79)	\$ 0.90
Gain from discontinued operations				0.73	0.71
Net earnings (loss)	\$ 0.60	\$ 0.31	\$ 0.75	\$ (0.06)	\$ 1.61
Diluted:					
Earnings (loss) from continuing operations	\$ 0.59	\$ 0.31	\$ 0.75	\$ (0.78)	\$ 0.89
Gain from discontinued operations				0.72	0.70
Net earnings (loss)	\$ 0.59	\$ 0.31	\$ 0.75	\$ (0.06)	\$ 1.59

(a) Amounts management considers not representative of ongoing operations include:

For the second quarter, included net charges totaling \$75 million after-tax amount attributable to the Company. The effect of these charges was a decrease in earnings per share of \$0.46.

For the fourth quarter, included net charges totaling \$222 million after-tax amount attributable to the Company. The effect of these charges was a reduction in earnings per share of \$1.39.

(b) Selected financial data and earnings per share are computed independently for each period presented. As such, the sums of the amounts calculated separately for each quarter do not equal the year-to-date amount.

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Owens Illinois, Inc.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

Tabular data dollars in millions

	2017				Total
	First	Second	Third	Fourth	Year
	Quarter	Quarter	Quarter	Quarter	Year
Net sales	\$ 1,615	\$ 1,751	\$ 1,791	\$ 1,712	\$ 6,869
Gross profit	\$ 315	\$ 346	\$ 353	\$ 320	\$ 1,333
Earnings (loss) from continuing operations attributable to the Company (c)	\$ 49	\$ 140	\$ 128	\$ (133)	\$ 183
Loss from discontinued operations attributable to the Company			(2)		(3)
Net earnings (loss) attributable to the Company	\$ 49	\$ 140	\$ 126	\$ (133)	\$ 180
Earnings per share of common stock (c) (d):					
Basic:					
Earnings (loss) from continuing operations	\$ 0.30	\$ 0.86	\$ 0.78	\$ (0.81)	\$ 1.12
Loss from discontinued operations			(0.01)	—	(0.01)
Net earnings (loss)	\$ 0.30	\$ 0.86	\$ 0.77	\$ (0.81)	\$ 1.11
Diluted:					
Earnings (loss) from continuing operations	\$ 0.30	\$ 0.85	\$ 0.77	\$ (0.81)	\$ 1.11
Loss from discontinued operations			(0.01)	—	(0.01)
Net earnings (loss)	\$ 0.30	\$ 0.85	\$ 0.76	\$ (0.81)	\$ 1.10

(c) Amounts management considers not representative of ongoing operations include:

For the first quarter, included net charges totaling \$46 million after-tax amount attributable to the Company. The effect of these charges was a reduction in earnings per share of \$0.28.

For the second quarter, included net benefits totaling \$16 million after-tax amount attributable to the Company. The effect of these benefits was an increase in earnings per share of \$0.10.

For the fourth quarter, included net charges totaling \$224 million after-tax amount attributable to the Company. The effect of these charges was a reduction in earnings per share of \$1.36.

(d) Earnings per share are computed independently for each period presented. As such, the sums of the amounts calculated separately for each quarter do not equal the year-to-date amount.

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

None.

ITEM 9A. CONTROLS AND PROCEDURES

Disclosure Controls and Procedures

The Company maintains disclosure controls and procedures that are designed to ensure that information required to be disclosed in the Company's Exchange Act reports is recorded, processed, summarized and reported within the time periods specified in the Securities and Exchange Commission's rules and forms and that such information is accumulated and communicated to the Company's management, including its Chief Executive Officer and Chief Financial Officer, as appropriate, to allow timely decisions regarding required disclosure. In designing and evaluating the disclosure controls and procedures, management recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving the desired control objectives, and management is required to apply its judgment in evaluating the cost-benefit relationship of possible controls and procedures. Also, the Company has investments in certain unconsolidated entities. As the Company does not control or manage these entities, its disclosure controls and procedures with respect to such entities are necessarily substantially more limited than those maintained with respect to its consolidated subsidiaries.

As required by Rule 13a-15(b) of the Exchange Act, the Company carried out an evaluation, under the supervision and with the participation of management, including its Chief Executive Officer and Chief Financial Officer, of the effectiveness of the Company's disclosure controls and procedures as of the end of the period covered by this report. Based on the foregoing, the Company's Chief Executive Officer and Chief Financial Officer concluded that the Company's disclosure controls and procedures were effective at the reasonable assurance level as of December 31, 2018.

Management's Report on Internal Control over Financial Reporting

The management of Owens Illinois, Inc. is responsible for establishing and maintaining adequate internal control over financial reporting. The Company's internal control over financial reporting is 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 in the United States. However, all internal control systems, no matter how well designed, have inherent limitations. Therefore, even those systems determined to be effective can provide only reasonable assurance with respect to financial statement preparation and reporting.

Management assessed the effectiveness of the Company's internal control over financial reporting as of December 31, 2018. In making this assessment management used the criteria for effective internal control over financial reporting as described in "Internal Control—Integrated Framework" issued by the Committee of Sponsoring Organizations of the Treadway Commission (the COSO framework) in 2013.

Based on this assessment, using the criteria above, management concluded that the Company's system of internal control over financial reporting was effective as of December 31, 2018.

The Company's independent registered public accounting firm, Ernst & Young LLP, that audited the Company's consolidated financial statements, has issued an attestation report on the Company's internal control over financial reporting which is included below.

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Changes in Internal Control over Financial Reporting

As required by Rule 13a-15(d) of the Exchange Act, the Company carried out an evaluation, under the supervision and with the participation of management, including its Chief Executive Officer and Chief Financial Officer, of any change in the Company's internal control over financial reporting that has materially affected, or is reasonably likely to materially affect, the Company's internal control over financial reporting.

There were no changes in the Company's internal control over financial reporting during the quarter ended December 31, 2018 that have materially affected, or are reasonably likely to materially affect, the Company's internal control over financial reporting.

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REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Board of Directors and Share Owners of

Owens Illinois, Inc.

Opinion on Internal Control over Financial Reporting

We have audited Owens-Illinois, Inc.'s internal control over financial reporting as of December 31, 2018, based on criteria established in Internal Control—Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework) (the COSO criteria). In our opinion, Owens-Illinois, Inc. (the Company) maintained, in all material respects, effective internal control over financial reporting as of December 31, 2018, based on the COSO criteria.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the consolidated balance sheets of Owens-Illinois, Inc. as of December 31, 2018 and 2017, the related consolidated statements of results of operations, comprehensive income, share owners' equity and cash flows for each of the three years in the period ended December 31, 2018, and the related notes and financial statement schedule listed in the Index at Item 15 and our report dated February 14, 2019 expressed an unqualified opinion thereon.

Basis for Opinion

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

We conducted our audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects.

Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, testing and evaluating the design and operating effectiveness of internal control based on the assessed risk, and performing such other procedures as we considered necessary in the circumstances. We believe that

our audit provides a reasonable basis for our opinion.

Definition and Limitations of Internal Control Over Financial Reporting

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

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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/ Ernst & Young LLP

Toledo, Ohio

February 14, 2019

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ITEM 9B. OTHER INFORMATION

None.

PART III

ITEM 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE

Information with respect to non-officer directors and corporate governance is included in the 2019 Proxy Statement in the sections entitled “Election of Directors” and “Section 16(a) Beneficial Ownership Reporting Compliance” and such information is incorporated herein by reference.

Information with respect to executive officers is included herein in Item 1.

Code of Business Conduct and Ethics

The Company’s Global Code of Business Conduct and Ethics, which is applicable to all directors, officers and employees of the Company, including the principal executive officer, the principal financial officer and the principal accounting officer, is available on the Investor Relations section of the Company’s website (www.owi.com). A copy of the Code is also available in print to share owners upon request, addressed to the Corporate Secretary at Owens Illinois, Inc., One Michael Owens Way, Perrysburg, Ohio 43551. The Company intends to post amendments to or waivers from its Code of Business Conduct and Ethics (to the extent applicable to the Company’s directors, executive officers or principal financial officers) at this location on its website.

ITEM 11. EXECUTIVE COMPENSATION

The section entitled “Executive Compensation,” exclusive of the subsection entitled “Board Compensation Committee Report,” which is included in the 2019 Proxy Statement, is incorporated herein by reference.

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

The section entitled “Security Ownership of Certain Beneficial Owners and Management” which is included in the 2019 Proxy Statement is incorporated herein by reference.

The following table summarizes securities authorized for issuance under equity compensation plans as of December 31, 2018.

	Equity Compensation Plan Information		
	(a)	(b)	(c)
Plan Category	Number of securities to be issued upon exercise of outstanding options, warrants and rights(1) (thousands)	Weighted-average exercise price of outstanding options,	Number of securities remaining available for future issuance under equity compensation plans (excluding securities reflected in column (a)) (thousands)

		warrants and rights (1)	
Equity compensation plans approved by security holders	4,945	21.40	3,547
Equity compensation plans not approved by security holders	—	—	—
Total	4,945	\$ 21.40	3,547

(1) Represents 2,234,000 options to purchase shares of the Company's common stock and 2,711,000 restricted share units which do not provide for an exercise price and have been excluded from the weighted average exercise price in column (b). There are no outstanding warrants.

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ITEM 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE

The section entitled “Director and Executive Compensation and Other Information,” exclusive of the subsection entitled “Board Compensation Committee Report on Executive Compensation,” which is included in the 2019 Proxy Statement, is incorporated herein by reference.

ITEM 14. PRINCIPAL ACCOUNTING FEES AND SERVICES

Information with respect to principal accountant fees and services is included in the 2019 Proxy Statement in the section entitled “Independent Registered Public Accounting Firm” and such information is incorporated herein by reference.

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PART IV

ITEM 15. EXHIBITS AND FINANCIAL STATEMENT SCHEDULES

FINANCIAL STATEMENTS AND FINANCIAL STATEMENT SCHEDULES

Index of Financial Statements and Financial Statement Schedules Covered by Report of Independent Auditors.

(a) DOCUMENTS FILED AS PART OF THIS REPORT

1. See Index to Consolidated Financial Statements on page 50 hereof.
2. See Quarterly Results (Unaudited) beginning on page 95 hereof.
3. Financial Statement Schedule:

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For the years ended December 31, 2018, 2017, and 2016:

II—Valuation and Qualifying Accounts (Consolidated)

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All other schedules have been omitted since the required information is not present or not present in amounts sufficient to require submission of the schedule.

4. See Exhibit Index beginning on page 104 hereof.

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EXHIBIT INDEX

S K Item 601 No.	Document
2.1	— <u>Stock Purchase Agreement, dated as of May 12, 2015, by and between Owens-Brockway Glass Container Inc. and Vitro, S.A.B. de C.V., Distribuidora Álcali, S.A. de C.V. and Vitro Packaging, LLC (filed as Exhibit 2.1 to the Owens-Illinois, Inc.'s Form 8-K/A filed on May 13, 2015, File No. 1-9576, and incorporated herein by reference).</u>
3.1	— <u>Third Restated Certificate of Incorporation of Owens-Illinois, Inc. (filed as Exhibit 3.1 to Owens-Illinois, Inc.'s Form 10-K for the year ended December 31, 2012, File No. 1-9576, and incorporated herein by reference).</u>
3.2	— <u>Fourth Amended and Restated Bylaws of Owens-Illinois, Inc., (filed as Exhibit 3.1 to Owens-Illinois, Inc.'s Form 8-K dated July 13, 2017, File No. 1-9576, and incorporated herein by reference).</u>
4.1	— <u>Indenture, dated as of September 15, 2010, by and among OI European Group B.V.; the guarantors party thereto; Deutsche Trustee Company Limited as trustee; Deutsche Bank AG, London Branch as principal paying agent and transfer agent; and Deutsche Bank Luxembourg S.A. as the registrar, Luxembourg paying agent and transfer agent, including the form of the Senior Notes (filed as Exhibit 4.1 to Owens-Illinois Group, Inc.'s Form 8-K dated September 10, 2010, File No. 33-13061, and incorporated herein by reference).</u>
4.2	— <u>Indenture dated as of March 22, 2013, by and among OI European Group B.V.; the guarantors party thereto; Deutsche Trustee Company Limited as trustee; Deutsche Bank AG, London Branch as principal paying agent and transfer agent; and Deutsche Bank Luxembourg S.A. as the registrar and Luxembourg transfer agent, including the form of Notes (filed as Exhibit 4.1 to Owens-Illinois Group, Inc.'s Form 8-K dated March 22, 2013, File No. 33-13061, and incorporated herein by reference).</u>
4.3	— <u>Indenture dated as of December 3, 2014, by and among Owens-Brockway Glass Container Inc., the guarantors party thereto and U.S. Bank National Association, as trustee, including the form of 2022 Senior Notes and the form of 2025 Senior Notes (filed as Exhibit 4.1 to Owens-Illinois Group, Inc.'s Form 8-K dated December 3, 2014, File No. 33-13061, and incorporated herein by reference).</u>
4.4	— <u>Indenture dated as of August 24, 2015, by and among Owens-Brockway Glass Container Inc., the guarantors party thereto and U.S. Bank National Association, as trustee, including the form of 2023 Senior Notes and the form of 2025 Senior Notes (filed as Exhibit 4.1 to Owens-Illinois Group, Inc.'s Form 8-K dated August 24, 2015, File No. 33-13061, and incorporated herein by reference).</u>
4.5	— <u>Indenture, dated as of November 3, 2016, by and among OI European Group B.V., the guarantors party thereto, Deutsche Trustee Company Limited, as trustee, Deutsche Bank AG, London Branch, as principal paying agent and transfer agent, and Deutsche Bank Luxembourg S. A., as Luxembourg transfer agent and registrar, including the form of Notes (filed as Exhibit 4.1 to Owens-Illinois, Inc.'s and Owens-Illinois Group, Inc.'s combined Form 8-K dated November 3, 2016, File Nos. 1-9576 and 33-13061, and incorporated herein by reference).</u>
4.6	— <u>Second Amended and Restated Credit Agreement and Syndicated Facility Agreement, dated June 27, 2018, by and among the Borrowers named therein, Owen-Illinois General Inc., as Borrowers' Agent, Deutsche Bank AG New York Branch, as Administrative Agent, and the other Agents, Arrangers and Lenders named therein (filed as Exhibit 4.1 to Owen-Illinois, Inc.'s and Owens-Illinois Group, Inc.'s combined Form 8-K dated June</u>

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S K Item 601 No.	Document
4.7	— <u>Fourth Amended and Restated Intercreditor Agreement, dated as of June 27, 2018, by and among Deutsche Bank AG New York Branch, as Administrative Agent and Collateral Agent for the lenders party to the Credit Agreement (as defined therein) and any other parties thereto (filed as Exhibit 4.2 to Owen-Illinois, Inc.'s and Owens-Illinois Group, Inc.'s combined Form 8-K dated June 27, 2018, File Nos. 1-9576 and 33-13061, and incorporated herein by reference).</u>
4.8	— <u>Fourth Amended and Restated Pledge Agreement, dated as of April 22, 2015, between Owens-Illinois Group, Inc., Owens-Brockway Packaging, Inc., and Deutsche Bank AG, New York Branch, as Collateral Agent (as defined therein) and any other parties thereto (filed as Exhibit 4.2 to Owens-Illinois Group, Inc.'s Form 8-K dated April 22, 2015, File No. 33-13061, and incorporated herein by reference).</u>
4.9	— <u>Amended and Restated Security Agreement, dated as of April 22, 2015, between Owens-Illinois Group, Inc., each of the direct and indirect subsidiaries of Owens-Illinois Group, Inc. signatory thereto, and Deutsche Bank AG, New York Branch, as Collateral Agent (as defined therein) (filed as Exhibit 4.3 to Owens-Illinois Group, Inc.'s Form 8-K dated April 22, 2015, File No. 33-13061, and incorporated herein by reference).</u>
4.10	— <u>Indenture, dated as of December 12, 2017, by and among OI European Group B.V., the guarantors party thereto, and Deutsche Bank Trust Company Americas, as Trustee (filed as Exhibit 4.1 to Owens-Illinois, Inc.'s and Owens-Illinois Group, Inc.'s combined Form 8-K dated December 12, 2017, File Nos. 1-9576 and 33-13061, and incorporated herein by reference).</u>
4.11	— <u>Domestic Guarantor Consent and Reaffirmation, dated as of June 27, 2018, by and among Owens-Illinois Group, Inc., the Subsidiary Grantors (as defined therein) and Deutsche Bank AG New York Branch, as the Collateral Agent (filed as Exhibit 4.3 to Owen-Illinois, Inc.'s and Owens-Illinois Group, Inc.'s combined Form 8-K dated June 27, 2018, File Nos. 1-9576 and 33-13061, and incorporated herein by reference).</u>
10.1*	— <u>Amended and Restated Owens-Illinois Supplemental Retirement Benefit Plan (filed as Exhibit 10.1 to Owens-Illinois, Inc.'s Form 10-Q for the quarter ended June 30, 1998, File No. 1-9576, and incorporated herein by reference).</u>
10.2*	— <u>First Amendment to Amended and Restated Owens-Illinois Supplemental Retirement Benefit Plan (filed as Exhibit 10.3 to Owens-Illinois, Inc.'s Form 10-K for the year ended December 31, 2000, File No. 1-9576, and incorporated herein by reference).</u>
10.3*	— <u>Second Amendment to Amended and Restated Owens-Illinois Supplemental Retirement Benefit Plan (filed as Exhibit 10.1 to Owens-Illinois, Inc.'s Form 10-Q for the quarter ended March 31, 2002, File No. 1-9576, and incorporated herein by reference).</u>
10.4*	— <u>Third Amendment to Amended and Restated Owens-Illinois Supplemental Retirement Benefit Plan (filed as Exhibit 10.1 to Owens-Illinois, Inc.'s Form 10-Q for the quarter ended March 31, 2003, File No. 1-9576, and incorporated herein by reference).</u>
10.5*	— <u>Owens-Illinois, Inc. Directors Deferred Compensation Plan (filed as Exhibit 10.26 to Owens-Illinois, Inc.'s Form 10-K for the year ended December 31, 1995, File No. 1-9576, and incorporated herein by reference).</u>
10.6*	— <u>First Amendment to Owens-Illinois, Inc. Directors Deferred Compensation Plan (filed as Exhibit 10.27 to Owens-Illinois, Inc.'s Form 10-K for the year ended December 31, 1995, File No. 1-9576, and incorporated herein by reference).</u>
10.7*	— <u>Second Amendment to Owens-Illinois, Inc. Directors Deferred Compensation Plan (filed as Exhibit 10.2 to Owens-Illinois, Inc.'s Form 10-Q for the quarter ended March 31, 1997, File No. 1-9576, and incorporated herein by reference).</u>

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S K Item 601 No.	Document
10.8*	— <u>Amended and Restated 1997 Equity Participation Plan of Owens-Illinois, Inc. (filed as Exhibit 10.1 to Owens-Illinois, Inc.'s Form 10-Q for the quarter ended June 30, 1999, File No. 1-9576, and incorporated herein by reference).</u>
10.9*	— <u>First Amendment to Amended and Restated 1997 Equity Participation Plan of Owens-Illinois, Inc. (filed as Exhibit 10.1 to Owens-Illinois, Inc.'s Form 10-Q for the quarter ended June 30, 2002, File No. 1-9576, and incorporated herein by reference).</u>
10.10*	— <u>Owens-Illinois, Inc. Executive Deferred Savings Plan (filed as Exhibit 10.10 to Owens-Illinois, Inc.'s Form 10-K for the year ended December 31, 2016, File No. 1-9576, and incorporated herein by reference).</u>
10.11*	— <u>Owens-Illinois 2004 Executive Life Insurance Plan (filed as Exhibit 10.32 to Owens-Illinois, Inc.'s Form 10-K for the year ended December 31, 2004, File No. 1-9576, and incorporated herein by reference).</u>
10.12*	— <u>Owens-Illinois 2004 Executive Life Insurance Plan for Non-U.S. Employees (filed as Exhibit 10.33 to Owens-Illinois, Inc.'s Form 10-K for the year ended December 31, 2004, File No. 1-9576, and incorporated herein by reference).</u>
10.13*	— <u>Amended and Restated Owens-Illinois, Inc. 2005 Incentive Award Plan dated as of April 24, 2009 (filed as Exhibit 10.1 to Owens-Illinois, Inc.'s Form 10-Q for the quarter ended March 31, 2009, File No. 1-9576, and incorporated herein by reference).</u>
10.14*	— <u>Form of Non-Qualified Stock Option Agreement for use under the Owens-Illinois, Inc. 2005 Incentive Award Plan (filed as Exhibit 10.25 to Owens-Illinois, Inc.'s Form 10-K for the year ended December 31, 2011, File No. 1-9576, and incorporated herein by reference).</u>
10.15*	— <u>Form of Restricted Stock Unit Agreement for use under the Owens-Illinois, Inc. 2005 Incentive Award Plan (filed as Exhibit 10.28 to Owens-Illinois, Inc.'s Form 10-K for the year ended December 31, 2011, File No. 1-9576, and incorporated herein by reference).</u>
10.16*	— <u>Form of Performance Share Unit Agreement for use under the Owens-Illinois, Inc. 2005 Incentive Award Plan (filed as Exhibit 10.29 to Owens-Illinois, Inc.'s Form 10-K for the year ended December 31, 2011, File No. 1-9576, and incorporated herein by reference).</u>
10.17*	— <u>Second Amended and Restated Owens-Illinois, Inc. 2005 Incentive Award Plan (filed as Appendix B to Owens-Illinois, Inc.'s Definitive Proxy Statement on Schedule 14A filed March 31, 2014, File No. 1-9576, and incorporated herein by reference).</u>
10.18*	— <u>Form of Non-Qualified Stock Option Agreement for use under Owens-Illinois, Inc.'s Second Amended and Restated 2005 Incentive Award Plan (filed as Exhibit 10.1 to Owens-Illinois, Inc.'s Form 8-K dated March 7, 2015, File No. 1-9576, and incorporated herein by reference).</u>
10.19*	— <u>Form of Restricted Stock Unit Agreement for use under Owens-Illinois, Inc.'s Second Amended and Restated 2005 Incentive Award Plan (filed as Exhibit 10.2 to Owens-Illinois, Inc.'s Form 10-Q for the quarter ended March 31, 2017, File No. 1-9576, and incorporated herein by reference).</u>
10.20*	— <u>Form of Performance Stock Unit Agreement for use under Owens-Illinois, Inc.'s Second Amended and Restated 2005 Incentive Award Plan (filed as Exhibit 10.1 to Owens-Illinois, Inc.'s Form 10-Q for the quarter ended March 31, 2017, File No. 1-9576, and incorporated herein by reference).</u>
10.21*	— <u>Owens-Illinois, Inc. 2017 Incentive Award Plan (filed as Appendix B to Owens-Illinois, Inc.'s Definitive Proxy Statement on Schedule 14A filed March 30, 2017, File No. 1-9576, and incorporated herein by reference).</u>
10.22*	—

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Owens-Illinois, Inc. Executive Severance Policy (filed as Exhibit 10.4 to Owens-Illinois, Inc.'s Form 8-K dated March 7, 2015, File No. 1-9576, and incorporated herein by reference).

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S K Item 601 No.	Document
10.23*	— <u>Letter Agreement signed November 20, 2015, between Owens-Illinois, Inc. and Jan Bertsch (filed as Exhibit 10.1 to Owens-Illinois, Inc.’s Form 8-K dated November 23, 2015, File No. 1-9576, and incorporated herein by reference).</u>
21	— <u>Subsidiaries of Owens-Illinois, Inc. (filed herewith).</u>
23	— <u>Consent of Independent Registered Public Accounting Firm (filed herewith).</u>
24	— <u>Owens Illinois, Inc. Power of Attorney (filed herewith).</u>
31.1	— <u>Certification of Principal Executive Officer pursuant to Section 302 of the Sarbanes Oxley Act of 2002 (filed herewith).</u>
31.2	— <u>Certification of Principal Financial Officer pursuant to Section 302 of the Sarbanes Oxley Act of 2002 (filed herewith).</u>
32.1**	— <u>Certification of Principal Executive Officer pursuant to 18 U.S.C. Section 1350 (furnished herewith).</u>
32.2**	— <u>Certification of Principal Financial Officer pursuant to 18 U.S.C. Section 1350 (furnished herewith).</u>
101	— Financial statements from the Annual Report on Form 10-K of Owens-Illinois, Inc. for the year ended December 31, 2018, formatted in XBRL: (i) the Consolidated Results of Operations, (ii) the Consolidated Comprehensive Income, (iii) the Consolidated Balance Sheets, (iv) the Consolidated Share Owners’ Equity, (v) the Consolidated Cash Flows and (vi) the Notes to Consolidated Financial Statements.

*Indicates a management contract or compensatory plan or arrangement required to be filed as an exhibit to this form pursuant to Item 15(c).

**This exhibit shall not be deemed “filed” for purposes of Section 18 of the Securities Exchange Act of 1934, as amended, and is not incorporated by reference into any filing of the Company, whether made before or after the date hereof, regardless of any general incorporation language in such filing.

ITEM 16. FORM 10-K SUMMARY

None.

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SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned thereunto duly authorized.

OWENS ILLINOIS, INC.
(Registrant)

By: /s/ Mary Beth Wilkinson
Mary Beth Wilkinson
Attorney in fact

Date: February 14, 2019

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Signatures

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of Owens Illinois, Inc. and in the capacities and on the dates indicated.

Signatures	Title
Andres A. Lopez	President and Chief Executive Officer (Principal Executive Officer)
Jan A. Bertsch	Senior Vice President and Chief Financial Officer (Principal Financial Officer; Principal Accounting Officer)
Carol A. Williams	Chairman of the Board
Gordon J. Hardie	Director
Peter S. Hellman	Director
John Humphrey	Director
Anastasia D. Kelly	Director
John J. McMackin, Jr.	Director
Alan J. Murray	Director
Hari N. Nair	Director
Hugh H. Roberts	Director
Joseph D. Rupp	Director
Dennis K. Williams	Director

By: /s/ Mary Beth Wilkinson
 Mary Beth Wilkinson
 Attorney in fact

Date: February 14, 2019

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INDEX TO FINANCIAL STATEMENT SCHEDULE

Financial Statement Schedule of Owens Illinois, Inc. and Subsidiaries:

For the years ended December 31, 2018, 2017, and 2016:

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OWENS-ILLINOIS, INC.

SCHEDULE II – VALUATION AND QUALIFYING ACCOUNTS (CONSOLIDATED)

Years ended December 31, 2018, 2017, and 2016

(Millions of Dollars)

Reserves deducted from assets in the balance sheets:

Allowances for losses and discounts on receivables

	Balance at beginning of period	Additions Charged to costs and expenses	Other	Deductions (Note 1)	Balance at end of period
2018	\$ 34	\$ 13	\$ (4)	\$ (8)	\$ 35
2017	\$ 32	\$ 12	\$ (2)	\$ (8)	\$ 34
2016	\$ 29	\$ 15	\$ (2)	\$ (10)	\$ 32

(1) Deductions from allowances for losses and discounts on receivables represent uncollectible notes and accounts written off.

Valuation allowance on net deferred tax assets

	Balance at beginning of period	Charged to income	Charged to other comprehensive income	Foreign currency translation	Other (Note 1)	Balance at end of period
2018	\$ 543	\$ (20)	\$ (7)	\$ (9)	\$ (12)	\$ 495
2017	\$ 1,094	\$ 15	\$ (79)	\$ 4	\$ (491)	\$ 543
2016	\$ 1,135	\$ 3	\$ (32)	\$ (3)	\$ (9)	\$ 1,094

(1) The U.S. Tax Cuts and Jobs Act ("the Act") was enacted on December 22, 2017. The Act reduced the U.S. federal corporate tax rate to 21% from 35%. The reduction in tax rates reduced certain net U.S. deferred tax assets by \$162 million, with an offsetting impact to valuation allowance.

In 2017, \$327 million of foreign tax credits expired or were utilized against transition tax, against which a valuation allowance had previously been asserted.

In 2018, the other change in valuation allowance on net deferred tax assets was primarily due to changes in tax law and expiration of certain tax attribute carryovers against which a valuation allowance had previously been asserted.

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