

**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, 2019**

OR

**TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
FOR THE TRANSITION PERIOD FROM _____ TO _____**

Commission File Number 1-4462

STEPAN COMPANY

(Exact name of registrant as specified in its charter)

Delaware

(State or other jurisdiction of incorporation or organization)

22 West Frontage Road, Northfield, Illinois

(Address of principal executive offices)

36-1823834

(I.R.S. Employer Identification Number)

60093

(Zip Code)

Registrant's telephone number including area code: 847-446-7500

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

Title of Each Class	Trading Symbol	Name of Each Exchange on Which Registered
Common Stock, \$1 par value	SCL	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 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 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 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 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 Exchange Act) Yes No

Aggregate market value at June 28, 2019, of voting and non-voting common stock held by nonaffiliates of the registrant: \$1,862,119,945*

Number of shares outstanding of each of the registrant's classes of common stock as of January 31, 2020:

Class	Outstanding at January 31, 2020
Common Stock, \$1 par value	22,516,988

Documents Incorporated by Reference

Part of Form 10-K

Part III, Items 10-14

Document Incorporated

Portions of the Proxy Statement for Annual Meeting of Stockholders to be held
April 21, 2020.

* Based on reported ownership by all directors and executive officers at June 28, 2019.

STEPAN COMPANY
ANNUAL REPORT ON FORM 10-K
December 31, 2019

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SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

Certain statements in this Annual Report on Form 10-K, other than purely historical information, are “forward-looking statements” within the meaning of the Private Securities Litigation Reform Act of 1995, Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended (the Exchange Act). These statements include statements about Stepan Company’s and its subsidiaries’ (the Company) plans, objectives, strategies, financial performance and outlook, trends, the amount and timing of future cash distributions, prospects or future events and involve known and unknown risks that are difficult to predict. As a result, our actual financial results, performance, achievements or prospects may differ materially from those expressed or implied by these forward-looking statements. In some cases, forward-looking statements can be identified by the use of words such as “may,” “could,” “expect,” “intend,” “plan,” “seek,” “anticipate,” “believe,” “estimate,” “guidance,” “predict,” “potential,” “continue,” “likely,” “will,” “would,” “should,” “illustrative” and variations of these terms and similar expressions, or the negative of these terms or similar expressions. Such forward-looking statements are necessarily based upon estimates and assumptions that, while considered reasonable by the Company and its management based on their knowledge and understanding of the business and industry, are inherently uncertain. These statements are not guarantees of future performance, and stockholders should not place undue reliance on forward-looking statements. There are a number of risks, uncertainties and other important factors, many of which are beyond the Company’s control, that could cause the Company’s actual results to differ materially from the forward-looking statements contained in this Annual Report on Form 10-K. Such risks, uncertainties and other important factors, include, among others, the risks, uncertainties and factors set forth under “Part I-Item IA. Risk Factors” and “Part II-Item 7. Management’s Discussion and Analysis of Financial Condition and Results of Operations,” and the risks and uncertainties related to the following:

- accidents, unplanned production shutdowns or disruptions in any of the Company’s manufacturing facilities;
- reduced demand for Company products due to customer product reformulations or new technologies;
- the Company’s inability to successfully develop or introduce new products;
- compliance with anti-corruption, environmental, health and safety and product registration laws;
- the Company’s ability to make acquisitions of suitable candidates and successfully integrate acquisitions;
- global competition and the Company’s ability to successfully compete;
- volatility of raw material, natural gas and electricity costs as well as any disruption in their supply;
- disruptions in transportation or significant changes in transportation costs;
- downturns in certain industries and general economic downturns;
- international business risks, including fluctuations in currency exchange rates, legal restrictions and taxes;
- unfavorable resolution of litigation against the Company;
- the Company’s ability to keep and protect its intellectual property rights;
- potentially adverse tax consequences due to the international scope of the Company’s operations;
- downgrades to the Company’s credit ratings or disruptions to the Company’s ability to access well-functioning capital markets;
- conflicts, military actions, terrorist attacks and general instability, particularly in certain energy-producing nations, along with increased security regulations;
- cost overruns, delays and miscalculations in capacity needs with respect to the Company’s expansion or other capital projects;
- interruption of, damage to or compromise of the Company’s IT systems and failure to maintain the integrity of customer, colleague or Company data;
- the Company’s ability to retain its executive management and other key personnel; and
- the Company’s ability to operate within the limitations of debt covenants; and
- the other factors set forth under “Risk Factors.”

These factors are not necessarily all of the important factors that could cause the Company’s actual financial results, performance, achievements or prospects to differ materially from those expressed in or implied by any of the Company’s forward-looking statements. Other unknown or unpredictable factors also could harm the Company’s results. All forward-looking statements attributable to us or persons acting on the Company’s behalf are expressly qualified in their entirety by the cautionary statements set forth above. Forward-looking statements speak only as of the date they are made, and we do not undertake or assume any obligation to update publicly any of these forward-looking statements to reflect actual results, new information or future events, changes in

assumptions or changes in other factors affecting forward-looking statements, except to the extent required by applicable laws. If we update one or more forward-looking statements, no inference should be drawn that we will make additional updates with respect to those or other forward-looking statements.

The “Company,” “we,” “our” or “us” means Stepan Company and one or more of its subsidiaries only.

Item 1. Business

Stepan Company, which was incorporated under the laws of the state of Delaware on February 19, 1959, and its subsidiaries produce specialty and intermediate chemicals, which are sold to other manufacturers and used in a variety of end products. The Company has three reportable segments: Surfactants, Polymers and Specialty Products.

Surfactants are chemical agents that affect the interaction between two surfaces; they can provide actions such as detergency (i.e., the ability of water to remove soil from another surface), wetting and foaming, dispersing, emulsification (aiding two dissimilar liquids to mix), demulsification, viscosity modifications and biocidal disinfectants. Surfactants are the basic cleaning agent in detergents for washing clothes, dishes, carpets, fine fabrics, floors and walls. Surfactants are also used for the same purpose in shampoos, body wash and conditioners, fabric softeners, toothpastes, cosmetics and other personal care products. Commercial and industrial applications include emulsifiers for agricultural products, emulsion polymers such as floor polishes and latex foams and coatings, wetting and foaming agents for wallboard manufacturing and surfactants for oilfield applications.

Polymers, which include polyurethane polyols, polyester resins and phthalic anhydride, are used in a variety of applications. Polyurethane polyols are used in the manufacture of rigid foam for thermal insulation in the construction industry. They are also a raw material base for coatings, adhesives, sealants and elastomers (CASE) applications. Polyester resins, which include liquid and powdered products, are used in CASE applications. Phthalic anhydride is used in polyester resins, alkyd resins, and plasticizers for applications in construction materials and components of automotive, boating, and other consumer products and internally in the Company's polyols.

Specialty Products are chemicals used in food, flavoring, nutritional supplement and pharmaceutical applications.

MARKETING AND COMPETITION

Principal customers for surfactants are manufacturers of detergents, shampoos, body wash, fabric softeners, toothpastes and cosmetics. In addition, surfactants are sold to the producers of agricultural herbicides and insecticides and lubricating products. Surfactants are also sold into the oilfield market to aid production, drilling and hydraulic fracking. Polymers are used in the construction and appliance industries, as well as in applications for the coatings, adhesives, sealants and elastomers industries. Phthalic anhydride, a Polymer product, is also used by automotive, boating and other consumer product companies. Specialty products are used primarily by food, nutritional supplement and pharmaceutical manufacturers.

The Company does not sell directly to the retail market, but sells to a wide range of manufacturers in many industries and has many competitors. The principal methods of competition are product performance, price, technical assistance and ability to meet the specific needs of individual customers. These factors allow the Company to compete on bases other than price alone, reducing the severity of competition compared to that experienced in the sales of commodity chemicals having identical performance characteristics. The Company is one of the leading merchant producers of surfactants in the world. In the case of surfactants, much of the Company's competition comes from several large global and regional producers and the internal divisions of larger customers. In the manufacture of polymers, the Company competes with the chemical divisions of several large companies, as well as with other small specialty chemical manufacturers. In specialty products, the Company competes with several large firms plus numerous small companies.

MAJOR CUSTOMER AND BACKLOG

The Company did not have any one customer whose business represented more than 10 percent of the Company's consolidated revenue in 2019, 2018 or 2017. The Company has contract arrangements with certain customers, but volumes are generally contingent on purchaser requirements. Much of the Company's business is essentially on a "spot delivery basis" and does not involve a significant backlog.

ENERGY SOURCES

Substantially all of the Company's manufacturing plants operate on electricity and interruptible natural gas. During peak heating demand periods, gas service to all plants may be temporarily interrupted for varying periods ranging from a few days to several months. The plants operate on fuel oil during these periods of interruption. In January 2020, the Company's Millsdale, Illinois facility suffered a power outage that caused a temporary shutdown of the plant and further related operational issues. The Company's operations have not experienced any other plant shutdowns or adverse effects upon its business in recent years that were caused by a lack of available energy sources, other than temporary service interruptions brought on by mechanical failure or severe weather conditions.

RAW MATERIALS

The principal raw materials used by the Company are petroleum or plant based. For 2020, the Company has contracts with suppliers that cover the majority of its forecasted requirements for major raw materials and is not substantially dependent upon any one supplier.

ENVIRONMENTAL COMPLIANCE

Compliance with applicable country, state and local regulations regarding the discharge of materials into the environment, or otherwise relating to the protection of the environment, resulted in capital expenditures by the Company of \$3.7 million during 2019. These expenditures represented approximately four percent of the Company's total 2019 capital expenditures. Capitalized environmental expenditures are depreciated and charged on a straight-line basis to pretax earnings over their estimated useful lives, which are typically 10 years. Recurring costs associated with the operation and maintenance of facilities for waste treatment and waste disposal and managing environmental compliance in ongoing operations at our manufacturing locations were approximately \$31.8 million in 2019. Compliance with such regulations is not expected to have a material adverse effect on the Company's earnings and competitive position in the foreseeable future.

EMPLOYMENT

At December 31, 2019 and 2018, the Company employed 2,284 and 2,250 persons, respectively. The Company has collective bargaining agreements with employees at some of its manufacturing locations. While the Company has experienced occasional work stoppages as a result of the collective bargaining process and may experience some work stoppages in the future, management believes that it will be able to negotiate all labor agreements on satisfactory terms. Past work stoppages have not had a significant impact on the Company's operating results. Overall, the Company believes it has good relationships with its employees.

ACQUISITIONS AND DISPOSITIONS

See Note 21, Acquisitions, of the Consolidated Financial Statements (Item 8 of this Form 10-K).

WEBSITE

The Company's website address is www.stepan.com. The Company makes available free of charge on or through its website its annual report on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, and all amendments to those reports as soon as reasonably practicable after such material is electronically filed with or furnished to the Securities and Exchange Commission. The website also includes the Company's code of conduct, corporate governance guidelines and the charters for the audit, compensation and development, compliance and nominating and corporate governance committees of the Board of Directors.

Information About our Executive Officers

The Company's executive officers are elected annually by the Board of Directors at the first meeting following the Annual Meeting of Stockholders to serve through the next annual meeting of the Board and until their respective successors are duly qualified and elected.

The executive officers of the Company, their ages and certain other information as of February 27, 2020, are as follows:

Name	Age	Title	Year First Elected Officer
F. Quinn Stepan, Jr.	59	Chairman, President and Chief Executive Officer	1997
Arthur W. Mergner	56	Vice President, Supply Chain	2014
Scott R. Behrens	50	Vice President and General Manager – Surfactants	2014
Debra A. Stefaniak	58	Vice President, Business Enablement	2015
Sean T. Moriarty	50	Vice President and General Manager – Polymers	2017
Luis E. Rojo	47	Vice President and Chief Financial Officer	2018
Janet A. Catlett	43	Vice President and Chief Human Resources Officer	2018
Jason S. Keiper	46	Vice President and Chief Technology and Sustainability Officer	2019
David G. Kabbes	57	Vice President, General Counsel and Secretary	2019

F. Quinn Stepan, Jr. assumed the position of Chairman of the Company's Board of Directors in January 2017. He has served the Company as President and Chief Executive Officer since January 2006. He served the Company as President and Chief Operating Officer from 1999 through 2005.

Arthur W. Mergner has served the Company as Vice President, Supply Chain since August 2017. From April 2014 until August 2017, he served as Vice President and General Manager – Polymers of the Company.

Scott R. Behrens has served the Company as Vice President and General Manager – Surfactants since September 2014. From January 2010 to September 2014 he served as Vice President – Business Management.

Debra A. Stefaniak has served the Company as Vice President, Business Enablement since October 2018. From February 2014 to September 2018, she served as Vice President, Business Transformation of the Company.

Sean T. Moriarty has served the Company as Vice President and General Manager – Polymers since September 2017. From September 2014 through September 2017, he served as Vice President and General Manager – North America Surfactants of the Company.

Luis E. Rojo has served the Company as Vice President and Chief Financial Officer since April 2018. From February 2018 to April 2018, he served as Global Hair Care Finance Director at Procter & Gamble Co. (P&G), a branded consumer packaged goods company. From April 2014 to February 2018, he served as NA Hair Care Finance Director at P&G.

Janet A. Catlett has served the Company as Vice President and Chief Human Resources Officer since July 2018. From March 2017 to July 2018, she served as Senior Director Total Rewards at Hollister Incorporated, which develops, manufactures and markets health care products and services worldwide. From September 2014 to March 2017, she served as Director Total Rewards at Hollister Incorporated.

Jason S. Keiper has served the Company as Vice President and Chief Technology and Sustainability Officer since June 2019. From October 2018 to June 2019, Dr. Keiper served as Head, Product Technology and Engineering, of Syngenta, an agriculture company. From 2015 to September 2018, Dr. Keiper served as Head, Global Formulation and Analytical Development; Technology and Engineering of Syngenta.

David G. Kabbes has served the Company as Vice President, General Counsel and Secretary of the Company since July 2019. From January 2018 to June 2019, Mr. Kabbes served as Executive Vice President, Corporate Affairs and Chief Legal Officer of Bunge Limited, an agricultural and food ingredient company. From February 2015 to December 2017, Mr. Kabbes served as General Counsel and Managing Director – Corporate Affairs of Bunge Limited. From August 2000 to January 2015, Mr. Kabbes served as Senior Vice President, Corporate and Legal Affairs of Bunge North America, Inc.

Item 1A. Risk Factors

The following discussion identifies the most significant factors that may materially and adversely affect the Company's business, financial condition, results of operations and cash flows. These and other factors, many of which are beyond the Company's control, may cause future results of operations to differ materially from past results or those results currently expected or desired. The following information should be read in conjunction with Part II-Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations and the consolidated financial statements and related notes included in this Form 10-K.

RISKS RELATED TO OUR BUSINESS

Chemical manufacturing is inherently hazardous and may result in accidents or may require planned or unplanned production slowdowns or shutdowns, which may disrupt our operations or expose us to significant losses or liabilities, which may have a material impact on our business, financial position, results of operations and cash flows.

Manufacturing facilities in the Company's industry are subject to planned and unplanned production slowdowns and shutdowns, turnarounds and outages. Unplanned production disruptions may occur for external reasons, such as natural disasters, weather, disease, strikes, transportation interruption, government regulation, political unrest or terrorism, or internal reasons, such as fire, explosions, mechanical failure, labor-related work stoppages or slowdowns, maintenance, discharges, contamination, environmental remediation or other manufacturing problems. Certain of our production facilities are, and production facilities acquired or built in the future may be, located in areas where unplanned disruptions are more likely. Alternative facilities with sufficient capacity may not be available, may cost substantially more or may take a significant amount of time to increase production or qualify with Company customers, each of which could negatively impact the Company's business, financial position, results of operations and cash flows. Further, some of the Company's products cannot currently be made, or made in the volume required, at more than one of the Company's locations. For some of these products, the Company has access to external market suppliers, but the Company cannot guarantee that these products will be available to it in amounts sufficient to meet its requirements or at a cost that is competitive with the Company's cost of manufacturing these products. Long-term production disruptions may cause Company customers to seek alternative supply, which could further adversely affect Company profitability.

Although the Company takes precautions to enhance the safety of its operations and minimize the risk of disruptions, the hazards associated with chemical manufacturing and the related storage and transportation of raw materials, products and wastes are inherent in our operations. We cannot eliminate the risk of accidental contamination, discharge or injury resulting from those materials. Also, our suppliers and customers may use and/or generate hazardous materials, and we may be required to indemnify our suppliers, customers or waste disposal contractors against damages and other liabilities arising out of the production, handling or storage of our products or raw materials or the disposal of related wastes. Potential risks include explosions and fires, chemical spills and other discharges or releases of toxic or hazardous substances or gases, and pipeline and storage tank leaks and ruptures. Those hazards may result in personal injury and loss of life, damage to property, damages to public health and contamination of the environment, which may result in a suspension of operations and the imposition of civil or criminal fines, penalties and other sanctions, cleanup costs, and claims by governmental entities or third-parties. Furthermore, the Company is subject to present and future claims with respect to workplace exposure, exposure of toxic or hazardous substances to contractors on Company premises as well as other persons located nearby, workers' compensation and other matters.

We are dependent on the continued operation of our production facilities and the loss or shutdown of operations over an extended period could have a material adverse effect on our financial condition, or results of operations. The Company maintains property, business interruption, products liability and casualty insurance policies, which we believe are in accordance with customary industry practices, as well as insurance policies covering other types of risks, including pollution legal liability insurance. However, some of these potential manufacturing hazards and risks may not be insurable. Moreover, even when such hazards and risks are insurable, the insurance coverage may not be sufficient to cover all losses resulting from the occurrence of any of these events. Each of these insurance policies is subject to customary exclusions, deductibles and coverage limits, in accordance with industry standards and practices. As a result of market conditions, premiums and deductibles for certain insurance policies can increase substantially and, in some instances, certain insurance may become unavailable or available only with reduced amounts of coverage. There is also a risk, beyond the reasonable control of the Company, that an insurance carrier may not have the financial resources to cover an insurable loss. As a result, the occurrence of any of these events could have a material adverse effect on the Company's business, financial position, results of operations and cash flows.

Customer product reformulations or new technologies can reduce the demand for the Company's existing products, and the Company may not be successful in developing or introducing new products.

The Company's products are used in a broad range of customer product applications. Changes in customer manufacturing processes, customer product reformulations, development and use of new technologies or changes in regulatory, legislative or industry requirements may lead to reduced consumption of the Company's products or cause customers to consider some Company products obsolete or less attractive.

For example, increased concerns regarding the safety of 1,4 dioxane in consumer products and its potential impact on human health and the environment may lessen the demand for certain of the Company's products. The Company generates 1,4 dioxane as a by-product during the manufacture of certain of its surfactant products, including alkoxylates and ether sulfates, used by its customers as cleaning agents in household cleaning, personal care and cosmetics products. In their finished form, consumer products that contain ethoxylated surfactants may contain trace amounts of 1,4 dioxane. 1,4 dioxane has been categorized by regulators as a toxic and carcinogenic substance at certain levels. In December 2019, New York adopted a law that, beginning in 2022 and 2023, will permit no more than trace amounts of the chemical in cleaning, personal care and cosmetics products. California, likewise, is considering regulating 1,4 dioxane in personal care and cleaning products under its Safer Consumer Products regulation. The U.S. Environmental Protection Agency (USEPA) also continues to examine 1,4 dioxane as part of its environmental and occupational regulatory authority. We expect our customers to commence reformulating their personal care, cosmetics and cleaning products in 2020 and 2021 to meet New York's 2022 and 2023 deadlines. These trends and corresponding changes in consumer preferences could reduce demand for our ethoxylated surfactant products, as our customers look to reduce the levels of ethoxylated surfactants in their finished products to stay below the maximum allowed levels or transition to alternative surfactants with lower levels of 1,4 dioxane. We are currently modifying our manufacturing process to reduce 1,4 dioxane content to allow customers to continue to use ethoxylated surfactants at current use levels, while also offering consumer product formulation prototypes that contain low/no dioxane containing surfactants currently offered by the Company.

It is imperative that the Company continue to develop new products to replace the sales of products that mature and decline in use, though the Company may not be successful in achieving its growth expectations from developing new products. Moreover, the Company cannot be certain that the costs it incurs investing in new product and technology development will result in an increase in revenues or profits commensurate with its investment, and the introduction of any new products may be disrupted or delayed by manufacturing or other technical difficulties. The Company's business, financial position, results of operations and cash flows could be materially and adversely affected if the Company is unable to successfully manage the maturation of existing products and the successful development and introduction of new products.

The Company is subject to a variety of environmental, health and safety and product registration laws dealing with the production and sale of chemicals that could require us to incur additional costs or to reformulate or discontinue certain of our products, or expose us to liability or enforcement actions.

The Company's operations are regulated under a number of federal, state, local and foreign environmental, health and safety laws and regulations that govern, among other things, the production and marketing of chemical substances and the discharge, use, handling, transport, storage and disposal of hazardous materials into the air, soil and water. In the United States, these laws and regulations include, but are not limited to the U.S. Toxic Substances Control Act (TSCA), the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA), the Clean Air Act, the Clean Water Act, the Resource Conservation and Recovery Act (RCRA), the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), the Occupational Safety and Health Act and state and local laws, such as California's Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65). Analogous laws outside the United States apply to us in many jurisdictions, including, among others, the European Union's Registration, Evaluation, Authorization and Restriction of Chemical Substances (REACH) regulation and its Biocidal Products Regulation. Compliance with these environmental, health and safety laws and regulations is a major consideration for the Company, and to comply with some of these laws, we may need to alter our product lines or implement different or more costly manufacturing processes (including the installation of pollution control equipment), which could lead to a material adverse effect on our results of operations. In addition, the transportation of certain raw materials is highly regulated and is subject to increased regulation or restrictions. These regulations may restrict or prohibit transport of these raw materials, resulting in these raw materials not being available to the Company in quantities desired by the Company or at costs attractive to the Company, which may restrict or substantially limit the Company's manufacturing operations.

The REACH regulation, a registration system that imposes obligations on manufacturers and importers of chemicals and other products into the European Union to compile and file reports and testing data on, and perform safety assessments for, certain chemical substances, was fully implemented in 2018, and any new substances introduced to the EU market in the future must be registered. The costs associated with the Company's compliance with these registrations have been substantial and are expected to increase as product sales increase because higher tonnage bands have higher annual registration fees and require more testing to support the registration. Moreover, if a registration in the future is not submitted by any applicable deadline, our ability to sell those products may be negatively impacted until the registration process has been completed. In addition, the European Chemical Agency is evaluating existing chemical registrations and may require additional testing and data collection. Chemicals may be assessed and removed from EU commerce entirely, potentially requiring the Company to discontinue certain product lines and to reformulate others, which could materially alter our marketplace position or otherwise have a material financial effect on our costs or revenues. Regulators in other countries are also implementing chemical registration regulations similar to the REACH regulation.

Furthermore, some of the laws and regulations applicable to us have changed in recent years to impose new obligations or induce increasing compliance costs that could also force us to reformulate or discontinue certain of our products. For example, the European Union is now requiring a review of existing active biocide substances, and based on this review, the European Commission or an individual member state may decide not to authorize the product for continued sale. As another example, TSCA now mandates that the USEPA must designate “high priority” chemicals and perform a risk evaluation, which could result in a finding of “unreasonable risk” and a decision to promulgate new regulations to address such risk. As a result of such regulations, our ability to sell certain products may be curtailed and customers may avoid purchasing some products in favor of less regulated, less hazardous or less costly alternatives. It may be impractical for us to continue manufacturing heavily regulated products, and we may incur costs to shut down or transition such operations to alternative products. Additionally, the nature, stringency and timing of any future regulations or changes in regulations are uncertain.

In addition, increasingly stringent regulation of human exposure to ethylene oxide by regulatory authorities in the United States could require material expenditures or changes in our manufacturing operations. We use ethylene oxide at our Winder, Georgia and Millsdale, Illinois facilities. We use ethylene oxide in a closed loop process to manufacture surfactants that are used in products such as laundry detergents. The Company does not manufacture ethylene oxide, nor does it use ethylene oxide as a fumigant. Ethylene oxide is listed as a hazardous air pollutant under the Clean Air Act, as amended, emissions of which are regulated by the USEPA and other regulatory authorities. In 2019 Illinois adopted a law limiting ethylene oxide emissions in certain counties. Georgia and Illinois legislators have proposed legislation that would impose additional restrictions on the use of ethylene oxide. The USEPA is considering new standards for ethylene oxide emissions. While our production facilities have not yet been materially affected by changes in ethylene oxide regulation, any additional regulatory restrictions on the use or emission of ethylene oxide by facilities could impair our ability to manufacture certain products in affected locations, including at our Winder, Georgia and Millsdale, Illinois facilities.

Compliance with environmental laws could restrict the Company’s ability to expand its facilities or require the Company to modify its facilities and processes or acquire additional costly pollution control equipment, incur other significant expenses, or expose the Company to greater liability associated with its production processes and products. The Company has incurred and will continue to incur capital expenditures and operating costs in complying with these laws and regulations, as our operations currently use, and have historically used, hazardous materials and generate, and have historically generated, quantities of hazardous waste. Some existing environmental laws and regulations impose liability and responsibility on present and former owners, operators or users of facilities and sites for contamination at those locations without regard to causation or knowledge of contamination. Certain of our sites have an extended history of industrial use, which may expose us to liability. We are subject to regulatory oversight and investigation, remediation, and monitoring obligations at certain current and former U.S. Superfund sites, as well as third-party disposal sites, under federal laws and their state and local analogues, including the RCRA, the Clean Water Act, the Clean Air Act, and CERCLA, as well as analogous foreign laws. See Item 3, Legal Proceedings, in this Annual Report on Form 10-K and Note 17, Contingencies, in the Notes to Consolidated Financial Statements for a summary of current significant environmental proceedings related to certain environmental sites. In the event that new contamination is discovered, including at facilities we may acquire in the future, the Company may become subject to additional obligations. The costs and liabilities associated with these issues may have a material adverse effect on the Company’s business, financial position, results of operations and cash flows.

The Company is also subject to numerous federal, state, local and foreign laws that regulate the manufacture, storage, distribution and labeling of many of the Company’s products, including some of the Company’s disinfecting, sanitizing and antimicrobial products. Some of these laws require the Company to have operating permits for the Company’s production facilities, warehouse facilities and operations. Various federal, state, local and foreign laws and regulations also require the Company to register the Company’s products and to comply with specified requirements with respect to those products, such as FIFRA, the EU Biocidal Products Regulation and Mexico’s General Law of Ecological Equilibrium and Environmental Protection. Additionally, those requirements, and enforcement of those requirements, may become more stringent in the future. The ultimate cost of compliance with any such requirements could be material.

Although it is our policy to comply with such laws and regulations, it is possible that we have not been or may not be at all times in material compliance with all of those requirements. If the Company has failed to comply or fails to comply in the future with any of these laws and regulations, including permitting and licensing requirements, it may be liable for damages and the costs of remedial actions in excess of the Company’s recorded liabilities, and may also be subject to fines, injunctions or criminal sanctions or to revocation, non-renewal or modification of the Company’s operating permits and revocation of the Company’s product registrations. Any such revocation, modification or non-renewal may require the Company to cease or limit the manufacture and sale of its products at one or more of the Company’s facilities, which may limit or prevent the Company’s ability to meet product demand or build new facilities and may have a material adverse effect on the Company’s business, financial position, results of operations and cash flows. Any such revocation, non-renewal or modification may also result in an event of default under the indenture for the Company’s notes or under the Company’s credit facilities, which, if not cured or waived, may result in the acceleration of all the Company’s indebtedness.

In addition to the costs of complying with environmental, health and safety laws and regulations, the Company has incurred and may incur in the future costs defending against environmental litigation and/or investigations brought by government agencies and private parties, including administrative proceedings. The Company is, and may be in the future, a defendant in lawsuits brought by parties alleging environmental damage, personal injury or property damage. A significant judgment or settlement against the Company, to the extent not covered by existing insurance policies, could have a material adverse effect on its business, financial position, results of operations and cash flows. Although the Company has insurance policies that may cover some of these potential losses, there is always uncertainty as to whether such insurance may be sufficient to cover such losses or available at all to the Company based on case-specific factors and the specific provisions of the Company's insurance policies.

The potential cost to the Company relating to environmental, health and safety and product registration matters is uncertain due to factors such as the complexity and evolving nature of laws and regulations relating to the environment, health and safety and product registration, including those outside of the United States. Environmental and product registration laws and regulations may also become more stringent over time, imposing greater compliance costs and increasing risks and penalties associated with any violation, as well as restricting or prohibiting the sale of existing or new products, which may also negatively impact the Company's operating results. For example, in 2019 the area around Chicago, Illinois was designated as a "serious nonattainment" zone for air emissions, which may limit activities or increase costs at the Company's Millsdale, Illinois facility. Without limiting the foregoing, these laws or regulations may also restrict or prohibit the use of non-renewable or carbon-based substances, or impose fees or penalties for the use of these substances. Accordingly, the Company may become subject to additional liabilities and increased operating costs in the future under these laws and regulations. The impact of any such changes, which are unknown at this time, may have a material adverse effect on the Company's business, financial position, results of operations and cash flows.

To the extent the Company seeks acquisition opportunities, it may not be able to make acquisitions of suitable candidates or integrate acquisitions successfully.

In recent years, the Company has used acquisitions to expand into new markets and to enhance its position in its existing markets. To the extent it seeks to do so in the future it may not be able to successfully identify suitable candidates, negotiate appropriate acquisition terms, obtain financing needed to consummate those acquisitions, complete proposed acquisitions or successfully integrate acquired businesses into its existing operations. In addition, any acquisition, once successfully integrated, may not perform as planned, be accretive to earnings, or otherwise prove beneficial to the Company.

Acquisitions involve numerous risks, including the assumption of undisclosed or unindemnified liabilities, difficulties in the assimilation of the operations and the transfer of all necessary licenses and permits, technologies, services and products of the acquired companies and the diversion of management's attention from other business concerns. In addition, prior acquisitions have resulted, and future acquisitions could result, in the incurrence of substantial additional indebtedness and other expenses.

The Company faces significant global competition in each of its operating segments. If the Company cannot successfully compete in the marketplace, its business, financial position, results of operations and cash flows may be materially and adversely affected.

The Company faces significant competition from numerous global companies as well as national, regional and local companies in the markets it serves. Many of the Company's competitors have access to greater financial resources, which may enable them to invest significant capital into their businesses, including expenditures for research and development. Some of the Company's competitors have their own raw material resources and may be able to produce products more economically. In addition, some of the Company's customers have internal manufacturing capabilities that allow them to achieve make-versus-buy economics, which may result at times in the Company losing business with these customers in volumes that could adversely affect the Company's profitability.

To achieve expected profitability levels, the Company must, among other things, maintain the service levels, product quality and performance and competitive pricing necessary to retain existing customers and attract new customers as well as continue to develop and introduce new products. The Company's inability to do so could place it at a competitive disadvantage relative to its competitors, and if the Company cannot successfully compete in the marketplace, its business, financial position, results of operations and cash flows may be materially and adversely affected.

The volatility of raw material, natural gas and electricity costs, as well as any disruption in their supply may result in increased costs and materially and adversely affect the Company's business, financial position, results of operations and cash flows.

The costs of raw materials, natural gas and electricity represent a substantial portion of the Company's operating costs. The principal raw materials used in the Company's products are petroleum-based or plant-based. Natural gas is used in the Company's manufacturing sites primarily to generate steam for its manufacturing processes. The prices of many of these raw materials can be subject to periods of rapid and significant instability. These fluctuations in prices may be affected by supply and demand factors, such

as general economic conditions, regulatory developments with respect to and restrictions on the transport of raw materials (some of which may be viewed as hazardous), currency exchange rates, political instability or terrorist attacks, all of which are beyond the Company's control. The Company may not be able to pass increased raw material or energy costs on to customers through increases in product prices as a result of arrangements the Company has with certain customers and competitive pressures in the market. If the Company is unable to minimize the effects of increased raw material and energy costs or pass such increased costs on to customers, or manage any interruption to the supply of raw materials or energy, its business, financial position, results of operations and cash flows may be materially and adversely affected.

The Company relies heavily on third-party transportation to deliver raw materials to Company manufacturing facilities and ship products to Company customers. Disruptions in transportation or significant changes in transportation costs could affect the Company's business, financial position, results of operations and cash flows.

The Company relies heavily on railroads, ships, and other over-the-road shipping methods to transport raw materials to its manufacturing facilities and to ship finished products to customers. Transport operations are exposed to various risks, such as extreme weather conditions, natural disasters, technological problems, work stoppages, personnel shortages and operating hazards, as well as interstate and international transportation regulations. If the Company, its suppliers or third-party transportation operators experience transportation problems, or if there are significant changes in the cost of these services, the Company may not be able to arrange efficient alternatives and timely means to obtain raw materials or ship finished product, which could result in a material adverse effect on Company revenues, costs and operating results. For example, the U.S. Army Corps of Engineers plans to close certain locks on the Illinois River during the second half of 2020. The Company's Millsdale, Illinois facility uses the Illinois river for obtaining raw materials and shipping products. This closure could materially adversely affect the Company's costs and operating results.

Downturns in certain industries, in some cases driven by consumer preferences, and general economic downturns may have an adverse effect on the Company's business, financial position, results of operations and cash flows.

Economic downturns may adversely affect users of some end products that are manufactured using the Company's products and the industries in which such end products are used. For example, the implications of the novel coronavirus outbreak may impact not only markets in Asia, but broader markets as well. During economic downturns, these users may reduce their volume of purchases of such end products or may purchase alternative products, which would reduce demand for the Company's products. In addition, increasing concern among consumers, public health professionals and government agencies about health and wellness issues could lead some of the Company's customers to limit the use of certain of our products or result in harm to the Company's reputation.

Reduced demand from the primary end markets for the Company's products, such as the consumer products industry, could adversely affect the Company. Additionally, uncertain conditions in the credit markets pose a risk to the overall economy that may impact consumer demand for such end products and customer demand of some of the Company's products, as well as the Company's ability to manage normal commercial relationships with its customers, suppliers and creditors. Some of the Company's customers may not be able to meet the terms of sale and suppliers may not be able to fully perform their contractual obligations due to tighter credit markets or a general slowdown in economic activity.

In the event that economic conditions worsen or result in a prolonged downturn or recession, or consumer-driven preferences result in reduced demand for our products, the Company's business, financial position, results of operations and cash flows may be materially and adversely affected.

The Company's results of operations may be adversely affected by international business risks, including fluctuations in currency exchange rates, legal restrictions and taxes.

The Company has substantial operations outside the United States. In the year ended December 31, 2019, the Company's sales outside of the United States constituted approximately 40 percent of the Company's net sales. In addition to the risks described in this Annual Report on Form 10-K that are common to both the Company's U.S. and non-U.S. operations, the Company faces, and will continue to face, risks related to the Company's foreign operations such as:

- variability of intellectual property laws outside the United States, which may impact enforceability and consistency of protection of intellectual property assets;
- high levels of inflation;
- fluctuations in foreign currency exchange rates, which may affect product demand and may adversely affect the profitability in U.S. dollars of products and services the Company provides in international markets where payment for the Company's products and services is made in the local currency;
- political, economic, financial and market conditions, which may be unstable;

- changes in labor conditions and difficulties in staffing and managing international operations;
- corruption by government officials or other third parties or other adverse government actions;
- differing economic cycles and adverse economic conditions;
- trade and currency restrictions, including tariffs and currency exchange controls imposed by the United States and foreign countries;
- changes in foreign laws and tax rates or U.S. laws and tax rates with respect to foreign income, which may unexpectedly increase the rate at which the Company's income is taxed, impose new and additional taxes on remittances, repatriation or other payments by the Company's subsidiaries, or cause the loss of previously recorded tax benefits;
- greater difficulty enforcing contracts and collecting accounts receivable;
- enforceability and compliance with U.S. and foreign laws affecting operations outside of the United States, including the U.S. Foreign Corrupt Practices Act (FCPA) (and foreign equivalents), export controls and regulations administered by the Office of Foreign Assets Control; and
- evolving laws and regulations over chemicals and chemical production and transportation that could limit the Company's ability to sell products in certain markets (for example, the EU REACH regulation) and changing laws related to or the modification or non-renewal of operating permits and licenses that could result in material costs relating to regulatory compliance, liabilities, litigation proceedings, or other impacts, such as restrictions or prohibitions on our products.

The actual occurrence of any or all of the foregoing could have a material adverse effect on the Company's business, financial position, results of operations and cash flows in the future.

Various liability claims could materially and adversely affect the Company's financial position, operating results and cash flows.

The Company may be required to pay for losses or injuries purportedly caused by its products. The Company faces an inherent exposure to various types of claims including general liability, product liability, product recall, toxic tort and environmental, among others, if its products, or the end products that are manufactured with the Company's products, result in property damage, injury or death. In addition, because the Company conducts business in multiple jurisdictions, the Company also faces an inherent exposure to other general claims based on its operations in those jurisdictions and the laws of those jurisdictions, including but not limited to claims arising from its relationship with employees, distributors, agents and customers, and other parties with whom it has a business relationship, directly or indirectly. Many of these claims may be made against the Company even if there is no evidence of a loss from that claim, and these claims may be made by individual persons, groups of persons, or groups of plaintiffs in a class action. Defending these claims could result in significant legal expenses relating to defense costs and/or damage awards and diversion of management's time and the Company's resources. Any claim brought against the Company could materially and adversely affect the Company's business financial position, results of operations and cash flows.

If the Company is unable to protect its intellectual property rights, the Company's ability to compete may be negatively impacted.

The Company's patents and other intellectual property may not prevent competitors from independently developing or selling similar or duplicative products and services, and there can be no assurance that the resources the Company invests to protect its intellectual property will be sufficient or that the Company's intellectual property portfolio will adequately deter misappropriation or improper use of its technology. The Company could also face competition in some countries where it has not invested in an intellectual property portfolio, or where intellectual property rights are more difficult to obtain and/or assert. In addition, the Company may be the target of aggressive and opportunistic enforcement of patents by third parties, including non-practicing entities. Regardless of the merit of such claims, responding to infringement claims can be expensive and time-consuming. If the Company is found to infringe any third-party rights, it could be required to pay substantial damages or it could be enjoined from offering some of its products and services. Also, there can be no assurances that the Company will be able to obtain or renew from third parties the licenses it may need in the future on reasonable terms or at all.

The international scope of the Company's operations and corporate structure may expose the Company to potentially adverse tax consequences.

The Company is subject to taxation in and to the tax laws and regulations of multiple jurisdictions as a result of the international scope of its operations and corporate structure. The Company is also subject to intercompany pricing laws, including those relating to the flow of funds between its entities pursuant to, for example, purchase agreements, licensing agreements or other arrangements. Adverse developments in these laws or regulations, or any change in position regarding the application, administration or

interpretation of these laws or regulations in any applicable jurisdiction could have a material adverse effect on the Company's business, financial position, results of operations and cash flows. In addition, the tax authorities in any applicable jurisdiction may disagree with the positions the Company has taken or intends to take regarding the tax treatment or characterization of any of the Company's transactions, including the tax treatment or characterization of the Company's indebtedness. If any applicable tax authorities were to successfully challenge the tax treatment or characterization of any of the Company's transactions, it could result in the disallowance of deductions, the imposition of withholding taxes on internal deemed transfers or other consequences that could have a material adverse effect on the Company's business, financial position, results of operations and cash flows.

The Company's failure to comply with the anti-corruption laws of the United States and various international jurisdictions could negatively impact its reputation and results of operations.

Doing business on a worldwide basis requires the Company to comply with anti-corruption laws and regulations imposed by governments around the world with jurisdiction over our operations, which may include the FCPA and the U.K. Bribery Act 2010 (the Bribery Act), as well as the laws of the countries where the Company does business. These laws and regulations can apply to companies and individual directors, officers, employees and agents, and may restrict the Company's operations, trade practices, investment decisions and partnering activities. Where they apply, the FCPA and the Bribery Act prohibit, among other things, the Company and its officers, directors, employees and business partners, including joint venture partners and agents acting on the Company's behalf, from corruptly offering, promising, authorizing or providing anything of value to "foreign officials" for the purposes of influencing official decisions or obtaining or retaining business or otherwise obtaining favorable treatment. The Bribery Act also prohibits non-governmental "commercial" bribery and accepting bribes. Part of the Company's business may involve dealings with governments and state-owned business enterprises, the employees and representatives of which may be considered "foreign officials" for purposes of the FCPA and the Bribery Act. The Company is also subject to the jurisdiction of various governments and regulatory agencies around the world, which may bring Company personnel and agents into contact with "foreign officials" responsible for issuing or renewing permits, licenses, or approvals or for enforcing other governmental regulations. The Company's global operations, including in countries with high levels of perceived corruption, expose it to the risk of violating, or being accused of violating, anti-corruption laws. Any failure on the part of the Company to successfully comply with these laws and regulations may expose the Company to reputational harm as well as significant sanctions, including criminal fines, imprisonment of its employees or representatives, civil penalties, disgorgement of profits, injunctions and debarment from government contracts, as well as other remedial measures. Investigations of alleged violations can be expensive and disruptive. Compliance with these laws can increase the cost of doing business globally. The Company maintains policies and procedures designed to assist the Company and its subsidiaries in complying with applicable anti-corruption laws. However, there can be no guarantee that these policies and procedures will effectively prevent violations by Company employees or representatives for which the Company may be held responsible, and any such violation could materially and adversely affect the Company's reputation, business, financial position and results of operations.

Fluctuations in foreign currency exchange rates could affect Company financial results.

The Company is also exposed to fluctuations in foreign exchange rates. The Company's results of operations are reported in U.S. dollars. However, outside the United States, the Company's sales and costs are denominated in a variety of currencies including the European euro, British pound, Canadian dollar, Mexican peso, Colombian peso, Philippine peso, Brazilian real, Polish zloty, and Chinese RMB. The Company translates its local currency financial results into U.S. dollars based on average exchange rates prevailing during the reporting period or the exchange rate at the end of that period. During times of a strengthening U.S. dollar, the Company's reported international sales and earnings may be reduced because the local currency may translate into fewer U.S. dollars. Fluctuations in exchange rates may materially and adversely affect the Company's business, financial position, results of operations and cash flows.

In all jurisdictions in which the Company operates, the Company is also subject to laws and regulations that govern foreign investment, foreign trade and currency exchange transactions. These laws and regulations may limit the Company's ability to repatriate cash as dividends or otherwise to the United States or to efficiently allocate cash to support strategic initiatives, and may limit the Company's ability to convert foreign currency cash flows into U.S. dollars. A weakening of the currencies in which the Company generates sales relative to the foreign currencies in which the Company's costs are denominated may lower the Company's operating profits and cash flows.

The Company could be adversely affected by downgrades to its credit ratings or disruptions in its ability to access well-functioning capital markets.

Historically, the Company has relied on the debt capital markets to fund portions of its capital investments and access to bank credit facilities as part of its working capital management strategy. The Company's continued access to these markets, and the terms of such access, depend on multiple factors including the condition of debt capital markets, the Company's operating performance, and

its credit ratings. These ratings are based on a number of factors, which include rating agencies' assessment of the Company's financial strength and financial policies. There can be no assurance that any particular rating assigned to the Company will remain in effect for any given period of time or that a rating will not be changed or withdrawn by a rating agency, if in that rating agency's judgment, future circumstances relating to the basis of the rating so warrant. Incurrence of additional debt by the Company could adversely affect its credit ratings. The Company depends on banks and other financial institutions to provide credit to its business and perform under the Company's agreements with them. Defaults by one or more of these counterparties on their obligations to the Company could materially and adversely affect it. Any downgrade of the Company's credit ratings could materially adversely affect its cost of funds, liquidity, competitive position and access to capital markets and increase the cost of and counterparty risks associated with existing facilities, which could materially and adversely affect Company business operations, financial condition, and results of operations.

Conflicts, military actions, terrorist attacks and general instability, particularly in certain energy-producing nations, along with increased security regulations related to our industry, could adversely affect the Company's business.

Conflicts, military actions and terrorist attacks have precipitated economic instability and turmoil in financial markets. Instability and turmoil, particularly in energy-producing nations, may result in raw material cost increases. The uncertainty and economic disruption resulting from hostilities, military action or acts of terrorism may impact any or all of the Company's facilities and operations or those of its suppliers or customers. Accordingly, any conflict, military action or terrorist attack that impacts the Company or any of its suppliers or customers, or any resulting economic instability resulting from such conflict, military action or terrorist attack, could have a material adverse effect on the Company's business, results of operations, financial position and cash flows.

Cost overruns, delays and miscalculations in capacity needs with respect to the Company's expansion or other capital projects could adversely affect the Company's business, financial position, results of operations and cash flows.

From time to time, the Company initiates expansion and other significant capital projects. Projects of this type are subject to risks of delay or cost overruns inherent in any large construction project resulting from numerous factors, including the following: shortages of equipment, materials or skilled labor; work stoppages; unscheduled delays in the delivery of ordered materials and equipment; unanticipated cost increases; difficulties in obtaining necessary permits or in meeting permit conditions; difficulties in meeting regulatory requirements or obtaining regulatory approvals; availability of suppliers to certify equipment for existing and enhanced regulations; design and engineering problems; and failure or delay of third-party service providers, civil unrest and labor disputes. Significant cost overruns or delays in completing a capital project could have a material adverse effect on the Company's return on investment, results of operations and cash flows. In addition, if the Company misjudges its future capacity needs, this too could negatively impact its operations, financial condition and results of operations.

The Company relies extensively on information technology (IT) systems to conduct its business. Interruption of, damage to or compromise of the Company's IT systems and failure to maintain the integrity of customer, colleague or Company data could harm the Company's reputation and have an adverse effect on the Company's business, financial position, results of operations and cash flows.

The Company relies on IT systems in its operations, including production, supply chain, research and development, finance, human resource and regulatory functions. The Company's ability to effectively manage its business depends on the security, reliability and adequacy of these systems. IT system failures due to events including but not limited to network disruptions, programming errors, computer viruses and security breaches (e.g., cyber-attacks) could impact production activities, impede shipment of products, cause delays or cancellations of customer orders, or hamper the processing of transactions or reporting of financial results. These or similar occurrences, whether accidental or intentional, could result in theft, unauthorized use or publication of our intellectual property or confidential business information of our employees, customers, suppliers or other third parties, which could harm our reputation and competitive position, reduce the value of our investments in research and development and other strategic initiatives, result in a loss of business, as well as remedial and other costs, fines, investigations, enforcement actions or lawsuits or otherwise materially and adversely affect our business.

The Company continues to develop and enhance controls and security measures designed to protect against the risk of theft, loss or fraudulent or unlawful use of customer, supplier, third party, employee or Company data, and it maintains an ongoing process to re-evaluate the adequacy of its controls and measures. The Company may also be required to expend additional resources to continue to enhance its information privacy and security measures and/or to investigate and remediate any information security vulnerabilities. The Company maintains what it believes to be adequate and collectible insurance in the event of the theft, loss, fraudulent or unlawful use of customer, supplier, third party, employee or Company data, but any such occurrences could result in costs that may not be covered or may be in excess of any available insurance that the Company may have procured. While the Company has a comprehensive program in place for continuously reviewing, maintaining, testing and upgrading its IT systems and security, there can

be no assurance that such efforts will prevent breakdowns of or breaches in Company IT systems that could materially and adversely affect the Company's business, financial position, results of operations and cash flows.

The Company's success depends on its executive management and other key personnel.

The Company's future success depends to a significant degree on the skills, experience and efforts of its executive management and other key personnel and their ability to provide the Company with uninterrupted leadership and direction. The availability of highly qualified talent is limited and the competition for talent is robust; as a result, the Company may not be able to recruit and retain the personnel it needs if it were to lose an existing member of executive management or other key personnel. The Company's future success will depend on its ability to have adequate succession plans in place and to attract, retain and develop qualified personnel. A failure to efficiently replace members of executive management and other key personnel and to attract, retain and develop new qualified personnel could have a material and adverse effect on the Company's business financial position, results of operations and cash flows.

The Company has a significant amount of indebtedness and may incur additional indebtedness, or need to refinance existing indebtedness, in the future, which may adversely affect the Company's business, financial position, results of operations and cash flows.

The Company has a significant amount of indebtedness and may incur additional indebtedness in the future. As of December 31, 2019, the Company had \$222.1 million of debt on its balance sheet. U.S. debt consisted of \$222.1 million in unsecured promissory notes with maturities extending from 2020 until 2027. In addition, on December 31, 2019 the Company was party to a \$350.0 million credit facility.

Certain of the Company's foreign subsidiaries periodically maintain bank term loans and short-term bank lines of credit in their respective countries to meet working capital requirements as well as to fund capital expenditure programs and acquisitions. As of December 31, 2019, the Company's foreign subsidiaries did not have any outstanding debt.

The Company's current indebtedness and any additional indebtedness incurred in the future may materially and adversely affect its business, financial position, results of operations and cash flows. For example, such indebtedness could:

- require the Company to dedicate a substantial portion of cash flow from operations to pay principal and interest on the Company's debt, which would reduce funds available to fund future working capital, capital expenditures and other general operating requirements;
- limit the Company's ability to borrow funds that may be needed to operate and expand its business;
- limit the Company's flexibility in planning for or reacting to changes in the Company's business and the industries in which the Company operates;
- increase the Company's vulnerability to general adverse economic and industry conditions or a downturn in the Company's business; and
- place the Company at a competitive disadvantage compared to its competitors that have less debt.

The Company's loan agreements contain customary provisions that, among other things, require maintenance of certain financial ratios and place limitations on additional debt, investments and payment of dividends. The Company's ability to comply with these provisions may be affected by events beyond our control. Failure to comply with these loan agreement provisions would require debt restructuring that could be materially adverse to the Company's financial position, results of operations and cash flows.

An increase in interest rates could limit the Company's ability to incur additional debt to fund the Company's strategic plans or to refinance maturing debt without incurring significant additional cost, and could make borrowings under the Company's credit facility or other floating rate debt materially more expensive. Additionally, any future disruptions in the credit and financial markets may reduce the availability of debt financing or refinancing and increase the costs associated with such financing. If the Company is unable to secure financing on satisfactory terms, or at all, its business financial position, results of operations and cash flows may be materially and adversely affected.

Item 1B. Unresolved Staff Comments

None

Item 2. Properties

The following are the Company's principal physical properties. Unless otherwise noted, the listed properties are owned by the Company. Management believes that the facilities are suitable and adequate for the Company's current operations.

	Name of Facility	Location	Site Size	Segment
1.	Millsdale	Millsdale (Joliet), Illinois	492 acres	Surfactants/Polymers
2.	Winder	Winder, Georgia	202 acres	Surfactants
3.	Maywood	Maywood, New Jersey	19 acres	Surfactants / Specialty Products
4.	Stepan France	Voreppe, France	20 acres	Surfactants
5.	Stepan Ecatepec	Ecatepec, Mexico	34 acres	Surfactants
6.	Stepan China	Nanjing, China (Nanjing Chemical Industrial Park)	13 acres (right of use arrangement)	Polymers
7.	Stepan Brazil	Vespasiano, Minas Gerais, Brazil	27 acres	Surfactants
8.	Company Headquarters and Central Research Laboratories	Northfield, Illinois	8 acres	N/A
9.	Company Corporate Supply Chain, Finance, Human Resources, Information Technology and Legal Functions	Northbrook, Illinois	3.25 acres	N/A

Item 3. Legal Proceedings

There are a variety of legal proceedings pending or threatened against the Company that occur in the normal course of the Company's business, the majority of which relate to environmental assessment, protection and remediation matters. Some of these proceedings may result in fines, penalties, judgments or costs being assessed against the Company at some future time. The Company's operations are subject to extensive local, state and federal legislation and regulations, including CERCLA and the Superfund amendments of 1986 (Superfund) as well as comparable regulations applicable to the Company's foreign locations. Over the years, the Company has received requests for information related to, or has been named by government authorities as a potentially responsible party (PRP) at, a number of sites where cleanup costs have been or may be incurred by the Company under CERCLA and similar state statutes. In addition, damages are being claimed against the Company in general liability actions for alleged personal injury or property damage in the case of some disposal and plant sites. The Company believes that it has made adequate provisions for the costs it is likely to incur with respect to these sites and claims. While the Company is unable to predict the outcome of these matters, it does not believe, based upon current available facts, that the ultimate resolution of any of these matters will have a material effect on its overall financial position. The Company's material legal proceedings are described below:

Maywood, New Jersey Site

The Company's property in Maywood, New Jersey and property formerly owned by the Company adjacent to its current site and other nearby properties (collectively, the Maywood site) were listed on the National Priorities List in September 1993 pursuant to the provisions of CERCLA because of alleged chemical contamination. Pursuant to (i) a September 21, 1987 Administrative Order on Consent entered into between the USEPA and the Company for property formerly owned by the Company at the Maywood site and (ii) the issuance of an order on November 12, 2004 by the USEPA to the Company for property currently owned by the Company at the Maywood site, the Company has completed various remedial investigation feasibility studies (RI/FS), and on September 24, 2014, USEPA issued its Record of Decision (ROD) for chemically-contaminated soil at the Maywood site, which requires Stepan to perform remedial cleanup of the soil and buried waste. The USEPA has not yet issued a ROD for chemically-contaminated groundwater for the Maywood site. Based on the most current information available, the Company believes its recorded liability is reasonable having considered the range of estimated costs of remediation for the Maywood site. The estimate of the cost of remediation for the Maywood site could change as the Company continues to hold discussions with USEPA, as the design of the remedial action is finalized, if a groundwater ROD is issued or if other PRPs are identified. The ultimate amount for which the Company is liable could differ materially from the Company's current recorded liability.

In April 2015, the Company entered into an Administrative Settlement Agreement and Administrative Order on Consent with USEPA, which requires payment of certain costs and performance of certain investigative and design work for chemically-contaminated soil. Based on the Company's review and analysis of this order, no changes to the Company's current recorded liability for claims associated with soil remediation of chemical contamination at the Maywood site were required.

In addition, under the terms of a settlement agreement reached on November 12, 2004, the U.S. Department of Justice and the Company agreed to fulfill the terms of a Cooperative Agreement reached in 1985 under which the United States has taken title to and is responsible for the removal of radioactive waste at the Maywood site, and has incurred past and will incur future remediation costs incurred by the United States. As such, the Company recorded no liability related to this settlement agreement.

D'Imperio Property Site

During the mid-1970's, Jerome Lightman and the Lightman Drum Company disposed of hazardous substances generated by the Company at several sites in New Jersey, including the D'Imperio Property Superfund Site located in New Jersey (the D'Imperio site). The Company was named as a PRP in an October 2, 1998 lawsuit in the U.S. District Court for the District of New Jersey that involved the D'Imperio site. In 2019, the PRPs were provided with updated remediation cost estimates by the PRP group technical consultant and project manager, which the Company considered in its determination of its range of estimated possible losses and liability balance. The changes in range of possible losses and liability balance related to such updated remediation cost estimates were immaterial. Remediation work is continuing at the D'Imperio site. Based on current information, the Company believes that its recorded liability is reasonable having considered the range of estimated costs of remediation for the D'Imperio site. Depending on the ultimate cost of the remediation at this site, the amount for which the Company is liable could differ materially from the current estimates.

Wilmington Site

The Company is currently contractually obligated to contribute to the environmental response costs associated with the Company's formerly-owned site in Wilmington, Massachusetts (the Wilmington site). Remediation at this site is being managed by its current owner, to whom the Company sold the property in 1980. Under the Company's October 1, 1993 agreement with the current owner of the Wilmington site, once total site remediation costs exceed certain levels, the Company is obligated to contribute

up to five percent of future response costs associated with this site with no limitation on the ultimate amount of the Company's contributions. The Company had paid the current owner \$2.8 million for the Company's portion of environmental response costs at the Wilmington site through December 31, 2019. The Company has recorded a liability for its portion of the estimated remediation costs for the site. Depending on the ultimate cost of the remediation at this site, the amount for which the Company is liable could differ materially from the current estimates.

The Company and other prior owners of the Wilmington site also entered into an agreement in April 2004 waiving certain statute of limitations defenses for claims that may be filed by the Town of Wilmington, Massachusetts, in connection with this site. While the Company has denied any liability for any such claims, the Company agreed to this waiver while the parties continue to discuss the resolution of any potential claim which may be filed.

Federal Insecticide, Fungicide and Rodenticide Act

On April 3, 2019, the Company received a pre-filing notice from USEPA for alleged violations of FIFRA associated with three of the Company's biocide products sold by a licensed distributor. On June 12, 2019, USEPA issued a Consent Agreement and Final Order (CAFO) to the Company for the alleged FIFRA violations. The CAFO assessed a civil penalty of \$612,718, which the Company paid on July 10, 2019.

Other U.S. Sites

Through the regular environmental monitoring of its plant production sites, the Company discovered levels of chemical contamination that were above thresholds allowed by law at its Millsdale, Illinois and Fieldsboro, New Jersey plants. The Company voluntarily reported its results to the applicable state environmental agencies. As a result, the Company is required to perform remediation of the affected areas. In the fourth quarter of 2016, the Company recognized a charge for the estimated costs of remediating the sites. Remediation work is continuing at these sites. Based on current information, the Company believes that its recorded liability for the remediation of the affected areas is appropriate based on estimate of expected costs. However, actual costs could differ materially from current estimates.

Item 4. Mine Safety Disclosures

Not Applicable.

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

(a) The Company's common stock is listed and traded on the New York Stock Exchange under the symbol SCL.

On January 31, 2020, there were 1,716 holders of record of the Company's common stock.

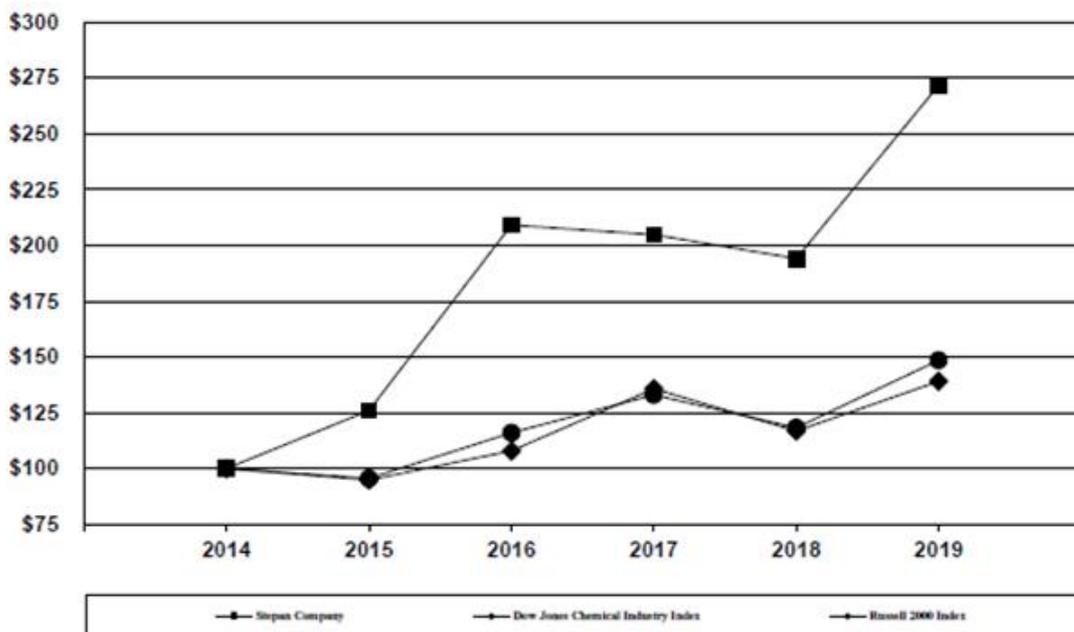
(b) Below is a summary by month of shares purchases by the Company during the fourth quarter of 2019:

<u>Period</u>	<u>Total Number of Shares Purchased</u>	<u>Average Price Paid per Share</u>	<u>Total Number of Shares Purchased as Part of Publicly Announced Plans or Programs (1)</u>	<u>Maximum Number of Shares that May Yet Be Purchased Under the Plans or Programs (1)</u>
October	274 (2)	\$ 98.67	—	349,830
November	3,145 (2)	\$ 100.61	—	349,830
December	154 (2)	\$ 93.60	—	349,830
Total	3,573	\$ 100.16	—	349,830

- (1) On February 19, 2013, the Company's Board of Directors authorized the Company to repurchase up to 1,000,000 shares of its outstanding common stock.
- (2) Represents shares of Company common stock tendered by employees to settle statutory withholding taxes related to the exercise of stock appreciation rights (SARs).

(c) Stock Performance Graph

The following stock performance graph compares the yearly change since December 31, 2014, in cumulative return on the common stock of the Company on a dividend reinvested basis to the Dow Jones Chemical Industry Index and the Russell 2000 Index. The Dow Jones Chemical Industry Index is a market-capitalization weighted grouping of 35 chemical companies, including major manufacturers of both basic and specialty products. The Company is not included in the Dow Jones Chemical Industry Index. The Russell 2000 Index is a market-capitalization weighted grouping of 2,000 small to medium sized companies in a broad range of industries. The Company has been included in the Russell 2000 Index since 1992. The graph assumes \$100 was invested on December 31, 2013, and shows the cumulative total return as of each December 31 thereafter.



	Cumulative Value at December 31*					
	2014	2015	2016	2017	2018	2019
Stepan Company	\$100.00	\$125.96	\$209.12	\$204.81	\$194.16	\$271.74
Dow Jones Chemical Industry Index	\$100.00	\$94.85	\$107.91	\$135.75	\$116.76	\$139.06
Russell 2000 Index	\$100.00	\$95.59	\$115.95	\$132.94	\$118.30	\$148.49

* Assumes \$100.00 invested on December 31, 2014, in Stepan Company Stock, Dow Jones Chemical Industry Index and Russell 2000 Index.

Item 6. Selected Financial Data*(In thousands, except per share data)*

<i>For the Year</i>	2019	<i>2018 As Adjusted</i>	<i>2017 As Adjusted</i>	<i>2016 As Adjusted</i>	<i>2015 As Adjusted</i>
Net Sales	\$ 1,858,745	\$ 1,993,857	\$ 1,925,007	\$ 1,766,166	\$ 1,776,167
Operating Income (1)	127,260	149,265	154,840	135,532	108,749
Percent of Net Sales (1)	6.8%	7.5%	8.0%	7.7%	6.1%
Income Before Provision for Income Taxes (1)	125,899	137,769	146,882	121,518	86,687
Percent of Net Sales (1)	6.8%	6.9%	7.6%	6.9%	4.9%
Provision for Income Taxes (1)	22,798	26,664	46,139	30,512	20,661
Net Income Attributable to Stepan Company (1)	103,129	111,117	100,774	90,999	65,957
Per Diluted Share (1)	4.42	4.76	4.31	3.94	2.89
Percent of Net Sales (1)	5.5%	5.6%	5.2%	5.2%	3.7%
Percent to Total Stepan Company Stockholders' Equity (1)(2)	12.1%	14.1%	14.2%	14.9%	12.0%
Cash Dividends Paid	23,097	20,857	18,907	17,329	16,300
Per Common Share	1.03	0.93	0.86	0.78	0.73
Depreciation and Amortization	78,701	81,115	79,022	74,967	66,985
Capital Expenditures	105,572	86,647	78,613	103,076	119,349
Weighted-average Common Shares Outstanding (Diluted)	23,316	23,325	23,377	23,094	22,858
<i>As of Year End</i>					
Working Capital (1)	\$ 479,675	\$ 495,311	\$ 502,000	\$ 414,148	\$ 394,499
Current Ratio (1)	2.4	2.5	2.6	2.4	2.6
Property, Plant and Equipment, Net	639,317	608,892	598,443	582,714	555,463
Total Assets (1)	1,579,367	1,514,614	1,502,892	1,378,671	1,257,046
Long-term Debt Obligations, Less Current Maturities	198,532	239,022	268,299	288,859	313,817
Total Stepan Company Stockholders' Equity (1)	891,783	807,425	765,400	650,712	568,284

(1) The 2018, 2017, 2016 and 2015 amounts for the noted line items have been retrospectively changed from the amounts originally reported as a result of the Company's first quarter 2019 change in method of accounting for U.S. inventory valuation from the last in, first out (LIFO) method to the first in first out (FIFO) method.

(2) Based on average equity.

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

The following is management's discussion and analysis (MD&A) of certain significant factors that have affected the Company's financial condition and results of operations during the annual periods included in the accompanying consolidated financial statements.

Overview

The Company produces and sells intermediate chemicals that are used in a wide variety of applications worldwide. The overall business comprises three reportable segments:

- Surfactants – Surfactants, which accounted for 68 percent of the Company's consolidated net sales in 2019, are principal ingredients in consumer and industrial cleaning products such as detergents for washing clothes, dishes, carpets, floors and walls, as well as shampoos and body washes. Other applications include fabric softeners, germicidal quaternary compounds, lubricating ingredients, emulsifiers for spreading agricultural products and industrial applications such as latex systems, plastics and composites. Surfactants are manufactured at five U.S. sites, two European sites (United Kingdom and France), five Latin American sites (Colombia and two sites in each of Mexico and Brazil) and two Asian sites (Philippines and Singapore). Recent significant Surfactants events include:
 - During January 2019, the Company's plant in Ecatepec, Mexico experienced a sulfonation equipment failure that contributed to an operating loss at the site in 2019. The Ecatepec facility is now fully operational and, in December 2019, the Company received insurance recovery proceeds for damaged equipment, incremental supply chain expenses and business interruption. This plant, and a portion of its related surfactant business, was acquired from BASF in March 2018 (see Note 21, *Acquisitions* and Note 24, *Insurance Recovery* for additional details).
 - In December 2019 the Company acquired an oilfield demulsifier product line. The Company believes this acquisition will accelerate its strategy to diversify into additional application segments within the oilfield markets. The acquired business did not impact the Company's 2019 financial results nor is it expected to be accretive to earnings in 2020 (see Note 21, *Acquisitions*, for additional details)
 - During the fourth quarter of 2018, the Company shut down Surfactant operations at its plant site in Germany. The Company ceased Surfactant production at this site to further reduce its fixed cost base, refocus Surfactant resources on higher margin end markets and allow for select assets to be repurposed to support future polyol growth. Decommissioning costs associated with the shutdown were incurred throughout 2019 (see Note 23, *Business Restructuring*, for additional details).
 - In 2016, the Company shut down its production facility in Canada, moving the production of goods previously manufactured in Canada to other Company North American production sites. Manufacturing operations at the facility ceased in the fourth quarter of 2016, but decommissioning activities have been ongoing since 2017 and will continue throughout 2020 (see Note 23, *Business Restructuring*, for additional details).
- Polymers – Polymers, which accounted for 28 percent of consolidated net sales in 2019, include polyurethane polyols, polyester resins and phthalic anhydride. Polyurethane polyols are used in the manufacture of rigid foam for thermal insulation in the construction industry and are also a base raw material for coatings, adhesives, sealants and elastomers (collectively, CASE products). Powdered polyester resins are used in coating applications. CASE and powdered polyester resins are collectively referred to as specialty polyols. Phthalic anhydride is used in unsaturated polyester resins, alkyd resins and plasticizers for applications in construction materials and components of automotive, boating and other consumer products. In addition, the Company uses phthalic anhydride internally in the production of polyols. In the United States, polyurethane polyols and phthalic anhydride are manufactured at the Company's Millsdale, Illinois, site, and specialty polyols are manufactured at the Company's Columbus, Georgia, site. In Europe, polyurethane polyols are manufactured by the Company's subsidiary in Germany, and specialty polyols are manufactured by the Company's Poland subsidiary. In China, polyurethane polyols and specialty polyols are manufactured at the Company's Nanjing, China, manufacturing plant.
- Specialty Products – Specialty Products, which accounted for four percent of consolidated net sales in 2019, include flavors, emulsifiers and solubilizers used in food, flavoring, nutritional supplement and pharmaceutical applications. Specialty

products are primarily manufactured at the Company's Maywood, New Jersey, site and, in some instances, by third-party contractors.

- o During 2019, the Company restructured its Specialty Products office in the Netherlands and eliminate positions from the site's supply chain, quality control and research and development areas. This restructuring was designed to better align the number of personnel with current business requirements and reduce costs at the site (see Note 23, *Business Restructuring*, for additional details).

Change in Accounting Principle

During the first quarter of 2019 the Company elected to change its method of accounting for U.S. inventory valuation from the LIFO basis to the FIFO basis. Non-U.S. inventories have historically been maintained on the FIFO basis. The Company believes that this change to the FIFO method of inventory valuation is preferable as it provides a better matching of costs with the physical flow of goods, more accurately reflects the current market value of inventory presented on the Company's consolidated balance sheet, standardizes the Company's inventory valuation methodology and improves comparability with the Company's industry peers. The Company has retrospectively applied this change to its prior year financial statement comparables. (See Note 2, *Change in Method of Accounting for Inventory Valuation*, for additional details).

2019 Acquisition

On December 17, 2019, the Company acquired an oilfield demulsifier product line. The purchase price of the acquisition was \$9,000,000 and was paid with cash on hand. This acquisition was accounted for as a business combination and the assets were measured and recorded at their estimated fair values. The primary assets acquired were intangibles, mostly comprised of goodwill (\$3,497,000), product know-how (\$1,500,000) and customer relationships (\$3,200,000). A small amount of inventory was also acquired. All the acquired assets are included within the Company's Surfactants segment. The fair value analysis remains in process and is expected to be finalized during the first half of 2020. The acquired business did not impact the Company's 2019 financial results.

Deferred Compensation Plans

The accounting for the Company's deferred compensation plans can cause period-to-period fluctuations in Company expenses and profits. Compensation expense results when the value of Company common stock and mutual fund investment assets held for the plans increase, and compensation income results when the value of Company common stock and mutual fund investment assets decline. The pretax effect of all deferred compensation-related activities (including realized and unrealized gains and losses on the mutual fund assets held to fund the deferred compensation obligations) and the income statement line items in which the effects of the activities were recorded are presented in the following table:

<i>(In millions)</i>	Income (Expense) For the Year Ended December 31		Change
	2019	2018	
Deferred Compensation (Operating expenses)	\$ (15.1)	\$ 2.3	\$ (17.4) (1)
Investment Income (Other, net)	0.9	1.5	(0.6)
Realized/Unrealized Gains (Losses) on Investments (Other, net)	3.8	(2.7)	6.5
Pretax Income Effect	<u>\$ (10.4)</u>	<u>\$ 1.1</u>	<u>\$ (11.5)</u>

<i>(In millions)</i>	Income (Expense) For the Year Ended December 31		Change
	2018	2017	
Deferred Compensation (Operating expenses)	\$ 2.3	\$ (4.8)	\$ 7.1 (1)
Investment Income (Other, net)	1.5	0.9	0.6
Realized/Unrealized Gains on Investments (Other, net)	(2.7)	4.0	(6.7)
Pretax Income Effect	<u>\$ 1.1</u>	<u>\$ 0.1</u>	<u>\$ 1.0</u>

- (1) See the Segment Results – Corporate Expenses sections of this MD&A for details regarding the period-over-period changes in deferred compensation.

Below are the year-end Company common stock market prices used in the computation of deferred compensation income and expense:

	December 31			
	2019	2018	2017	2016
Company Stock Price	\$ 102.44	\$ 74.00	\$ 78.97	\$ 81.48

Effects of Foreign Currency Translation

The Company's foreign subsidiaries transact business and report financial results in their respective local currencies. As a result, foreign subsidiary income statements are translated into U.S. dollars at average foreign exchange rates appropriate for the reporting period. Because foreign exchange rates fluctuate against the U.S. dollar over time, foreign currency translation affects year-over-year comparisons of financial statement items (i.e., because foreign exchange rates fluctuate, similar year-to-year local currency results for a foreign subsidiary may translate into different U.S. dollar results). The following tables present the effects that foreign currency translation had on the year-over-year changes in consolidated net sales and various income line items for 2019 compared to 2018 and 2018 compared to 2017:

(In millions)	For the Year Ended December 31		Increase (Decrease)	(Decrease) Due to Foreign Currency Translation
	2019	2018 (1)		
Net Sales	\$ 1,858.7	\$ 1,993.9	\$ (135.2)	\$ (37.3)
Gross Profit	339.7	339.3	0.4	(5.0)
Operating Income	127.3	149.3	(22.0)	(2.5)
Pretax Income	125.9	137.8	(11.9)	(2.4)

(In millions)	For the Year Ended December 31		Increase (Decrease)	Increase Due to Foreign Currency Translation
	2018 (1)	2017 (1)		
Net Sales	\$ 1,993.9	\$ 1,925.0	68.9	\$ 9.9
Gross Profit	\$ 339.3	\$ 346.2	(6.9)	2.6
Operating Income	\$ 149.3	\$ 154.8	(5.5)	1.7
Pretax Income	\$ 137.8	\$ 146.9	(9.1)	1.6

- (1) The 2018 and 2017 gross profit, operating income and pretax income line items have been retrospectively changed from the amounts originally reported as a result of the Company's first quarter 2019 change in method of accounting for U.S. inventory valuation from LIFO to FIFO.

Results of Operations

2019 Compared with 2018

Summary

Net income attributable to the Company for 2019 decreased seven percent from \$111.1 million, or \$4.76 per diluted share in 2018 to \$103.1 million, or \$4.42 per diluted share, in 2019. Adjusted net income increased seven percent to \$119.4 million, or \$5.12 per diluted share, from \$111.7 million, or \$4.79 per diluted share in 2018 (see the "Reconciliations of Non-GAAP Adjusted Net Income and Diluted Earnings per Share" section of this MD&A for reconciliations between reported net income attributable to the Company and reported earnings per diluted share and non-GAAP adjusted net income and adjusted earnings per diluted share). Below is a summary discussion of the major factors leading to the year-over-year changes in net sales, profits and expenses. A detailed discussion of segment operating performance for 2019 compared to 2018 follows the summary.

Consolidated net sales decreased \$135.1 million, or seven percent, between years. Lower average selling prices negatively impacted the year-over-year change in net sales by \$60.8 million. The decrease in average selling prices was primarily due to the pass through of lower raw material costs. Foreign currency translation negatively impacted the year-over-year change in net sales by \$37.3 million due to a stronger U.S. dollar against the majority of currencies where the Company has foreign operations. Consolidated sales volume decreased two percent and negatively impacted the change in net sales by \$37.0 million. Sales volume in the Surfactant segment decreased three percent while sales volume in the Polymer and Specialty Product segments increased four and one percent, respectively.

Operating income declined \$22.0 million, or 15 percent, between years. The majority of this decrease reflects higher deferred compensation expenses in 2019. Deferred compensation expenses increased \$17.5 million year-over-year. Corporate expenses, excluding deferred compensation and business restructuring expenses, were up \$1.6 million year-over-year. The majority of this

increase reflects higher environmental remediation expense recognized in 2019. From a segment perspective, Specialty Product and Polymer operating income improved by \$4.8 million and \$3.2 million, respectively, whereas Surfactant operating income declined by \$10.7 million. Foreign currency translation had an unfavorable \$2.5 million effect on year-over-year consolidated operating income.

Operating expenses (including deferred compensation expense and business restructuring expenses) increased \$22.4 million, or 12 percent, between years. Changes in the individual income statement line items that comprise the Company's operating expenses were as follows:

- Selling expenses increased \$0.6 million, or one percent, year-over-year.
- Administrative expenses increased \$3.3 million, or four percent, year over year. The increase was primarily due to higher environmental remediation and legal expenses. The majority of the environmental remediation costs relate to the Company's Maywood, New Jersey site and the Company's formerly-owned site in Wilmington, Massachusetts. Non-recurring employee separation costs incurred in 2018 partially offset the above.
- Research, development and technical service (R&D) expenses increased \$0.8 million, or one percent, year over year.
- Deferred compensation expense increased \$17.5 million year-over-year primarily due to a \$28.44 per share increase in the market price of Company common stock during 2019 compared to a \$4.97 per share decrease in 2018. See the *Overview* and *Segment Results - Corporate Expenses* sections of this MD&A for further details.
- Business restructuring expenses were \$2.7 million in 2019 versus \$2.6 million in 2018. The 2019 restructuring expenses were primarily comprised of severance and office shutdown expenses related to the Specialty Products segment restructuring (\$0.7 million), ongoing decommissioning costs associated with the Company's manufacturing facility in Canada that ceased operations in the fourth quarter of 2016 (\$1.4 million), and decommissioning expenses associated with the Company's 2018 sulfonation shut down in Germany (\$0.9 million). The 2018 restructuring expenses were comprised of asset and spare parts write-downs related to the Company's decision to cease Surfactant operations in Germany (\$1.4 million) and decommissioning costs associated with the Canadian plant closure (\$1.2 million). See Note 23 to the consolidated financial statements for additional information.

Net interest expense in 2019 declined \$4.8 million, or 45 percent, versus prior year. This decrease was primarily attributable to the combination of higher interest earned on U.S. cash balances and lower interest expense resulting from scheduled debt repayments and the Company's voluntary prepayment of its 5.88% Senior Notes in the second quarter of 2019. The higher interest on U.S. cash balances was principally due to foreign cash repatriation of \$100.0 million to the United States in the fourth quarter of 2018.

Other, net was \$4.6 million of income in 2019 versus \$0.7 million of expense in 2018. The Company recognized \$4.9 million of investment gains (including realized and unrealized gains and losses) for the Company's deferred compensation and supplemental defined contribution mutual fund assets in 2019 compared to \$1.4 million of losses in 2018. In addition, the Company reported foreign exchange gains of \$0.1 million in 2019 versus \$1.9 million of gains in 2018. The Company also reported \$0.9 million of lower net periodic pension cost expense in 2019 versus the prior year. Other miscellaneous items resulted in \$0.1 million of higher expense in 2019.

The year-to-date effective tax rate was 18.1 percent in 2019 compared to 19.4 percent in 2018. This decrease was primarily attributable to incremental U.S. research and development tax credits, partially offset by other non-recurring favorable tax benefits recognized in 2018. See Note 10 to the consolidated financial statements for a reconciliation of the statutory U.S. federal income tax rate to the effective tax rate.

Segment Results

<i>(In thousands)</i>	For the Year Ended			Percent Change
	December 31, 2019	December 31, 2018	(Decrease)	
Net Sales				
Surfactants	\$ 1,272,723	\$ 1,385,932	\$ (113,209)	-8
Polymers	512,347	527,420	(15,073)	-3
Specialty Products	73,675	80,505	(6,830)	-8
Total Net Sales	\$ 1,858,745	\$ 1,993,857	\$ (135,112)	-7

(In thousands)	For the Year Ended		Increase (Decrease)	Percent Change
	December 31, 2019	December 31, 2018 (1)		
Operating Income				
Surfactants	\$ 122,780	\$ 133,518	\$ (10,738)	-8
Polymers	69,567	66,373	3,194	5
Specialty Products	16,415	11,661	4,754	41
Segment Operating Income	\$ 208,762	\$ 211,552	\$ (2,790)	-1
Corporate Expenses, Excluding Deferred Compensation and Restructuring	63,618	62,028	1,590	3
Deferred Compensation Expense (Income)	15,140	(2,329)	17,469	NM
Business Restructuring	2,744	2,588	156	6
Total Operating Income	\$ 127,260	\$ 149,265	\$ (22,005)	-15

- (1) The 2018 segment and total operating income line items have been retrospectively changed from the amounts originally reported as a result of the Company's first quarter 2019 change in method of accounting for U.S. inventory valuation from LIFO to FIFO.

Surfactants

Surfactants 2019 net sales decreased \$113.2 million, or eight percent, versus 2018 net sales. The unfavorable impact of lower sales volume, lower average selling prices and foreign currency translation negatively impact the year-over-year change in net sales by \$48.1 million, \$40.8 million and \$24.3 million, respectively. Sales volume decreased three percent year-over-year. Approximately 46 percent of the decline in sales volume was due to the Company's exit from its sulfonation business in Germany during the fourth quarter of 2018. A year-over-year comparison of net sales by region follows:

(In thousands)	For the Year Ended		(Decrease)	Percent Change
	December 31, 2019	December 31, 2018		
North America	\$ 766,341	\$ 831,592	\$ (65,251)	-8
Europe	240,711	276,742	(36,031)	-13
Latin America	212,405	212,824	(419)	0
Asia	53,266	64,774	(11,508)	-18
Total Surfactants Segment	\$ 1,272,723	\$ 1,385,932	\$ (113,209)	-8

Net sales for North American operations decreased \$65.3 million, or eight percent, between years. Lower average selling prices, a two percent decline in sales volume and the unfavorable impact of foreign currency translation negatively impacted the year-over-year change in net sales by \$44.2 million, \$20.4 million and \$0.7 million, respectively. Selling prices decreased five percent mostly due to the pass through of lower raw material costs to customers. The decline in sales volume was mostly due to lower personal care commodity demand due to one customer losing an important share of business and lower sales volume to our distribution partners due to lower demand. The foreign currency impact reflected a stronger U.S. dollar relative to the Canadian dollar.

Net sales for European operations declined \$36.0 million, or 13 percent, primarily due to a nine percent decrease in sales volume and the unfavorable effects of foreign currency translation. These items negatively impacted the year-over-year change in net sales by \$24.0 million and \$12.8 million, respectively. The lower sales volume was principally due to the Company ceasing Surfactant production at its German site during the fourth quarter of 2018. A stronger U.S. dollar relative to the European euro and British pound sterling led to the foreign currency translation effect. Slightly higher selling prices favorably impacted the year-over-year change in net sales by \$0.8 million.

Net sales for Latin American operations were flat year-over-year. Higher average selling prices positively impacted the year-over-year change in net sales by \$16.9 million. The unfavorable impact of foreign currency translation and a three percent decrease in sales volume negatively impacted the year-over-year change in net sales by \$11.6 million and \$5.7 million, respectively. The higher average selling prices were partially due to one-time benefits related to a VAT tax recovery in Brazil. The decline in sales volume is mostly attributable to lower sales volume to our distribution partners partially offset by higher demand in the agricultural end markets. The year-over-year strengthening of the U.S. dollar against the Colombian peso and Brazilian real generated most of the unfavorable foreign currency effect.

Net sales for Asian operations declined \$11.5 million, or 18 percent, primarily due to an 11 percent decline in sales volume and lower selling prices. These items negatively impacted the year-over-year change in net sales by \$6.9 million and \$5.3 million, respectively. The decline in sales volume was largely due to lower commodity demand in the laundry and cleaning end markets and

lower sales volume to our distribution partners. The lower selling prices were mostly due to the pass through of lower raw material costs to customers. The favorable impact of foreign currency translation positively impacted the change in net sales by \$0.7 million.

Surfactant operating income for 2019 declined \$10.7 million, or eight percent, versus operating income reported in 2018. Gross profit declined \$8.6 million, or four percent, and operating expenses increased two percent year-over-year. Year-over-year comparisons of gross profit by region and total segment operating expenses and operating income follow:

(In thousands)	For the Year Ended		Increase (Decrease)	Percent Change
	December 31, 2019	December 31, 2018 (1)		
<u>Gross Profit and Operating Income</u>				
North America	\$ 140,335	\$ 154,785	\$ (14,450)	-9
Europe	34,083	30,540	3,543	12
Latin America	32,292	26,574	5,718	22
Asia	13,622	17,030	(3,408)	-20
Surfactants Segment Gross Profit	\$ 220,332	\$ 228,929	\$ (8,597)	-4
Operating Expenses	97,552	95,411	2,141	2
Operating Income	\$ 122,780	\$ 133,518	\$ (10,738)	-8

- (1) The 2018 gross profit and operating income line items have been retrospectively changed from the amounts originally reported as a result of the Company's first quarter 2019 change in method of accounting for U.S. inventory valuation from LIFO to FIFO.

Gross profit for North American operations decreased \$14.5 million, or nine percent, between years primarily due to lower unit margins and a two percent decline in sales volumes. These items negatively impacted the change in gross profit by \$10.6 million and \$3.8 million, respectively. The lower unit margins reflect a slightly less favorable customer and product mix and higher one-time inventory costs associated with the Company's internal Asia-U.S. supply chain. The decline in sales volume was mostly due to lower personal care commodity demand due to one customer losing an important share of business and lower sales volume to our distribution partners due to lower demand.

Gross profit for European operations increased \$3.5 million, or 12 percent, primarily due to lower overhead costs and higher unit margins resulting from the Company ceasing Surfactant production at its German plant site during the fourth quarter of 2018. Unit margins also benefited from double digit volume growth in the agricultural and oilfield end markets. Higher unit margins favorably impacted the year-over-year change in gross profit by \$8.0 million. A nine percent decline in sales volume and the unfavorable effect of foreign currency translation negatively impacted the current year by \$2.7 million and \$1.8 million, respectively. The lower sales volume is primarily attributable to the Company's exit from the sulfonation in Germany during the fourth quarter of 2018, partially offset by volume growth in the agricultural and oilfield end markets.

Gross profit for Latin American operations increased \$5.7 million, or 22 percent, year-over-year primarily due to higher unit margins. Higher unit margins positively impacted the year-over-year change in gross profit by \$7.8 million. The higher unit margins partially reflect one-time benefits related to a VAT tax recovery in Brazil and insurance recovery related to the Ecatepec, Mexico incident. Excluding the effect of the above items, average margins were flat between years. The unfavorable impact of foreign currency translation and three percent lower sales volume negatively impacted the year-over-year change in gross profit by \$1.4 million and \$0.7 million, respectively.

Gross profit for Asian operations decreased \$3.4 million, or 20 percent, largely due to an 11 percent decline in sales volume and lower unit margins. These items negatively impacted the year-over-year change in gross profit by \$1.8 million and \$1.7 million, respectively. The decline in sales volume was largely due to lower commodity demand in the laundry and cleaning end markets and lower sales to our distribution partners. The lower unit margins are primarily due to higher unit overhead costs in Singapore due to unfavorable production timing differences.

Operating expenses for the Surfactants segment increased \$2.1 million, or two percent, year-over-year. Most of this increase was attributable to higher salary and associated fringe benefit expenses.

Polymers

Polymers 2019 net sales decreased \$15.1 million, or three percent, versus net sales for 2018. A four percent increase in sales volume positively impacted the year-over-year change in net sales by \$19.6 million. Sales volume of polyols used in rigid foam applications increased nine percent during the year but was partially offset by lower phthalic anhydride sales volume. The

unfavorable impact of lower average selling prices and foreign currency translation negatively impacted the year-over-year change in net sales by \$22.4 million and \$12.3 million, respectively. A year-over-year comparison of net sales by region follows:

(In thousands)	For the Year Ended		Increase (Decrease)	Percent Change
	December 31, 2019	December 31, 2018		
North America	\$ 314,549	\$ 323,360	\$ (8,811)	-3
Europe	158,455	172,632	(14,177)	-8
Asia and Other	39,343	31,428	7,915	25
Total Polymers Segment	\$ 512,347	\$ 527,420	\$ (15,073)	-3

Net sales for North American operations declined \$8.8 million, or three percent, primarily due to lower average selling prices partially offset by slightly favorable volume growth. The lower average selling prices negatively impacted the change in net sales by \$11.6 million. Sales volume growth positively impacted the change in net sales by \$2.8 million. Sales volume of polyols used in rigid foam applications increased 12 percent during the year but was largely offset by lower phthalic anhydride and specialty polyols sales volume.

Net sales for European operations decreased \$14.2 million, or eight percent, year-over-year. Sales volume growth of two percent positively impacted the year-over-year change in net sales by \$4.1 million. The unfavorable impact of foreign currency translation and lower average selling prices negatively impacted the change in net sales by \$10.5 million and \$7.8 million, respectively. A stronger U.S. dollar relative to the Polish zloty led to the foreign currency translation effect.

Net sales for Asia and Other operations increased \$7.9 million, or 25 percent, primarily due to a 37 percent increase in sales volume. The increase in sales volume positively impacted the year-over-year change in net sales by \$11.5 million. The unfavorable impact of foreign currency translation and lower average selling prices negatively impacted the change in net sales by \$1.8 million each.

Polymer operating income for 2019 increased \$3.2 million, or five percent, versus operating income for 2018. Gross profit increased \$3.9 million, or four percent, year-over-year. Operating expenses increased \$0.7 million, or two percent, in 2019. Year-over-year comparisons of gross profit by region and total segment operating expenses and operating income follow:

(In thousands)	For the Year Ended		Increase (Decrease)	Percent Change
	December 31, 2019	December 31, 2018 (1)		
<u>Gross Profit and Operating Income</u>				
North America	\$ 69,362	\$ 68,868	\$ 494	1
Europe	23,299	24,756	(1,457)	-6
Asia and Other	5,752	892	4,860	545
Polymers Segment Gross Profit	\$ 98,413	\$ 94,516	\$ 3,897	4
Operating Expenses	28,846	28,143	703	2
Operating Income	\$ 69,567	\$ 66,373	\$ 3,194	5

- (1) The 2018 gross profit and operating income line items have been retrospectively changed from the amounts originally reported as a result of the Company's first quarter 2019 change in method of accounting for U.S. inventory valuation from LIFO to FIFO.

Gross profit for North American operations increased \$0.5 million, or one percent, due to slightly higher sales volume. Sales volume of polyols used in rigid foam applications increased 12 percent during the year but was largely offset by lower phthalic anhydride and specialty polyols sales volume. Average unit margins were flat year-over-year. The flat margins largely reflect the consumption of higher priced 2018 year-end inventories carried to guard against winter supply disruptions and the non-recurrence of a \$2.1 million class action settlement received in the first quarter of 2018.

Gross profit for European operations declined \$1.5 million, or six percent, year-over-year. Sales volume growth of two percent positively impacted the year-over-year change in gross profit by \$0.6 million. The unfavorable impact of foreign currency translation and lower unit margins negatively impacted the year-over-year change in gross profit by \$1.5 million and \$0.6 million, respectively.

Gross profit for Asia and Other operations improved \$4.9 million primarily due to higher unit margins and 37 percent sales volume growth year-over-year.

Operating expenses for the Polymers segment increased \$0.7 million, or two percent, year-over-year.

Specialty Products

Specialty Products net sales decreased \$6.8 million, or eight percent, versus net sales in 2018. A one percent increase in sales volume was more than offset by lower average selling prices. Gross profit increased \$4.3 million and operating income increased \$4.8 million year-over-year. These increases primarily reflect improved margins within the Company's medium chain triglycerides (MCTs) product line and lower operating expenses as a result of the 2019 restructuring efforts.

Corporate Expenses

Corporate expenses, which include deferred compensation, business restructuring and other operating expenses that are not allocated to the reportable segments, increased \$19.2 million between years. Corporate expenses were \$81.5 million in 2019 versus \$62.3 million in the prior year. This increase was primarily attributable to higher deferred compensation expense (\$17.5 million). Higher environmental remediation expenses in 2019, partially offset by the non-recurrence of 2018 employee separation costs and costs associated with the Company's 2018 first quarter acquisition in Mexico, also contributed to the year-over-year increase.

Deferred compensation expense increased \$17.5 million between years. This increase was primarily due to a \$28.44 per share increase in the market price of the Company's common stock in 2019 compared to a \$4.97 per share decline in 2018. The following table presents the period-end Company common stock market prices used in the computation of deferred compensation expenses in 2019 and 2018:

Company Stock Price	December 31			
	2019	2018	2017	2016
	\$ 102.44	\$ 74.00	\$ 78.97	\$ 81.48

2018 Compared with 2017

Summary

Net income attributable to the Company for 2018 increased ten percent to \$111.1 million, or \$4.76 per diluted share, from \$100.8 million, or \$4.31 per diluted share, for 2017. Adjusted net income in 2018 decreased five percent to \$111.7 million, or \$4.79 per diluted share, from \$117.5 million, or \$5.03 per diluted share in 2017 (see the "Reconciliations of Non-GAAP Adjusted Net Income and Diluted Earnings per Share" section of this MD&A for reconciliations between reported net income attributable to the Company and reported earnings per diluted share and non-GAAP adjusted net income and adjusted earnings per diluted share). Below is a summary discussion of the major factors leading to the year-over-year changes in net sales, profits and expenses. A detailed discussion of segment operating performance for 2018 compared to 2017 follows the summary.

Consolidated net sales increased \$68.9 million, or four percent, between years. Higher sales volume, higher selling prices and the favorable impact of foreign currency translation positively impacted net sales by \$64.7 million, \$4.1 million and \$0.1 million, respectively. Total Company sales volume increased three percent. Sales volume increased five percent and three percent for the Surfactants and Specialty Products segments, respectively. Sales volume declined three percent for the Polymers segment. Unit margins improved for Surfactants and Specialty Products and declined for Polymers.

Operating income declined \$5.6 million, or four percent, between years. Operating income declined for the Polymers segment and improved for Surfactants and Specialty Products segments. Corporate expenses were down \$4.3 million between years. Business restructuring expenses were \$0.5 million lower in 2018 versus 2017. In addition, 2018 deferred compensation expense declined by \$7.1 million versus the 2017 balance. Foreign currency translation had an unfavorable \$0.6 million effect on year-over-year consolidated operating income.

Operating expenses (including deferred compensation expense and business restructuring expenses) decreased \$1.2 million, or one percent, between years. Changes in the individual income statement line items that comprise the Company's operating expenses were as follows:

- Selling expenses increased \$2.2 million, or four percent, year over year largely due to higher salaries and cloud-based application expense. A portion of the higher salaries is attributable to the 2018 acquisition in Mexico.
- Administrative expenses increased \$3.6 million, or five percent, year over year. The increase was primarily due to higher employee separation costs and salaries.
- Research, development and technical service (R&D) expenses increased \$0.6 million, or one percent, year over year.
- Deferred compensation was income of \$2.3 million in 2018 versus expense of \$4.9 million in 2017. See the "Overview" and "Segment Results - Corporate Expenses" sections of this MD&A for further details.

- Business restructuring expenses were \$2.6 million in 2018 versus \$3.1 million in 2017. 2018 restructuring charges were comprised of asset and spare part write-downs related to the Company's decision to cease Surfactant operations in Germany (\$1.4 million) and decommissioning costs associated with the Company's manufacturing facility in Canada, which ceased operations in the fourth quarter of 2016 (\$1.2 million). The 2017 restructuring charges related to decommissioning costs associated with the Canadian plant closure (\$2.0 million), severance costs related to a partial restructuring of the Company's production facility in Fieldsboro, New Jersey (\$0.9 million) and workforce reduction expense at the Company's Singapore plant. These business restructuring charges were excluded from the determination of segment operating income. See Note 23 to the consolidated financial statements for additional information.

Net interest expense for 2018 declined \$0.7 million, or six percent, from net interest expense for 2017. The decline in interest expense was principally attributable to higher interest income earned on excess cash and lower average debt levels due to scheduled repayments.

Other, net was \$0.7 million of expense in 2018 versus \$3.5 million of income in 2017. The Company recognized \$1.4 million of investment losses (including realized and unrealized gains and losses) for the Company's deferred compensation and supplemental defined contribution mutual fund assets in 2018 compared to \$5.1 million of gains in 2017. Partially offsetting this decrease was foreign exchange gains of \$1.9 million in 2018 compared to foreign exchange losses of \$0.6 million in 2017. In addition, the Company reported \$1.2 million of net periodic pension cost in 2018 versus \$1.0 million of net periodic pension cost in 2017.

The year-to-date effective tax rate was 19.4 percent in 2018 compared to 31.4 percent in 2017. This decrease was primarily attributable to the following items: (a) a lower U.S. statutory tax rate of 21 percent in 2018 versus a rate of 35 percent in 2017; and (b) the enactment of U.S. tax reform, which resulted in a net tax cost of \$10.3 million in 2017 that did not recur in 2018. The 2018 benefits were partially offset by certain unfavorable U.S. tax reform changes that became effective on January 1, 2018 (i.e., global intangible low-taxed income, non-deductible executive compensation, and the repeal of the domestic production activities deduction). In addition, during the third quarter of 2018, the Company filed applications to automatically change certain tax accounting methods related to the 2017 tax year. These method changes provided a favorable tax benefit that was partially offset by the negative tax impact recognized as a result of the Company's decision to repatriate approximately \$100.0 million of foreign cash in the fourth quarter of 2018. See Note 10 to the consolidated financial statements for a reconciliation of the statutory U.S. federal income tax rate to the effective tax rate.

Segment Results

<i>(In thousands)</i>	For the Year Ended		Increase (Decrease)	Percent Change
	December 31, 2018	December 31, 2017		
Net Sales				
Surfactants	\$ 1,385,932	\$ 1,297,555	\$ 88,377	7
Polymers	527,420	546,634	(19,214)	-4
Specialty Products	80,505	80,818	(313)	0
Total Net Sales	<u>\$ 1,993,857</u>	<u>\$ 1,925,007</u>	<u>\$ 68,850</u>	4
 <i>(In thousands)</i>				
	For the Year Ended		Increase (Decrease)	Percent Change
	December 31, 2018 (1)	December 31, 2017 (1)		
Operating Income				
Surfactants	\$ 133,518	\$ 125,712	\$ 7,806	6
Polymers	66,373	85,745	(19,372)	-23
Specialty Products	11,661	9,965	1,696	17
Segment Operating Income	\$ 211,552	\$ 221,422	\$ (9,870)	-4
Corporate Expenses, Excluding Deferred Compensation and Restructuring	62,028	58,656	3,372	6
Deferred Compensation Expense (Income)	(2,329)	4,857	(7,186)	-148
Business Restructuring	2,588	3,069	(481)	-16
Total Operating Income	<u>\$ 149,265</u>	<u>\$ 154,840</u>	<u>\$ (5,575)</u>	-4

- (1) The 2018 and 2017 gross profit and operating income line items have been retrospectively changed from the amounts originally reported as a result of the Company's first quarter 2019 change in method of accounting for U.S. inventory valuation from LIFO to FIFO.

Surfactants

Surfactants 2018 net sales increased \$88.4 million, or seven percent, over net sales reported in 2017. Higher sales volume and selling prices accounted for \$69.5 million and \$26.2 million, respectively, of the year-over-year increase in net sales. Sales volume increased five percent year-over-year. The unfavorable effects of foreign currency translation negatively impacted the year-over-year change in net sales by \$7.3 million. A year-over-year comparison of net sales by region follows:

(In thousands)	For the Year Ended		Increase (Decrease)	Percent Change
	December 31, 2018	December 31, 2017		
North America	\$ 831,592	\$ 763,044	\$ 68,548	9
Europe	276,742	275,121	1,621	1
Latin America	212,824	190,802	22,022	12
Asia	64,774	68,588	(3,814)	-6
Total Surfactants Segment	<u>\$ 1,385,932</u>	<u>\$ 1,297,555</u>	<u>\$ 88,377</u>	7

Net sales for North American operations increased nine percent between years. Sales volume increased six percent, which favorably impacted the change in net sales by \$42.0 million. The sales volume growth was largely driven by higher sales volume of products used in personal care and oilfield applications. Sales volume of general surfactants to our distribution partners also increased. Average selling prices increased three percent between years and positively impacted the year-over-year change in net sales by \$26.4 million. The increase in selling prices was largely due to a more favorable mix of sales. Foreign currency translation positively impacted the change in net sales by \$0.1 million. The foreign currency impact reflected a weaker U.S. dollar relative to the Canadian dollar.

Net sales for European operations increased one percent versus prior year. The favorable effects of foreign currency translation positively impacted the year-over-year change in net sales by \$11.8 million. A weaker U.S. dollar relative to the European euro and British pound sterling led to the foreign currency effect. Lower selling prices of four percent unfavorably impacted the year-over-year change in net sales by \$10.5 million. Sales volume was flat versus the prior year. Net sales in 2017 were positively impacted by \$4.7 million related to a favorable resolution of a prior year customer claim (see Note 25 to the consolidated financial statements for further information).

Net sales for Latin American operations increased \$22.0 million, or 12 percent, primarily due a 12 percent increase in sales volume and higher selling prices. These two items accounted for \$22.5 million and \$16.1 million, respectively, of the year-over-year change in net sales. The higher volume is mostly related to the Company's first quarter 2018 acquisition in Ecatepec, Mexico and partially offset by lower demand and lost commodity business in Brazil. The higher selling prices primarily reflect the pass through to customers of increased raw material costs. Foreign currency translation negatively impacted the year-over-year change in net sales by \$16.6 million. The foreign currency translation primarily reflects the year-over-year weakening of the Brazilian real and Mexican peso relative to the U.S. dollar.

Net sales for Asian operations declined \$3.8 million, or six percent, primarily due to the negative impact of foreign currency translation and lower average selling prices. These items negatively impacted the year-over-year change in net sales by \$2.5 million and \$2.0 million, respectively. The foreign currency impact primarily reflected a weaker Philippine peso relative to the U.S. dollar. Sales volume increased one percent, which positively impacted the year-over year change in net sales by \$0.7 million. The sales volume increase was mostly due to higher sales of general surfactants to our distribution partners.

Surfactant operating income for 2018 increased \$7.8 million, or six percent, versus operating income reported in 2017. Gross profit increased \$11.2 million due to improved results for North American operations. Operating expenses increased \$3.4 million, or four percent. Year-over-year comparisons of gross profit by region and total segment operating expenses and operating income follow:

(In thousands)	For the Year Ended		Increase (Decrease)	Percent Change
	December 31, 2018 (1)	December 31, 2017 (1)		
<u>Gross Profit and Operating Income</u>				
North America	\$ 154,785	\$ 137,436	\$ 17,349	13
Europe	30,540	31,706	(1,166)	-4
Latin America	26,574	29,061	(2,487)	-9
Asia	17,030	19,488	(2,458)	-13
Surfactants Segment Gross Profit	\$ 228,929	\$ 217,691	\$ 11,238	5
Operating Expenses	95,411	91,979	3,432	4
Operating Income	\$ 133,518	\$ 125,712	\$ 7,806	6

(1) The 2018 and 2017 gross profit and operating income line items have been retrospectively changed from the amounts originally reported as a result of the Company's first quarter 2019 change in method of accounting for U.S. inventory valuation from LIFO to FIFO.

Gross profit for North American operations increased 13 percent, or \$17.3 million, between years primarily due to higher unit margins and higher sales volumes. These items positively impacted the year-over-year change in gross profit by \$9.5 million and \$7.8 million, respectively. The higher unit margins were primarily due to a more favorable customer and product mix. Higher year-over-year sales of products used in personal care, agricultural and oilfield applications, along with products sold to our distribution partners contributed to the 2018 volume growth.

Gross profit for European operations decreased four percent between years principally due to the aforementioned non-recurring \$4.7 million favorable customer claim resolution in 2017. Lower unit margins, principally due to the non-recurrence of the prior year favorable customer claim resolution, negatively impacted the year-over-year change in gross profit by \$2.5 million. Foreign currency translation positively affected the change in gross profit by \$1.3 million. Sales volume was flat year-over-year.

Gross profit for Latin American operations decreased \$2.5 million, or nine percent, year-over-year primarily due to lower unit margins and the negative impact of foreign currency translation. These items unfavorably impacted the change in year-over-year gross profit by \$3.1 million and \$2.8 million, respectively. The lower unit margins principally related to higher integration and start-up costs associated with the Company's first quarter 2018 acquisition in Ecatepec, Mexico. Sales volume growth of 12 percent positively impacted current year gross profit by \$3.4 million. This growth primarily reflects the Company's first quarter acquisition in Mexico partially offset by lower demand and lost commodity business in Brazil. The Ecatepec, Mexico acquisition was slightly accretive to Latin America gross profit in 2018.

Asia gross profit decreased 13 percent largely due to lower unit margins and the unfavorable impact of foreign currency translation. These items unfavorably impacted the year-over-year change in gross profit by \$2.3 million and \$0.4 million, respectively. Sales volume growth of one percent positively impacted the year-over-year change in gross profit by \$0.2 million.

Operating expenses for the Surfactants segment increased \$3.4 million, or four percent, year-over-year. Most of this increase was attributable to higher North American expenses. The higher North American expenses were primarily due to higher consulting fees, salaries, and cloud-based application expense.

Polymers

Polymer net sales for 2018 decreased \$19.2 million, or four percent, over net sales for 2017. Lower sales volumes and selling prices negatively impacted the year-over-year change in net sales by \$16.9 million and \$9.0 million, respectively. The favorable effects of foreign currency translation positively impacted the year-over-year change in net sales by \$6.7 million. The foreign currency effect reflected a weaker U.S. dollar relative to the Polish zloty. A year-over-year comparison of net sales by region follows:

(In thousands)	For the Year Ended		Increase (Decrease)	Percent Change
	December 31, 2018	December 31, 2017		
North America	\$ 323,360	\$ 329,629	\$ (6,269)	-2
Europe	172,632	188,244	(15,612)	-8
Asia and Other	31,428	28,761	2,667	9
Total Polymers Segment	\$ 527,420	\$ 546,634	\$ (19,214)	-4

Net sales for North American operations increased three percent due to higher selling prices, partially offset by lower sales volumes. Selling prices increased five percent, which had a \$15.4 million positive effect on the year-over-year change in net sales. The pass through of certain higher raw material costs to customers led to increased selling prices. Sales volume declined two percent which unfavorably impacted the net sales change by \$5.5 million. Sales volume of polyols used in rigid foam applications declined two percent mainly due to lost share from one major customer. Phthalic anhydride sales volume declined seven percent. Sales volume of specialty polyols increased eight percent due to greater demand for product used in CASE applications and powdered resins.

Net sales for European operations increased 22 percent due to higher selling prices, the favorable effect of foreign currency translation and a three percent increase in sales volumes, which accounted for \$22.4 million, \$7.9 million and \$4.0 million, respectively, of the year-over-year net sales increase. Selling prices increased 14 percent primarily due to the pass through to customers of cost increases for certain raw materials. The sales volume improvement was primarily attributable to increased sales of specialty polyols, which reflected the Company's successful efforts to utilize the production capacity of its new reactor in Poland. Sales volume also grew slightly due to increased demand for polyols used in rigid foam insulation and insulated metal panels.

Net sales for Asia and Other operations increased 15 percent between years due to higher selling prices, a two percent increase in sales volume and the favorable effect of foreign currency, which accounted for \$3.1 million, \$0.5 million and \$0.1 million, respectively, of the year-over-year net sales increase.

Polymer operating income for 2018 declined \$19.4 million, or 23 percent, compared to operating income in 2017. Gross profit decreased \$19.4 million, or 17 percent, primarily due to a three percent decline in sales volumes and lower unit margins. Operating expenses were flat versus prior year. Year-over-year comparisons of gross profit by region and total segment operating expenses and operating income follow:

(In thousands)	For the Year Ended		Increase (Decrease)	Percent Change
	December 31, 2018 (1)	December 31, 2017 (1)		
<u>Gross Profit and Operating Income</u>				
North America	\$ 68,868	\$ 82,376	\$ (13,508)	-16
Europe	24,756	31,451	(6,695)	-21
Asia and Other	892	114	778	682
Polymers Segment Gross Profit	\$ 94,516	\$ 113,941	\$ (19,425)	-17
Operating Expenses	28,143	28,196	(53)	0
Operating Income	\$ 66,373	\$ 85,745	\$ (19,372)	-23

(1) The 2018 and 2017 gross profit and operating income line items have been retrospectively changed from the amounts originally reported as a result of the Company's first quarter 2019 change in method of accounting for U.S. inventory valuation from LIFO to FIFO.

Gross profit for North American operations declined 16 percent primarily due to lower unit margins and a two percent decline in sales volume. These two items negatively impacted the year-over-year change in gross profit by \$12.1 million and \$1.4 million, respectively. The decline in margins primarily reflected competitive market pressures.

Gross profit for European operations declined 21 percent primarily due to lower unit sales margins and a seven percent decline in sales volume. These items negatively impacted the year-over-year change in gross profit by \$5.6 million and \$2.1 million, respectively. The lower margins were primarily due to higher overhead resulting from lower production throughput in 2018 versus 2017. The favorable impact of foreign currency translation positively impacted the year-over-year change in gross profit by \$1.0 million.

Gross profit for Asia and Other operations improved \$0.8 million primarily due to higher unit margins and the favorable impact of foreign currency translation. These items positively impacted the year-over-year change in gross profit by \$0.7 million and \$0.1 million, respectively.

Operating expenses for the Polymers segment decreased \$0.1 million year-over-year.

Specialty Products

Net sales for 2018 were flat with the prior year. Sales volume was up three percent versus the prior year. Operating income increased \$1.7 million versus prior year primarily due to the higher sales volume and improved unit margins.

Corporate Expenses

Corporate expenses, which include deferred compensation and other operating expenses that are not allocated to the reportable segments, declined \$4.3 million year-over-year to \$62.3 million in 2018 from \$66.6 million in 2017. The decline in corporate expenses was primarily attributable to lower deferred compensation expense (\$7.2 million) and business restructuring expense (\$0.5 million). These decreases were partially offset by higher 2018 employee separation costs and salaries.

Deferred compensation was \$2.3 million of income in 2018 compared to \$4.9 million of expense in 2017. The favorable year-over-year change was primarily due to less mutual fund related expense incurred in the current year combined with a steeper drop in Stepan share price in 2018 versus 2017.

	December 31		
	2018	2017	2016
Company Stock Price	\$ 74.00	\$ 78.97	\$ 81.48

Liquidity and Capital Resources

Overview

Historically, the Company's principal sources of liquidity have included cash flows from operating activities, available cash and cash equivalents and the use of available borrowing facilities. The Company's principal uses of cash have included funding operating activities, capital investments and acquisitions.

For the twelve months ended December 31, 2019, operating activities were a cash source of \$218.4 million versus a source of \$171.1 million for the comparable period in 2018. For the current year, investing cash outflows totaled \$112.7 million, as compared to an outflow of \$107.8 million in the prior year period, and financing activities were a use of \$90.5 million, as compared to a use of \$51.6 million in the prior year period. Cash and cash equivalents increased by \$15.2 million compared to December 31, 2018, including an unfavorable exchange rate impact of \$0.1 million.

As of December 31, 2019, the Company's cash and cash equivalents totaled \$315.4 million. Cash in U.S. demand deposit accounts, certificate of deposit accounts and money market funds totaled \$64.7 million, \$41.0 million and \$110.7 million, respectively. The Company's non-U.S. subsidiaries held \$99.0 million of cash outside the United States as of December 31, 2019.

Operating Activity

Net cash provided by operating activities was \$218.4 million in 2019, a 28 percent increase versus \$171.1 million in 2018. Net income in 2019 decreased by \$8.0 million versus the comparable period in 2018. Working capital was a cash source of \$17.6 million in 2019 versus a use of \$37.7 million in 2018.

Accounts receivable were a source of \$4.9 million in 2019 compared to a source of \$5.2 million in 2018. Inventories were a source of \$28.5 million in 2019 versus a use of \$24.7 million in 2018. Accounts payable and accrued liabilities were a use of \$15.1 million in 2019 compared to a use of \$19.0 million for the same period in 2018.

Working capital requirements were lower in 2019 compared to 2018 primarily due to the changes noted above. The current year inventory source of cash reflects lower quantities and prices. The current year accounts payable and accrued liabilities cash usage reflects lower quantities purchased and prices. It is management's opinion that the Company's liquidity is sufficient to provide for potential increases in working capital requirements during 2020.

Investing Activity

Cash used for investing activities increased \$4.9 million year-over-year. Cash outflows from investing activities included capital expenditures of \$105.6 million compared to \$86.6 million in 2018. Other investing activities were a use of \$7.1 million in 2019 versus a use of \$21.2 million in 2018. The current year cash use in other investing activities was primarily attributable to the \$9.0 million acquisition of an oilfield demulsifier product line during the fourth quarter of 2019. The cash use in other investing activities in 2018 was primarily attributable to the \$22.9 million acquisition of a surfactant production facility, and a portion of the related surfactant business, in Ecatepec, Mexico.

For 2020, the Company estimates that total capital expenditures will range from \$110 million to \$130 million including infrastructure and optimization spending in the United States, Germany and Mexico.

Financing Activity

Cash flow from financing activities was a use of \$90.5 million in 2019 versus a use of \$51.6 million in 2018.

The Company purchases shares of its common stock in the open market or from its benefit plans from time to time to fund its own benefit plans and also to mitigate the dilutive effect of new shares issued under its benefit plans. The Company may, from time to time, seek to retire or purchase additional amounts of its outstanding equity and/or debt securities through cash purchases and/or exchanges for other securities, in open market purchases, privately negotiated transactions or otherwise, including pursuant to plans meeting the requirements of Rule 10b5-1 promulgated by the SEC. Such repurchases or exchanges, if any, will depend on prevailing market conditions, the Company's liquidity requirements, contractual restrictions and other factors. The amounts involved may be material. For the twelve months ended December 31, 2019, the Company purchased 144,457 shares at a total cost of \$13.2 million. At December 31, 2019, there were 349,830 shares remaining under the current share repurchase authorization.

Debt and Credit Facilities

Consolidated balance sheet debt decreased by \$54.0 million for 2019, from \$276.1 million to \$222.1 million, primarily due to lower domestic debt. Cash balance as of December 31, 2019 was \$315.4 million versus \$300.2 million as of December 31, 2018. In 2019, net debt (which is defined as total debt minus cash – See the "Reconciliation of Non-GAAP Net Debt" section of this MD&A) decreased by \$69.2 million, from a negative \$24.1 million to a negative \$93.3 million.

As of December 31, 2019, the ratio of total debt to total debt plus shareholders' equity was 19.9 percent compared to 26.0 percent at December 31, 2018. As of December 31, 2019, the ratio of net debt to net debt plus shareholders' equity was negative 11.7 percent, compared to negative 3.2 percent at December 31, 2018. At December 31, 2019, the Company's debt included \$222.1 million of unsecured private placement loans with maturities ranging from 2020 through 2027 which were issued to insurance companies pursuant to note purchase agreements (the Note Purchase Agreements). These notes are the Company's primary source of long-term debt financing and are supplemented by bank credit facilities to meet short and medium-term needs.

On January 30, 2018, the Company entered into a five year committed \$350 million multi-currency revolving credit facility with a syndicate of banks that matures on January 30, 2023. This revolving credit facility replaced the Company's prior \$125 million credit agreement. This credit agreement allows the Company to make unsecured borrowings, as requested from time to time, to finance working capital needs, permitted acquisitions, capital expenditures and for general corporate purposes. This unsecured facility is the Company's primary source of short-term borrowings. As of December 31, 2019, the Company had outstanding letters of credit totaling \$4.9 million under the revolving credit agreement and no borrowings, with \$345.1 million remaining available.

The Company anticipates that cash from operations, committed credit facilities and cash on hand will be sufficient to fund anticipated capital expenditures, working capital, dividends and other planned financial commitments for the foreseeable future.

Certain foreign subsidiaries of the Company periodically maintain short-term bank lines of credit in their respective local currencies to meet working capital requirements as well as to fund capital expenditure programs and acquisitions. At December 31, 2019, the Company's foreign subsidiaries had no outstanding debt.

The Company has material debt agreements that require the maintenance of minimum interest coverage and minimum net worth. These agreements also limit the incurrence of additional debt as well as the payment of dividends and repurchase of treasury shares. As of December 31, 2019, testing for these agreements was based on the Company's consolidated financial statements. Under the most restrictive of these debt covenants:

1. The Company is required to maintain a minimum interest coverage ratio, as defined within the agreements, not to exceed 3.50 to 1.00, for the preceding four calendar quarters.
2. The Company is required to maintain a maximum net leverage ratio, as defined within the agreements, not to exceed 3.50 to 1.00.
3. The Company is required to maintain net worth of at least \$325.0 million.
4. The Company is permitted to pay dividends and purchase treasury shares after December 31, 2017, in amounts of up to \$100.0 million plus 100 percent of net income and cash proceeds of stock option exercises, measured cumulatively

beginning December 31, 2017. The maximum amount of dividends that could have been paid within this limitation is disclosed as unrestricted retained earnings in Note 7 to the consolidated financial statements.

The Company believes it was in compliance with all of its loan agreements as of December 31, 2019.

Contractual Obligations

At December 31, 2019, the Company's contractual obligations, including estimated payments by period, were as follows:

<i>(In thousands)</i>	Payments Due by Period				
	Total	Less than 1 year	1-3 years	3 – 5 years	More than 5 years
Long-term debt obligations (1)	\$ 222,857	\$ 23,571	\$ 75,716	\$ 66,429	\$ 57,141
Interest payments on debt obligations (2)	34,189	8,788	14,004	7,735	3,662
Operating lease obligations	48,451	10,086	13,984	8,146	16,235
Purchase obligations (3)	6,059	4,251	1,808	—	—
Other (4)	33,094	11,262	3,017	2,876	15,939
Total	<u>\$ 344,650</u>	<u>\$ 57,958</u>	<u>\$ 108,529</u>	<u>\$ 85,186</u>	<u>\$ 92,977</u>

- (1) Excludes unamortized debt issuance costs of \$0.8 million.
- (2) Interest payments on debt obligations represent interest on all Company debt at December 31, 2019. Future interest rates may change, and, therefore, actual interest payments could differ from those disclosed in the above table.
- (3) Purchase obligations consist of raw material, utility and telecommunication service purchases made in the normal course of business.
- (4) The "Other" category comprises deferred revenues that represent commitments to deliver products, expected 2020 required contributions to the Company's funded defined benefit pension plans, estimated payments related to the Company's unfunded defined benefit supplemental executive and outside director pension plans, estimated payments (undiscounted) related to the Company's asset retirement obligations, environmental remediation payments for which amounts and periods can be reasonably estimated and income tax liabilities for which payments and periods can be reasonably estimated.

The above table does not include \$77.2 million of other non-current liabilities recorded on the balance sheet at December 31, 2019, as summarized in Note 16 to the consolidated financial statements. The significant non-current liabilities excluded from the table are defined benefit pension, deferred compensation, environmental and legal liabilities and unrecognized tax benefits for which payment periods cannot be reasonably determined. In addition, deferred income tax liabilities are excluded from the table due to the uncertainty of their timing.

Pension Plans

The Company sponsors a number of defined benefit pension plans, the most significant of which cover employees in the Company's U.S. and U.K. locations. The U.S. and U.K. plans are frozen, and service benefit accruals are no longer being made. The underfunded status (pretax) of the Company's defined benefit pension plans was \$13.6 million at December 31, 2019 versus \$23.8 million at December 31, 2018. See Note 14, Postretirement Benefit Plans, to the consolidated financial statements for additional details.

The Company contributed \$0.8 million to its defined benefit plans in 2019. In 2020, the Company expects to contribute a total of \$0.5 million to the U.K. defined benefit plan. As a result of pension funding relief included in the Highway and Transportation Funding Act of 2014, the Company has no 2020 contribution requirement to the U.S. pension plans. Payments to participants in the unfunded non-qualified plans should approximate \$0.3 million in 2020, which is the same as payments made in 2019.

Letters of Credit

The Company maintains standby letters of credit under its workers' compensation insurance agreements and for other purposes as needed. The insurance letters of credit are renewed annually and amended to the amounts required by the insurance agreements. As of December 31, 2019, the Company had a total of \$4.9 million of outstanding standby letters of credit.

Off-Balance Sheet Arrangements

The Securities and Exchange Commission requires disclosure of off-balance sheet arrangements that either have, or are reasonably likely to have, a current or future effect on the Company's financial condition, changes in financial condition, revenues or

expenses, results of operations, liquidity, capital expenditures or capital resources that is material to investors. During the periods covered by this Form 10-K, the Company was not party to any such off-balance sheet arrangements.

Environmental and Legal Matters

The Company's operations are subject to extensive federal, state and local environmental laws and regulations or similar laws in the other countries in which the Company does business. Although the Company's environmental policies and practices are designed to ensure compliance with these regulations, future developments and increasingly stringent environmental regulations may require the Company to make additional unforeseen environmental expenditures. The Company will continue to invest in the equipment and facilities necessary to comply with existing and future regulations. During 2019, the Company's expenditures for capital projects related to the environment were \$3.7 million. Expenditures for capital projects related to the environment are capitalized and depreciated over their estimated useful lives, which are typically 10 years. Recurring costs associated with the operation and maintenance of facilities for waste treatment, waste disposal and managing environmental compliance in ongoing operations at the Company's manufacturing locations were approximately \$31.8 million for 2019, \$28.3 million for 2018 and \$28.2 million for 2017.

Over the years, the Company has received requests for information related to or has been named by government authorities as a potentially responsible party at a number of waste disposal sites where cleanup costs have been or may be incurred under CERCLA and similar state or foreign statutes. In addition, damages are being claimed against the Company in general liability actions for alleged personal injury or property damage in the case of some disposal and plant sites. The Company believes that it has made adequate provisions for the costs it is likely to incur with respect to these sites. See the Critical Accounting Policies section that follows for a discussion of the Company's environmental liabilities accounting policy. After partial remediation payments at certain sites, the Company has estimated a range of possible environmental and legal losses from \$25.9 million to \$43.7 million at December 31, 2019, compared to \$23.4 million to \$44.7 million at December 31, 2018. Within the range of possible environmental losses, management has currently concluded that there are no amounts within the ranges that are likely to occur than any other amounts in the ranges and, thus, has accrued at the lower end of the ranges. The Company's environmental and legal accruals totaled \$25.9 million at December 31, 2019 as compared to \$23.4 million at December 31, 2018. Because the liabilities accrued are estimates, actual amounts could differ from the amounts reported. During 2019, cash outlays related to legal and environmental matters approximated \$3.8 million compared to \$1.6 million expended in 2018.

For certain sites, the Company has responded to information requests made by federal, state or local government agencies but has received no response confirming or denying the Company's stated positions. As such, estimates of the total costs, or range of possible costs, of remediation, if any, or the Company's share of such costs, if any, cannot be determined with respect to these sites. Consequently, the Company is unable to predict the effect thereof on the Company's financial position, cash flows and results of operations. Based upon the Company's present knowledge with respect to its involvement at these sites and the possibility of other viable entities' responsibilities for cleanup, management believes that the Company has no liability at these sites and that these matters, individually and in the aggregate, will not have a material effect on the Company's financial position.

See Item 3. Legal Proceedings, in this Form 10-K and Note 17, Contingencies, in the Notes to Consolidated Financial Statements for a summary of the significant environmental proceedings related to certain environmental sites.

Outlook

Management anticipates a very challenging first quarter of 2020 due to operational issues at its plant in Millsdale, Illinois (see Note 27, Subsequent Events, in the Notes to Consolidated Financial Statements for additional details). Despite the challenging start to 2020, management believes its Surfactant strategy, inclusive of its focus on end market diversification, Tier 2 and Tier 3 customers and cost out activities will continue to contribute to margin improvement. Management believes Polymers will continue to benefit from energy conservation efforts and the growing market for insulation materials around the globe. Management believes full year Specialty Products results will approximate 2019 results. Additional headwinds anticipated in 2020 include the negative impact of the Coronavirus in China as well as higher raw material sourcing costs due to the Illinois River lock closures scheduled during the second half of 2020.

Climate Change Legislation

Based on currently available information, the Company does not believe that existing or pending climate change legislation or regulation is reasonably likely to have a material effect on the Company's financial condition, results of operations or cash flows.

Critical Accounting Policies

The Company prepares its financial statements in accordance with accounting principles generally accepted in the United States of America (generally accepted accounting principles or GAAP). Preparation of financial statements in accordance with generally accepted accounting principles requires the Company to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. The following is a summary of the accounting policies the Company believes are the most important to aid in understanding its financial results:

Deferred Compensation

The Company sponsors deferred compensation plans that allow management employees to defer receipt of their annual bonuses and outside directors to defer receipt of their fees until retirement, departure from the Company or as elected by the participant. The plans allow for the deferred compensation to grow or decline based on the results of investment options chosen by the participants. The investment options include Company common stock and a limited selection of mutual funds. The Company funds the obligations associated with these plans by purchasing investment assets that match the investment choices made by the plan participants. A sufficient number of shares of treasury stock are maintained on hand to cover the equivalent number of shares that result from participants electing the Company common stock investment option. As a result, the Company must periodically purchase its common shares in the open market or in private transactions. Upon retirement or departure from the Company or at the elected time, participants receive cash amounts equivalent to the payment date value of the investment choices they have made or Company common stock shares equal to the number of share equivalents held in the accounts.

Some plan distributions may be made in cash or Company common stock at the option of the participant. Other plan distributions can only be made in Company common stock. For deferred compensation obligations that may be settled in cash, the Company must record appreciation in the market value of the investment choices made by participants as additional compensation expense. Conversely, declines in the value of Company stock or the mutual funds result in a reduction of compensation expense since such declines reduce the cash obligation of the Company as of the date of the financial statements. These market price movements may result in significant period-to-period fluctuations in the Company's income. The increases or decreases in compensation expenses attributable to market price movements are reported in the operating expenses section of the consolidated statements of income. Because the obligations that must be settled only in Company common stock are treated as equity instruments, fluctuations in the market price of the underlying Company stock do not affect earnings.

At December 31, 2019 and December 31, 2018, the Company's deferred compensation liability was \$59.0 million and \$50.5 million, respectively. In 2019 and 2018, approximately 55 percent and 53 percent, respectively, of deferred compensation liability represented deferred compensation tied to the performance of the Company's common stock. The remainder of the deferred compensation liability was tied to the chosen mutual fund investment assets. A \$1.00 increase in the market price of the Company's common stock will result in approximately \$0.3 million of additional compensation expense. A \$1.00 reduction in the market price of the common stock will reduce compensation expense by a like amount. The expense or income associated with the mutual fund component will generally fluctuate in line with the overall percentage increase or decrease of the U.S. stock markets.

The mutual fund assets related to the deferred compensation plans are recorded on the Company's balance sheet at cost when acquired and adjusted to their market values at the end of each reporting period. As allowed by generally accepted accounting principles, the Company elected the fair value option for recording the mutual fund investment assets. Therefore, market value changes for the mutual fund investment assets are recorded in the income statement in the same periods that the offsetting changes in the deferred compensation liabilities are recorded. Dividends, capital gains distributed by the mutual funds and realized and unrealized gains and losses related to mutual fund shares are recognized as investment income or loss in the other, net line of the consolidated statements of income.

Environmental Liabilities

It is the Company's accounting policy to record environmental liabilities when environmental assessments and/or remedial efforts are probable and the cost or range of possible costs can be reasonably estimated. When no amount within a range of possible costs is a better estimate than any other amount, the minimum amount in the range is accrued. Estimating the possible costs of remediation required making assumptions related to the nature and extent of contamination and the methods and resulting costs of remediation. Some of the factors on which the Company bases its estimates include information provided by decisions rendered by State and Federal environmental regulatory agencies, information provided by feasibility studies, and remedial action plans developed.

Estimates for environmental liabilities are subject to potentially significant fluctuations as new facts emerge related to the various sites where the Company is exposed to liability for the remediation of environmental contamination. See the Environmental and Legal Matters section of this MD&A for discussion of the Company's recorded liabilities and range of cost estimates.

Revenue Recognition

On January 1, 2018, the Company adopted ASU No. 2014-09, *Revenue from Contracts with Customers (Topic 606)*. This ASU outlines a single comprehensive model for entities to use in accounting for revenue arising from contracts with customers. The Company's contracts typically have a single performance obligation that is satisfied at the time product is shipped and control passes to the customer as compared to the "risk and rewards" criteria used in prior years. For a small portion of the business, performance obligations are deemed satisfied when product is delivered to a customer location. For arrangements where the Company consigns product to a customer location, revenue is recognized when the customer uses the inventory. The Company accounts for shipping and handling as activities to fulfill a promise to transfer a good. As such, shipping and handling fees billed to customers in a sales transaction are recorded in Net Sales and shipping and handling costs incurred are recorded in Cost of Sales. Volume and cash discounts due to customers are estimated and recorded in the same period as the sales to which the discounts relate and are reported as reductions of revenue in the consolidated statements of income. See Note 22 to the consolidated financial statements for more details.

Recent Accounting Pronouncements

See Note 1 to the consolidated financial statements, included in Part II-Item 8, for information on recent accounting pronouncements which affect the Company.

Reconciliations of Non-GAAP Adjusted Net Income and Dilutive Earnings per Share

(In millions, except per share amounts)	Twelve Months Ended December 31					
	2019		2018 (1)		2017 (1)	
	Net Income	Diluted EPS	Net Income	Diluted EPS	Net Income	Diluted EPS
Net Income Attributable to the Company as Reported	\$ 103.1	\$ 4.42	\$ 111.1	\$ 4.76	\$ 100.8	\$ 4.31
Deferred Compensation (Income) Expense	10.5	0.45	(1.0)	(0.04)	(0.1)	—
Business Restructuring	2.7	0.12	2.6	0.11	3.1	0.13
Cash-Settled SARs	2.8	0.12	(0.7)	(0.03)	(0.7)	(0.03)
Environmental Remediation	4.3	0.18	—	—	—	—
Voluntary Debt Prepayment	1.2	0.05	—	—	—	—
Cumulative Tax Effect on Above Adjustment Items	(5.2)	(0.22)	(0.3)	(0.01)	(0.5)	(0.02)
US Tax Reform Impact	—	—	—	—	10.3	0.44
Adjusted Net Income	<u>119.4</u>	<u>\$ 5.12</u>	<u>\$ 111.7</u>	<u>\$ 4.79</u>	<u>\$ 112.9</u>	<u>\$ 4.83</u>

(1) The 2018 and 2017 amounts have been retrospectively changed from the amounts originally reported as a result of the Company's first quarter 2019 change in method of accounting for U.S. inventory valuation from LIFO to FIFO.

The Company believes that certain non-GAAP measures, when presented in conjunction with comparable GAAP measures, are useful for evaluating the Company's operating performance and provide better clarity on the impact of non-operational items. Internally, the Company uses this non-GAAP information as an indicator of business performance and evaluates management's effectiveness with specific reference to these indicators. These measures should be considered in addition to, not a substitute for or superior to, measures of financial performance prepared in accordance with GAAP. The cumulative tax effect was calculated using the statutory tax rates for the jurisdictions in which the transactions occurred.

Reconciliations of Non-GAAP Net Debt

(In millions)

	December 31	
	2019	2018
Current Maturities of Long-Term Debt as Reported	\$ 23.6	\$ 37.1
Long-Term Debt as Reported	\$ 198.5	\$ 239.0
Total Debt as Reported	\$ 222.1	\$ 276.1
Less Cash and Cash Equivalents as Reported	\$ (315.4)	\$ (300.2)
Net Debt	<u>\$ (93.3)</u>	<u>\$ (24.1)</u>

Management uses the non-GAAP net debt metric to show a more complete picture of the Company's overall liquidity, financial flexibility and leverage level. This adjusted measure should be considered supplemental to and not a substitute for financial information prepared in accordance with GAAP. The Company's definition of this measure may differ from similarly titled measures used by other entities.

Item 7A. Quantitative and Qualitative Disclosures About Market Risk

Foreign Currency Exchange Risk

Because the Company operates globally, its cash flows and operating results are subject to movements in foreign currency exchange rates. Except for the financial transactions, balances and forward contracts referred to below, most of the Company's foreign subsidiaries' financial instruments are denominated in their respective functional currencies.

The Company uses forward contracts to mitigate the exposure of certain foreign currency transactions and balances to fluctuating exchange rates. At December 31, 2019, the Company had forward contracts with an aggregated notional amount of \$48.5 million. Except for the Company's subsidiaries in Brazil, China and Colombia, foreign currency exposures are substantially hedged by forward contracts. The fair value of all forward contracts as of December 31, 2019, was a net asset of \$0.6 million. As of December 31, 2019, the potential reduction in the Company's earnings resulting from the impact of hypothetical adverse changes in exchange rates on the fair value of its outstanding foreign currency contracts of 10 percent for all currencies would have been \$2.8 million.

Interest Rates

The Company's debt was comprised entirely of fixed-rate borrowings totaling \$222.1 million as of December 31, 2019. A hypothetical 10 percent average change to short-term interest rates would result in less than a \$0.1 million increase or decrease to interest expense for 2020.

The fair value of the Company's long term fixed-rate debt, including current maturities, was estimated to be \$226.7 million as of December 31, 2019, which was approximately \$3.9 million above the carrying value. Market risk was estimated as the potential increase to the fair value that would result from a hypothetical 10 percent decrease in the Company's weighted average long-term borrowing rates at December 31, 2019, or \$2.8 million.

Commodity Price Risk

Certain raw materials used in the manufacture of the Company's products are subject to price volatility caused by weather, petroleum price fluctuations, general economic demand and other unpredictable factors. Increased raw material costs are recovered from customers as quickly as the marketplace allows; however, certain contractual arrangements allow for price changes only on a quarterly basis, and competitive pressures sometimes prevent the recovery of cost increases from customers, particularly in periods where there is excess industry capacity. As a result, for some product lines or market segments it may take time to recover raw material price increases. Periodically, firm purchase commitments are entered into which fix the price of a specific commodity that will be delivered at a future time. Forward purchase contracts are used to aid in managing the Company's natural gas costs. At December 31, 2019, the Company had open forward contracts for the purchase of 0.9 million dekatherms of natural gas at a cost of \$2.4 million. Because the Company has agreed to fixed prices for the noted quantity of natural gas, a hypothetical 10 percent fluctuation in the price of natural gas would cause the Company's actual natural gas cost to be \$0.3 million higher or lower than the cost at market price.

Item 8. Financial Statements and Supplementary Data

The following statements and data are included in this item:

<u>Report of Independent Registered Public Accounting Firm</u>	41
<u>Consolidated Statements of Income (For years ended December 31, 2019, 2018 and 2017)</u>	43
<u>Consolidated Statements of Comprehensive Income (For years ended December 31, 2019, 2018 and 2017)</u>	44
<u>Consolidated Balance Sheets (December 31, 2019 and 2018)</u>	45
<u>Consolidated Statements of Cash Flow (For years ended December 31, 2019, 2018 and 2017)</u>	46
<u>Consolidated Statements of Stockholders' Equity (For years ended December 31, 2019, 2018 and 2017)</u>	47
<u>Notes to Consolidated Financial Statements</u>	50
<u>Selected Quarterly Financial Data</u>	88

To the Shareholders and Board of Directors of:
Stepan Company
Northfield, Illinois

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of Stepan Company and subsidiaries (the “Company”) as of December 31, 2019 and 2018, the related consolidated statements of income, comprehensive income, equity, and cash flows for each of the three years in the period ended December 31, 2019, and the related notes (collectively referred to as the “financial statements”). In our opinion, the financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2019 and 2018, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2019, in conformity with accounting principles generally accepted in the United States of America.

We have also 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, 2019, based on criteria established in *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission and our report dated February 27, 2020, expressed an unqualified opinion on the Company’s internal control over financial reporting.

Changes in Accounting Principles

As discussed in Note 8 to the consolidated financial statements, the Company changed its method of accounting for leases in the year ended December 31, 2019, due to the adoption of ASU No. 2016-02 *Leases* (Topic 842) using the modified retrospective method.

As discussed in Note 2 to the consolidated financial statements, in 2019, the Company elected to change its method of accounting for its United States inventories from the last in, first out (LIFO) method to the first in, first out (FIFO) method and retrospectively adjusted the 2018 and 2017 financial statements for the change.

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 misstatements 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.

Critical Audit Matter

The critical audit matter communicated below is a matter arising from the current-period audit of the financial statements that was communicated or required to be communicated to the audit committee and that (1) relates to accounts or disclosures that are material to the financial statements and (2) involved our especially challenging, subjective, or complex judgments. The communication of critical audit matters does not alter in any way our opinion on the financial statements, taken as a whole, and we are not, by communicating the critical audit matter below, providing a separate opinion on the critical audit matter or on the accounts or disclosures to which it relates.

Contingencies — Refer to Note 17 to the Financial Statements

Critical Audit Matter Description

The Company is involved in several property sites where the Company may be exposed to liabilities for the remediation of environmental contamination. Environmental loss contingencies are evaluated based on the likelihood of the Company incurring a liability and whether a loss or range of losses is reasonably estimable. The likelihood and amount of a loss or range of losses are

estimated based on currently available information and assumptions related to the nature and extent of contamination and the methods and resulting costs of remediation. Past estimates for environmental liabilities are subject to adjustment as new facts emerge during the investigatory and remediation processes.

Given the subjectivity of estimating the likelihood of a loss, the range of potential loss, and the amount of liability to recognize, performing audit procedures to evaluate whether environmental loss contingencies were appropriately recorded and disclosed as of December 31, 2019, required especially challenging, subjective and complex auditor judgment and an increased extent of effort.

How the Critical Audit Matter Was Addressed in the Audit

Our audit procedures related to the environmental loss contingencies included the following, among others:

- We tested the effectiveness of internal controls related to the Company's development of the estimated environmental loss contingencies, including the assumptions related to the nature and extent of contamination and the methods and resulting costs of remediation.
- We inquired of Company legal counsel and external legal counsel to understand developments in environmental matters.
- We evaluated written responses received from external legal counsel as it relates to the environmental loss contingencies.
- We inquired of the Company's third-party environmental specialists to understand developments in environmental matters.
- We searched data on the U.S. Environmental Protection Agency website to identify any additional information relevant to the specific property sites.
- We read Board of Directors meeting minutes to identify any additional information relevant to the specific property sites.
- We evaluated whether the assumptions related to the nature and extent of contamination and the methods and resulting costs of remediation used by the Company to determine the estimated losses or ranges of losses were reasonable by comparing those assumptions to decisions rendered by state and Federal environmental regulatory agencies, information provided by feasibility studies and remedial action plans developed.
- If the Company's reasonable estimate of loss for a remediation site is a range, we evaluated whether the amount of the liability recognized by the Company within that range was reasonable based on the facts and circumstances specific to the remediation site.
- We evaluated the Company's environmental contingencies disclosures for consistency with our knowledge of the Company's environmental matters.

/s/ Deloitte & Touche LLP
DELOITTE & TOUCHE LLP

Chicago, Illinois
February 27, 2020

We have served as the Company's auditor since 2002.

Stepan Company
Consolidated Statements of Income
For the years ended December 31, 2019, 2018 and 2017

<i>(In thousands, except per share amounts)</i>	2019	2018 <i>As Adjusted</i>	2017 <i>As Adjusted</i>
Net Sales (Note 1)	\$ 1,858,745	\$ 1,993,857	\$ 1,925,007
Cost of Sales (1)	<u>1,519,031</u>	<u>1,654,508</u>	<u>1,578,840</u>
Gross Profit (1)	339,714	339,349	346,167
Operating Expenses:			
Selling (Note 1)	56,956	56,319	54,090
Administrative (Note 1)	82,577	79,243	75,615
Research, development and technical services (Note 1)	55,037	54,263	53,696
Deferred compensation expense (income)	<u>15,140</u>	<u>(2,329)</u>	<u>4,857</u>
	209,710	187,496	188,258
Business restructuring (Note 23)	<u>(2,744)</u>	<u>(2,588)</u>	<u>(3,069)</u>
Operating Income (1)	127,260	149,265	154,840
Other Income (Expense):			
Interest, net (Note 7)	(5,932)	(10,771)	(11,444)
Other, net (Note 9)	<u>4,571</u>	<u>(725)</u>	<u>3,486</u>
	(1,361)	(11,496)	(7,958)
Income Before Provision for Income Taxes (1)	125,899	137,769	146,882
Provision for Income Taxes (Note 10) (1)	<u>22,798</u>	<u>26,664</u>	<u>46,139</u>
Net Income (1)	103,101	111,105	100,743
Net Loss Attributable to Noncontrolling Interests (Note 1)	<u>28</u>	<u>12</u>	<u>31</u>
Net Income Attributable to Stepan Company (1)	\$ 103,129	\$ 111,117	\$ 100,774
Net Income Per Common Share Attributable to Stepan Company (Note 19):			
Basic (1)	<u>\$ 4.47</u>	<u>\$ 4.83</u>	<u>\$ 4.39</u>
Diluted (1)	<u>\$ 4.42</u>	<u>\$ 4.76</u>	<u>\$ 4.31</u>
Shares Used to Compute Net Income Per Common Share			
Attributable to Stepan Company (Note 19):			
Basic	<u>23,054</u>	<u>23,022</u>	<u>22,946</u>
Diluted	<u>23,316</u>	<u>23,325</u>	<u>23,377</u>

(1) The 2018 and 2017 amounts for the noted line items have been retrospectively changed from the amounts originally reported as a result of the Company's first quarter 2019 change in method of accounting for U.S. inventory valuation from LIFO to FIFO.

The accompanying Notes to Consolidated Financial Statements are an integral part of these statements.

Stepan Company
Consolidated Statements of Comprehensive Income
For the years ended December 31, 2019, 2018 and 2017

<i>(In thousands)</i>	2019	2018 <i>As Adjusted</i>	2017 <i>As Adjusted</i>
Net Income (1)	\$ 103,101	\$ 111,105	\$ 100,743
Other Comprehensive Income (Loss):			
Foreign currency translation adjustments (Note 20)	4,425	(37,966)	26,293
Defined benefit pension plans:			
Net actuarial gain (loss) arising in period (net of taxes of \$1,263, \$2,300 and \$771 for 2019, 2018 and 2017, respectively)	4,112	(7,080)	(582)
Amortization of prior service cost included in pension expense (net of taxes of \$3, \$3 and \$4 for 2019, 2018 and 2017, respectively)	9	10	10
Amortization of actuarial loss included in pension expense (net of taxes of \$657, \$979 and \$1,240 for 2019, 2018 and 2017, respectively)	2,082	3,080	2,269
Net defined benefit pension plan activity (Note 20)	6,203	(3,990)	1,697
Cash flow hedges:			
Reclassifications to income in period	(9)	(10)	(9)
Net cash flow hedge activity (Note 20)	(9)	(10)	(9)
Other Comprehensive Income (Loss)	10,619	(41,966)	27,981
Comprehensive Income (1)	113,720	69,139	128,724
Comprehensive (Income) Loss Attributable to Noncontrolling Interests	47	58	(48)
Comprehensive Income Attributable to Stepan Company (1)	\$ 113,767	\$ 69,197	\$ 128,676

(1) The 2018 and 2017 amounts for the noted line items have been retrospectively changed from the amounts originally reported as a result of the Company's first quarter 2019 change in method of accounting for U.S. inventory valuation from LIFO to FIFO.

The accompanying Notes to Consolidated Financial Statements are an integral part of these statements.

Stepan Company
Consolidated Balance Sheets
December 31, 2019 and 2018

<i>(Dollars in thousands)</i>	2019	2018 As Adjusted
Assets		
Current Assets:		
Cash and cash equivalents	\$ 315,383	\$ 300,194
Receivables, less allowances of \$9,325 in 2019 and \$9,654 in 2018	276,841	280,025
Inventories (Note 6) (1)	203,647	231,528
Other current assets	22,918	22,146
Total current assets (1)	<u>818,789</u>	<u>833,893</u>
Property, Plant and Equipment:		
Land	27,258	26,341
Buildings and improvements	223,793	212,072
Machinery and equipment	1,415,802	1,365,509
Construction in progress	95,282	62,868
	<u>1,762,135</u>	<u>1,666,790</u>
Less: accumulated depreciation	<u>(1,122,818)</u>	<u>(1,057,898)</u>
Property, plant and equipment, net	639,317	608,892
Goodwill, net (Note 5)	26,086	22,954
Other intangible assets, net (Note 5)	15,352	14,244
Long-term investments (Note 3)	28,227	25,082
Operating lease assets (Note 8)	38,386	—
Other non-current assets (1)	13,210	9,549
Total Assets (1)	<u>\$ 1,579,367</u>	<u>\$ 1,514,614</u>
Liabilities and Equity		
Current Liabilities:		
Current maturities of long-term debt (Note 7)	\$ 23,571	\$ 37,058
Accounts payable	194,276	205,954
Accrued liabilities (Note 15)	121,267	95,570
Total current liabilities	<u>339,114</u>	<u>338,582</u>
Deferred income taxes (Note 10) (1)	23,391	24,961
Long-term debt, less current maturities (Note 7)	198,532	239,022
Non-current operating lease liability (Note 8)	29,654	—
Other non-current liabilities (Note 16)	96,180	103,864
Commitments and Contingencies (Note 17)		
Equity (Note 11):		
Common stock, \$1 par value; authorized 60,000,000 shares; issued 26,493,335 shares in 2019 and 26,308,668 shares in 2018	26,493	26,309
Additional paid-in capital	193,135	182,881
Accumulated other comprehensive loss (Note 20) (2)	(136,170)	(141,483)
Retained earnings (1)(2)	922,464	837,107
Less: Common treasury stock, at cost, 3,979,735 shares in 2019 and 3,803,043 shares in 2018	<u>(114,139)</u>	<u>(97,389)</u>
Total Stepan Company stockholders' equity (1)	891,783	807,425
Noncontrolling interests	713	760
Total equity (1)	<u>892,496</u>	<u>808,185</u>
Total Liabilities and Equity (1)	<u>\$ 1,579,367</u>	<u>\$ 1,514,614</u>

(1) The 2018 amounts for the noted line items have been retrospectively changed from the amounts originally reported as a result of the Company's first quarter 2019 change in method of accounting for U.S. inventory valuation from LIFO to FIFO.

(2) The 2019 amounts for the noted line items include an adjustment related to the Company's first quarter 2019 adoption of Accounting Standards Update (ASU) No. 2018-02, *Income Statement – Reporting Comprehensive Income (Topic 220): Reclassification of Certain Tax Effects from Accumulated Other Comprehensive Income*.

The accompanying Notes to Consolidated Financial Statements are an integral part of these statements.

Stepan Company
Consolidated Statements of Cash Flows
For the years ended December 31, 2019, 2018 and 2017

<i>(In thousands)</i>	2019	2018 <i>As Adjusted</i>	2017 <i>As Adjusted</i>
Cash Flows From Operating Activities			
Net income ⁽¹⁾	\$ 103,101	\$ 111,105	\$ 100,743
Adjustments to reconcile net income to net cash provided by operating activities:			
Depreciation and amortization	78,701	81,115	79,022
Deferred compensation	15,140	(2,329)	4,857
Realized and unrealized gain on long-term investments	(3,955)	2,966	(4,178)
Stock-based compensation	8,872	6,837	7,151
Deferred income taxes ⁽¹⁾	(5,016)	10,355	(1,001)
Other non-cash items	2,240	4,622	4,857
Changes in assets and liabilities, excluding effects of acquisitions:			
Receivables, net	4,894	5,196	(16,358)
Inventories ⁽¹⁾	28,460	(24,678)	(1,990)
Other current assets	(680)	832	(489)
Accounts payable and accrued liabilities	(15,084)	(19,023)	30,476
Pension liabilities	(790)	(5,065)	(1,960)
Environmental and legal liabilities	2,519	(478)	(1,142)
Deferred revenues	26	(324)	(1,125)
Net Cash Provided By Operating Activities	<u>218,428</u>	<u>171,131</u>	<u>198,863</u>
Cash Flows From Investing Activities			
Expenditures for property, plant and equipment	(105,572)	(86,647)	(78,613)
Business acquisitions, net of cash acquired (Note 21)	(9,000)	(22,852)	(4,339)
Other, net	1,905	1,684	269
Net Cash Used In Investing Activities	<u>(112,667)</u>	<u>(107,815)</u>	<u>(82,683)</u>
Cash Flows From Financing Activities			
Revolving debt and bank overdrafts, net	(7,495)	6,045	(6,008)
Other debt repayments	(46,429)	(20,714)	(20,714)
Dividends paid	(23,097)	(20,857)	(18,907)
Company stock repurchased	(13,184)	(15,500)	(6,000)
Stock option exercises	3,037	4,163	3,370
Other, net	(3,326)	(4,785)	(2,238)
Net Cash Used In Financing Activities	<u>(90,494)</u>	<u>(51,648)</u>	<u>(50,497)</u>
Effect of Exchange Rate Changes on Cash	(78)	(10,368)	7,468
Net Increase in Cash and Cash Equivalents	15,189	1,300	73,151
Cash and Cash Equivalents at Beginning of Year	300,194	298,894	225,743
Cash and Cash Equivalents at End of Year	<u>\$ 315,383</u>	<u>\$ 300,194</u>	<u>\$ 298,894</u>
Supplemental Cash Flow Information			
Cash payments of income taxes, net of refunds	\$ 29,331	\$ 32,973	\$ 25,661
Cash payments of interest	\$ 12,250	\$ 12,829	\$ 13,889

(1) The 2018 and 2017 amounts for the noted line items have been retrospectively changed from the amounts originally reported as a result of the Company's first quarter 2019 change in method of accounting for U.S. inventory valuation from LIFO to FIFO.

The accompanying Notes to Consolidated Financial Statements are an integral part of these statements.

Stepan Company
Consolidated Statements of Equity
For the year ended December 31, 2017

<i>(In thousands, except share and per share amounts)</i>	STEPAN COMPANY STOCKHOLDERS						
	<i>Total</i>	<i>Common Stock</i>	<i>Additional Paid-in Capital</i>	<i>Treasury Stock</i>	<i>Accumulated Other Comprehensive Income (Loss)</i>	<i>Retained Earnings</i>	<i>Noncontrolling Interest</i>
Balance, December 31, 2016 ⁽¹⁾	652,024	\$ 25,895	\$ 158,042	\$ (70,938)	\$ (127,465)	\$ 665,178	\$ 1,312
Issuance of 104,277 shares of common stock under stock option plan	3,370	104	3,266	—	—	—	—
Purchase of 76,790 shares of common stock	(6,000)	—	—	(6,000)	—	—	—
Stock-based and deferred compensation	7,549	72	9,100	(1,623)	—	—	—
Net income ⁽¹⁾	100,743	—	—	—	—	100,774	(31)
Other comprehensive income	27,981	—	—	—	27,902	—	79
Cash dividends paid:							
Common stock (\$0.86 per share)	(18,907)	—	—	—	—	(18,907)	—
Payment of cash dividends to noncontrolling interest	(542)	—	—	—	—	—	(542)
Balance, December 31, 2017 ⁽¹⁾	<u>\$ 766,218</u>	<u>\$ 26,071</u>	<u>\$ 170,408</u>	<u>\$ (78,561)</u>	<u>\$ (99,563)</u>	<u>\$ 747,045</u>	<u>\$ 818</u>

- (1) The retained earnings and net income amounts for the noted line items have been retrospectively changed from the amounts originally reported as a result of the Company's first quarter 2019 change in method of accounting for U.S. inventory valuation from LIFO to FIFO.

The accompanying Notes to Consolidated Financial Statements are an integral part of these statements.

Stepan Company
Consolidated Statements of Equity
For the year ended December 31, 2018

<i>(In thousands, except share and per share amounts)</i>	STEPAN COMPANY STOCKHOLDERS						
	<i>Total</i>	<i>Common Stock</i>	<i>Additional Paid-in Capital</i>	<i>Treasury Stock</i>	<i>Accumulated Other Comprehensive Income (Loss)</i>	<i>Retained Earnings</i>	<i>Noncontrolling Interest</i>
Balance, December 31, 2017 ⁽¹⁾	\$ 766,218	\$ 26,071	\$ 170,408	\$ (78,561)	\$ (99,563)	\$ 747,045	\$ 818
Issuance of 97,471 shares of common stock under stock option plan	4,163	97	4,066	—	—	—	—
Purchase of 205,983 shares of common stock	(15,500)	—	—	(15,500)	—	—	—
Stock-based and deferred compensation	5,220	141	8,407	(3,328)	—	—	—
Net income ⁽¹⁾	111,105	—	—	—	—	111,117	(12)
Other comprehensive income	(41,966)	—	—	—	(41,920)	—	(46)
Cash dividends paid:							
Common stock (\$0.93 per share)	(20,857)	—	—	—	—	(20,857)	—
Other ⁽²⁾	(198)	—	—	—	—	(198)	—
Balance, December 31, 2018 ⁽¹⁾	<u>\$ 808,185</u>	<u>\$ 26,309</u>	<u>\$ 182,881</u>	<u>\$ (97,389)</u>	<u>\$ (141,483)</u>	<u>\$ 837,107</u>	<u>\$ 760</u>

- (1) The retained earnings and net income amounts for the noted line items have been retrospectively changed from the amounts originally reported as a result of the Company's first quarter 2019 change in method of accounting for U.S. inventory valuation from LIFO to FIFO.
- (2) Reflects beginning retained earnings adjustment as a result of the Company's first quarter 2018 adoption of ASU No. 2016-16, *Income Taxes (Topic 740): Intra-Entity Transfers of Assets Other Than Inventory*.

The accompanying Notes to Consolidated Financial Statements are an integral part of these statements.

Stepan Company
Consolidated Statements of Equity
For the year ended December 31, 2019

<i>(In thousands, except share and per share amounts)</i>	STEPAN COMPANY STOCKHOLDERS						
	<i>Total</i>	<i>Common Stock</i>	<i>Additional Paid-in Capital</i>	<i>Treasury Stock</i>	<i>Accumulated Other Comprehensive Income (Loss)</i>	<i>Retained Earnings</i>	<i>Noncontrolling Interest</i>
Balance, December 31, 2018 ⁽¹⁾	\$ 808,185	\$ 26,309	\$ 182,881	\$ (97,389)	\$ (141,483)	\$ 837,107	\$ 760
Issuance of 59,799 shares of common stock under stock option plan	3,037	60	2,977	—	—	—	—
Purchase of 144,457 shares of common stock	(13,184)	—	—	(13,184)	—	—	—
Stock-based and deferred compensation	3,835	124	7,277	(3,566)	—	—	—
Net income	103,101	—	—	—	—	103,129	(28)
Other comprehensive income	10,619	—	—	—	10,638	—	(19)
Cash dividends paid:							
Common stock (\$1.03 per share)	(23,097)	—	—	—	—	(23,097)	—
Other ⁽²⁾	—	—	—	—	(5,325)	5,325	—
Balance, December 31, 2019	<u>\$ 892,496</u>	<u>\$ 26,493</u>	<u>\$ 193,135</u>	<u>\$ (114,139)</u>	<u>\$ (136,170)</u>	<u>\$ 922,464</u>	<u>\$ 713</u>

- (1) The retained earnings amount for the noted line item has been retrospectively changed from the amount originally reported as a result of the Company's first quarter 2019 change in method of accounting for U.S. inventory valuation from LIFO to FIFO.
- (2) Reflects beginning retained earnings adjustment as a result of the Company's first quarter 2019 adoption of ASU No. 2018-02, *Income Statement – Reporting Comprehensive Income (Topic 220): Reclassification of Certain Tax Effects from Accumulated Other Comprehensive Income*.

The accompanying Notes to Consolidated Financial Statements are an integral part of these statements.

1. Summary of Significant Accounting Policies

Nature of Operations

Stepan Company (the Company) operations consist predominantly of the production and sale of specialty and intermediate chemicals, which are sold to other manufacturers for use in a variety of end products. Principal markets for all products are manufacturers of cleaning and washing compounds (including detergents, shampoos, fabric softeners, toothpastes and household cleaners), paints, cosmetics, food, beverages, nutritional supplements, agricultural products, plastics, furniture, automotive equipment, insulation and refrigeration.

Use of Estimates

The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America (GAAP) requires Company management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

Principles of Consolidation

The consolidated financial statements include the accounts of the Company and all wholly and majority-owned subsidiaries in which the Company exercises controlling influence. The equity method is used to account for investments in which the Company exercises significant but noncontrolling influence. Intercompany balances and transactions are eliminated in consolidation.

The Company has an 80 percent ownership interest in the Nanjing Stepan Jinling Chemical Limited Liability Company (a joint venture) and exercises controlling influence over the entity. Therefore, Nanjing Stepan Jinling Chemical Limited Liability Company's accounts are included in the Company's consolidated financial statements. The partner's interest in the joint venture's net income is reported in the net income attributable to noncontrolling interests line of the consolidated statements of income. The partner's interest in the net assets of the joint venture is reported in the noncontrolling interests line (a component of equity separate from Company equity) of the consolidated balance sheets.

Cash and Cash Equivalents

The Company considers all highly liquid investments with purchased maturities of three months or less to be cash equivalents.

At December 31, 2019, the Company's cash and cash equivalents totaled \$315.4 million including \$110.7 million in money market funds, each of which was rated AAAm by Standard and Poor's, Aaa-mf by Moody's and AAAMmf by Fitch. Cash in U.S. demand deposit accounts and certificates of deposit totaled \$105.7 million and cash of the Company's non-U.S. subsidiaries held outside the U.S. totaled \$99.0 million as of December 31, 2019.

Receivables and Credit Risk

Receivables are stated net of allowances for doubtful accounts and other allowances and primarily include trade receivables from customers, as well as nontrade receivables from suppliers, governmental tax agencies and others.

The Company is exposed to credit risk on accounts receivable balances. This risk is mitigated by the Company's large, diverse customer base, which is dispersed over various geographic regions and industrial sectors. No single customer comprised more than 10 percent of the Company's consolidated net sales in 2019, 2018 or 2017.

The Company maintains allowances for potential credit losses. Specific customer allowances are recorded when a review of customer creditworthiness and current economic conditions indicate that collection is doubtful. The Company also maintains other customer allowances that occur in the normal course of business. Such allowances are based on historical averages and trade receivable levels.

The following is an analysis of the allowance for doubtful accounts and other accounts receivable allowances for the years ended December 31, 2019, 2018 and 2017:

<i>(In thousands)</i>	2019	2018	2017
Balance at January 1	\$ 9,654	\$ 10,116	\$ 9,755
Provision charged to income	29	764	45
Accounts written off, net of recoveries	(358)	(1,226)	316
Balance at December 31	<u>\$ 9,325</u>	<u>\$ 9,654</u>	<u>\$ 10,116</u>

Inventories

Inventories are valued at cost, which is not in excess of market value, and include material, labor and plant overhead costs. Prior to 2019, the LIFO method was used to determine the cost of the Company's U.S. inventories. Effective January 1, 2019, the Company elected to change its method of accounting for U.S. inventories from the LIFO basis to FIFO basis. Non-U.S. inventories have historically been maintained on the FIFO basis. Prior period financial statements have been adjusted to reflect what results would have been had the Company always used the FIFO method of inventory valuation for U.S. inventories. See Note 2 for additional details.

Property, Plant and Equipment

Depreciation of property, plant and equipment is provided on a straight-line basis over the estimated useful lives of the assets. Lives used for calculating depreciation are generally 30 years for buildings and 15 years for building improvements. For assets classified as machinery and equipment, lives generally used for calculating depreciation expense range from 10 to 15 years for manufacturing equipment, five to 10 years for furniture and fixtures, three to five years for vehicles and three to 10 years for computer equipment and software. Manufacturing of chemicals is capital intensive and a large majority of the assets included within machinery and equipment represent manufacturing equipment. Major renewals and betterments are capitalized in the property accounts, while maintenance and repairs (\$58,464,000, \$57,010,000, and \$51,926,000 in 2019, 2018 and 2017, respectively), which do not renew or extend the life of the respective assets, are charged to operations as incurred. Land is not depreciated. The cost of property retired or sold and the related accumulated depreciation are removed from the accounts and any resulting gain or loss is reflected in income.

Included in the computer equipment and software component of machinery and equipment are costs related to the acquisition and development of internal-use software. Capitalized costs for internal-use software include external direct costs of materials and services consumed in obtaining and developing the software. For development projects where major internal resources are committed, payroll and payroll-related costs incurred during the application development phase of the project are also capitalized. The capitalized costs are amortized over the useful lives of the software, which are generally three to 10 years. Costs incurred in the preliminary project phase are expensed.

Interest charges on borrowings applicable to major construction projects are capitalized.

Fair Value Measurements

GAAP defines fair value as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. Furthermore, GAAP establishes a framework, in the form of a three-level hierarchy, for measuring fair value that prioritizes the inputs to valuation techniques used to measure fair value. The following describes the hierarchy levels:

Level 1 - quoted prices in active markets for identical assets and liabilities.

Level 2 - inputs other than quoted prices included within Level 1 that are directly or indirectly observable for the asset or liability, such as quoted prices for similar assets or liabilities in active markets, quoted prices for identical or similar assets and liabilities in markets that are not active, or other inputs that are observable or can be corroborated by observable market data.

Level 3 - unobservable inputs which reflect the entity's own assumptions about the assumptions market participants use in pricing the assets and liabilities.

The Company applies the fair value measurement provisions of GAAP to any of its financial assets and liabilities that are carried at fair value on the consolidated balance sheets (see Note 3), its outstanding debt for disclosure purposes (also Note 3) and its pension plan assets (see Note 14).

The Company also applies the fair value measurement requirements to nonrecurring fair value measurements of nonfinancial assets and liabilities recorded in conjunction with business combinations and as part of impairment reviews for goodwill and other long-lived assets.

Revenue Recognition

The Company's contracts typically have a single performance obligation that is satisfied at the time product is shipped and control passes to the customer. For a small portion of the business, performance obligations are deemed satisfied when product is delivered to a customer location. For arrangements where the Company consigns product to a customer location, revenue is recognized when the customer uses the inventory. The Company accounts for shipping and handling as activities to fulfill a promise to transfer a good. As such, shipping and handling fees billed to customers in a sales transaction are recorded in Net Sales and shipping and handling costs incurred are recorded in Cost of Sales. Volume and cash discounts due customers are estimated and recorded in the same period as the sales to which the discounts relate and are reported as reductions of revenue in the consolidated statements of income. See Note 22 to the consolidated financial statements for more details.

Cost of Sales

Cost of sales comprises raw material costs (including inbound freight expense to deliver the raw materials), manufacturing plant labor expenses and various manufacturing overhead expenses, such as utility, maintenance, operating supply, amortization and manufacturing asset depreciation expenses. Cost of sales also includes outbound shipping and handling expenses, inter-plant transfer costs, warehouse expenses and rail car rental expenses.

Operating Expenses

Selling expense comprises salary and the related fringe benefit expenses for marketing and sales personnel and operating costs, such as outside agent commissions, automobile rental and travel-related expenses, which support the sales and marketing functions. Bad debt charges and any depreciation expenses related to marketing assets (e.g., computers) are also classified as selling expense.

Administrative expense comprises salary and the related fringe benefit expenses and operating costs for the Company's various administrative functions, which include information services, finance, legal, and human resources. The majority of environmental remediation expenses are also classified as administrative expense.

The Company's research and development costs are expensed as incurred. These expenses are aimed at discovery and commercialization of new knowledge with the intent that such effort will be useful in developing a new product or in bringing about a significant improvement to an existing product or process. Total research and development expenses were \$34,139,000, \$33,519,000, and \$33,169,000 in 2019, 2018 and 2017, respectively. The remainder of research, development and technical service expenses reflected on the consolidated statements of income relates to technical services, which include routine product testing, quality control and sales support service.

Compensation expense or income related to the Company's deferred compensation plans is presented in the deferred compensation expense (income) line in the Consolidated Statements of Income.

Environmental Expenditures

Environmental expenditures that relate to current operations are expensed in cost of sales. Expenditures that mitigate or prevent environmental contamination and that benefit future operations are capitalized as assets and depreciated on a straight-line basis over the estimated useful lives of the assets, which are typically 10 years.

Estimated future expenditures that relate to an existing condition caused by past operations, and which do not contribute to current or future revenue generation, are recorded as liabilities, with the corresponding charge typically recorded in administrative expenses, when environmental assessments and/or remedial efforts are probable and the cost or range of possible costs can be reasonably estimated. When no amount within the range is a better estimate than any other amount, the minimum amount in the range is accrued. Some of the factors on which the Company bases its estimates include information provided by feasibility studies, potentially responsible party negotiations and the development of remedial action plans. Legal costs related to environmental matters are expensed as incurred (see Note 17 for environmental contingencies).

Goodwill and Other Intangible Assets

The Company's intangible assets include patents, agreements not to compete, trademarks, customer lists and relationships, technological and manufacturing know-how, supply contracts and goodwill, all of which were acquired as part of business or product line acquisitions. Intangible assets other than goodwill are determined to have either finite or indefinite useful lives. The Company

currently has no indefinite-life intangible assets other than goodwill. The values for intangible assets with finite lives are amortized over the useful lives of the assets. Currently, the useful lives for the Company's finite-lived intangible assets are as follows: patents – 10-15 years; non-compete agreements – five years; trademarks – 11 years; customer relationships – 10-25 years; supply contracts – four years and know-how – 8-14 years. In addition, finite-life intangible assets are tested for impairment when events or changes in circumstances indicate that the carrying value of an intangible asset may not be recoverable. Goodwill is not amortized but is tested for impairment at least annually or more frequently if an event occurs or circumstances change that would more likely than not reduce the fair value of a reporting unit to which goodwill relates below the reporting unit's carrying value. See Note 5 for detailed information about goodwill and other intangible assets.

Income Taxes

Income taxes are accounted for under the asset and liability method, which requires the recognition of deferred tax assets and liabilities for the expected future tax consequences of events that have been included in the financial statements. Under this method, deferred tax assets and liabilities are determined on the basis of the differences between the financial statement and tax bases of assets and liabilities using enacted tax rates in effect for the year in which the differences are expected to reverse. The effect of a change in tax rates on deferred tax assets and liabilities is recognized in income in the period that includes the enactment date.

Deferred tax assets are recognized to the extent that we believe these assets are more likely than not to be realized. In making such a determination, we consider all available positive and negative evidence, including future reversals of existing taxable temporary differences, projected future taxable income, tax-planning strategies, and results of recent operations. If we determine that we would be able to realize our deferred tax assets in the future in excess of their net recorded amount, we would make an adjustment to the deferred tax asset valuation allowance, which would reduce the provision for income taxes.

Uncertain tax positions are recorded in accordance with ASC 740 on the basis of a two-step process whereby (1) we determine whether it is more likely than not that the tax positions will be sustained on the basis of the technical merits of the position and (2) for those tax positions that meet the more-likely-than-not recognition threshold, we recognize the largest amount of tax benefit that is more than 50 percent likely to be realized upon ultimate settlement with the related tax authority.

The Company recognizes interest and penalties related to unrecognized tax benefits within the income tax expense line in the accompanying Consolidated Statement of Operations. Accrued interest and penalties are included within the related tax liability line in the Consolidated Balance Sheet. See Note 10 for more information about the Company's income taxes.

Translation of Foreign Currencies

For the Company's consolidated foreign subsidiaries whose functional currency is the local foreign currency, assets and liabilities are translated into U.S. dollars at exchange rates in effect at year end and revenues and expenses are translated at average exchange rates for the year. Any resulting translation adjustments are included in the consolidated balance sheets in the accumulated other comprehensive loss line of stockholders' equity. Gains or losses on foreign currency transactions are reflected in the other, net caption of the consolidated statements of income. The Company has three foreign subsidiaries whose functional currencies are the U.S. dollar. For these subsidiaries, nonmonetary assets and liabilities are translated at historical rates, monetary assets and liabilities are translated at exchange rates in effect at year end, revenues and expenses are translated at average exchange rates for the year and translation gains and losses are included in the other, net caption of the consolidated statements of income.

Stock-Based Compensation

The Company grants stock options, stock awards (including performance-based stock awards) and SARs to certain employees under its incentive compensation plans. The Company calculates the fair values of stock options, stock awards and SARs on the date such instruments are granted. The fair values of the stock options and stock awards are then recognized as compensation expense over the vesting periods of the instruments. The Company's SARs granted before 2015 settle in cash. The cash-settled SARs are accounted for as liabilities that must be re-measured at fair value at the end of each reporting period. Compensation expense for each reporting period is calculated as the period-to-period change (or portion of the change, depending on the proportion of the vesting period that has been completed at the reporting date) in the fair value of the cash-settled SARs. SARs granted subsequent to 2014 are settled in shares of Company common stock. Compensation expense for the stock-settled SARs is calculated in the same way as compensation expense for stock options. See Note 12 for detailed information about the Company's stock-based compensation.

Earnings Per Share

Basic earnings per share amounts are computed as net income attributable to the Company divided by the weighted-average number of common shares outstanding. Diluted earnings per share amounts are based on the weighted-average number of common

shares outstanding plus the weighted-average of net common shares (under the treasury stock method) that would be outstanding assuming the exercise of outstanding stock options and stock-settled SARs, the vesting of unvested stock awards that have no performance or market condition and the issuance of contingent performance stock awards. See Note 19 for detailed information about the Company's earnings per share calculations.

Comprehensive Income and Accumulated Other Comprehensive Income

Comprehensive income includes net income and all other non-owner changes in equity that are not reported in net income. Comprehensive income is disclosed in the consolidated statements of comprehensive income. Accumulated other comprehensive income (AOCI) is reported as a component of stockholders' equity in the Company's consolidated balance sheets. See Note 20 for detailed information regarding changes in the Company's AOCI and reclassifications out of AOCI to income.

Segment Reporting

The Company reports financial and descriptive information about its reportable operating segments. Operating segments are components of the Company that have separate financial information that is regularly evaluated by the chief operating decision maker to assess segment performance and allocate resources. The Company discloses segment revenue, operating income, assets, capital expenditures and depreciation and amortization expenses. Enterprise-wide financial information about the geographic locations in which the Company earns revenues and holds assets is also disclosed. See Note 18 for detailed information about the Company's segment reporting.

Derivative Instruments

Derivative instruments are recognized in the consolidated balance sheets as either assets or liabilities measured at fair value. For derivative instruments that are not designated as hedging instruments, changes in the fair values of the derivative instruments are recognized currently in earnings. For derivative instruments designated as hedging instruments, depending on the nature of the hedge, changes in the fair values of the derivative instruments are either offset in earnings against changes in the fair values of the hedged items or recognized in AOCI until the hedged transaction is recognized in earnings. At the time a hedging relationship is designated, the Company establishes the method it will use for assessing the effectiveness of the hedge and the measurement approach for determining the ineffective aspect of the hedge. Company policy prohibits the use of derivative instruments for trading or speculative purposes. See Note 4 for further information regarding the Company's use of derivatives.

At December 31, 2019, the Company held open forward contracts for the purchase of 0.9 million dekatherms of natural gas in 2020 at a cost of \$2,442,000. The Company uses forward contracts to minimize its exposure to volatile natural gas prices. Because the Company anticipates taking delivery of the natural gas for use in its operations, the forward contracts qualify for the normal purchase exception provided under U.S. GAAP for derivative instruments. The Company has elected the exception for such contracts. As a result, the forward contracts are not accounted for as derivative instruments. The cost of natural gas is charged to expense at the time the natural gas is delivered and used.

Recent Accounting Pronouncements

In February 2016, the Financial Accounting Standards Board (FASB) issued ASU No. 2016-2, *Leases (Topic 842)*. This guidance requires a dual approach for lessee accounting whereby a lessee will account for lease arrangements with terms greater than 12 months as either finance leases or operating leases. Both finance leases and operating leases are recognized on the lessee's balance sheet as right-of-use assets and corresponding lease liabilities, with differing methodologies for income statement recognition. In addition, the ASU requires expanded qualitative and quantitative disclosures about the Company's lease arrangements. This guidance is effective for public business entities for fiscal years, and interim periods within those years, beginning after December 15, 2018. The most significant impact of ASU No. 2016-2, *Leases (Topic 842)* is that a lessee is required to recognize a "right-of-use" asset and corresponding lease liability for operating leases agreements. The Company adopted the new lease standard on January 1, 2019 by recognizing lease assets and the corresponding lease liabilities. The adoption of these guidelines did not have an impact on retained earnings, the Company's results of operations or cash flows, but it did have a material impact on specific balance sheet line items. See Note 8, *Leases* for more details.

In February 2018, the FASB issued ASU No. 2018-02, *Income Statement-Reporting Comprehensive Income (Topic 220): Reclassification of Certain Tax Effects from Accumulated Other Comprehensive Income*, which permits a reclassification from accumulated other comprehensive income to retained earnings for stranded tax effects resulting from the Tax Act. Consequently, the update reclassifies the stranded tax effects resulting from the Tax Act and should improve the usefulness of information reported to financial statement users. However, because the amendments only relate to the reclassification of the income tax effects of the Tax Act, the underlying guidance that requires that the effects of the change in tax laws or rates be included in income from continuing operations is not affected. The amendments in this update also require certain disclosures about stranded tax effects. This update is

effective for public business entities for fiscal years, and interim periods within those years, beginning after December 15, 2018. The Company adopted this guidance and recorded a \$5,325,000 adjustment to the opening balance of retained earnings as of January 1, 2019 with the corresponding offset to AOCI. See Note 20, *Accumulated Other Comprehensive Income (Loss)* for more details.

In June 2016, the FASB issued ASU No. 2016-13, *Financial Instruments-Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments* which amends the guidance on the measurement of the impairment of financial instruments. The new pronouncement replaces the existing model of measuring credit losses with an expected credit loss model referred to as “the Current Expected Credit Loss (CECL) model.” The new model is based on expected losses that should be measured based not only on historical experience but on the combination of historical data, current conditions and reasonable forecasts. Under this methodology, an entity recognizes as an allowance its estimate of lifetime expected credit losses and is required to apply the new credit loss model to most financial instruments held at amortized cost including trade receivables. The amendments in the update are effective for fiscal years, and interim periods within fiscal years, beginning after December 15, 2019. The adoption of the guidance in ASU No. 2016-13 will not have a material effect on the Company’s financial position, results of operations or cash flows.

In January 2017, the FASB issued ASU No. 2017-4, *Intangibles – Goodwill and Other (Topic 350): Simplifying the Test for Goodwill Impairment*, which eliminates Step 2 from the goodwill impairment test. When an indication of impairment was identified after performing the first step of the goodwill impairment test, Step 2 required that an entity determine the fair value at the impairment testing date of its assets and liabilities (including unrecognized assets and liabilities) using the same procedure that would be required in determining the fair value of assets acquired and liabilities assumed in a business combination. Under the amendments in ASU No. 2017-4, an entity would perform its annual, or interim, goodwill impairment test by comparing the fair value of a reporting unit with its carrying value. An entity would recognize an impairment charge for the amount by which the carrying value exceeds the reporting unit’s fair value. In addition, an entity must consider income tax effects from any tax deductible goodwill on the carrying amount of the reporting unit when measuring the goodwill impairment loss, if applicable. The Company is required to adopt the amendments in ASU No. 2017-4 for its annual, or any interim, goodwill impairment tests in fiscal years beginning after December 15, 2019. The adoption of the guidance in ASU No. 2017-4 in 2020 is not expected to have a material effect on the Company’s financial position, results of operations or cash flows.

In August 2018, the FASB issued ASU No. 2018-13, *Fair Value Measurement (Topic 820) Disclosure Framework-Changes to the Disclosure Requirements for Fair Value Measurement*. This update modifies some disclosure requirements related to fair value measurements used for different levels of instruments in fair value hierarchy (Level 1, Level 2 and Level 3). The amendments in the update are effective for fiscal years, and interim periods within fiscal years, beginning after December 15, 2019. The adoption of this update is not expected to have an effect on the Company’s financial position, results of operations and cash flows but may impact the disclosures made for fair value measurements used by the Company.

In August 2018, the FASB issued ASU No. 2018-14, *Compensation-Retirement Benefits-Defined Benefit Plans-General (Subtopic 715-20)*. This update removes some disclosures about defined benefit plans that are no longer considered cost beneficial and adds some disclosures that have been identified as relevant. The amendments in this update are effective for fiscal years ending after December 15, 2020. The adoption of this update is not expected to have an effect on the Company’s financial position, results of operations and cash flows but will impact the disclosures made for the Company’s defined benefit retirement plans.

In August 2018, the FASB issued ASU No. 2018-15, *Intangibles-Goodwill and Other-Internal-Use software (Subtopic 350-40) Customer’s Accounting for Implementation Costs Incurred in a Cloud Computing Arrangement that is a Service Contract*. This update aligns the requirements for capitalizing implementation costs incurred in a hosting arrangement that is a service contract with the requirements for capitalizing implementation costs incurred to develop or obtain internal-use software. This update requires the entity to determine which implementation costs to capitalize as an asset related to the service contracts and which costs to expense over the term of the hosting contract. The amendments in this update are effective for fiscal years beginning after December 15, 2019. The Company has elected to apply the update prospectively to eligible implementation costs incurred starting January 1, 2020. The adoption of the guidance in ASU No. 2018-15 will not have a material effect on the Company’s financial position, results of operations or cash flows.

In December 2019, the FASB issued ASU No. 2019-12, *Income Taxes (Topic 740), Simplifying the Accounting for Income Taxes*. This update provides guidance to reduce complexity in certain areas of accounting for income taxes. The amendments in this update are effective for fiscal years beginning after December 15, 2020. The adoption of this update is not expected to have a material effect on the Company’s financial position, results of operations and cash flows.

2. Change in Method of Accounting for Inventory Valuation

On January 1, 2019, the Company elected to change its method of accounting for U.S. inventories from the LIFO basis to the FIFO basis. Total U.S. inventories accounted for using the LIFO cost flow assumption, prior to the accounting method change, comprised 68 percent of the Company’s total inventories as of December 31, 2018. Non-U.S. inventories have historically been maintained on the FIFO basis. The Company believes that this change to the FIFO method of inventory valuation is preferable as it provides a better matching of costs with the physical flow of goods, more accurately reflects the current market value of inventory

presented on the Company's consolidated balance sheets, standardizes the Company's inventory valuation methodology and improves comparability with the Company's industry peers.

In accordance with ASC 250, *Accounting Changes and Error Corrections*, this change in method of accounting for U.S. inventories has been retrospectively applied to all prior periods presented herein. Prior period financial statements and financial comparables have been adjusted to reflect what results would have been had the Company always used the FIFO method of inventory valuation for U.S. inventories. The cumulative effect on retained earnings for these changes was \$23,659,000 at December 31, 2018.

The following tables present the prior year financial statement line items that have been affected by the retrospective change in accounting principle:

Income Statement

(In thousands, except per share amounts)

	Year Ended December 31, 2018		
	As originally reported under LIFO	Effect of change	As adjusted under FIFO
Cost of Sales	\$ 1,652,354	\$ 2,154	\$ 1,654,508
Gross Profit	341,503	(2,154)	339,349
Operating Income	151,419	(2,154)	149,265
Income Before Provision for Income Taxes	139,923	(2,154)	137,769
Provision for Income Taxes	27,173	(509)	26,664
Net Income	112,750	(1,645)	111,105
Net Income Attributable to Stepan Company	112,762	(1,645)	111,117
Net Income Per Diluted Common Share Attributable to Stepan Company	\$ 4.83	\$ (0.07)	\$ 4.76

(In thousands, except per share amounts)

	Year Ended December 31, 2017		
	As originally reported under LIFO	Effect of change	As adjusted under FIFO
Cost of Sales	\$ 1,586,485	\$ (7,645)	\$ 1,578,840
Gross Profit	338,522	7,645	346,167
Operating Income	147,195	7,645	154,840
Income Before Provision for Income Taxes	139,237	7,645	146,882
Provision for Income Taxes	47,690	(1,551)	46,139
Net Income	91,547	9,196	100,743
Net Income Attributable to Stepan Company	91,578	9,196	100,774
Net Income Per Diluted Common Share Attributable to Stepan Company	\$ 3.92	\$ 0.39	\$ 4.31

Balance Sheet

(In thousands)

	December 31, 2018		
	As originally reported under LIFO	Effect of change	As adjusted under FIFO
Inventories	\$ 200,165	\$ 31,363	\$ 231,528
Other Non-Current Assets	10,964	(1,415)	9,549
Total Assets	1,484,666	29,948	1,514,614
Deferred Income Taxes	\$ 18,672	\$ 6,289	\$ 24,961
Retained Earnings	813,448	23,659	837,107
Total Liabilities and Equity	1,484,666	29,948	1,514,614

Statement of Cash Flows

<i>(In thousands)</i>	Year Ended December 31, 2018		
	As originally reported under LIFO	Effect of change	As adjusted under FIFO
Net Income	\$ 112,750	\$ (1,645)	\$ 111,105
Deferred Income Taxes	10,864	(509)	10,355
Change in Assets and Liabilities:			
Inventories	(26,832)	2,154	(24,678)

<i>(In thousands)</i>	Year Ended December 31, 2017		
	As originally reported under LIFO	Effect of change	As adjusted under FIFO
Net Income	\$ 91,547	\$ 9,196	\$ 100,743
Deferred Income Taxes	550	(1,551)	(1,001)
Change in Assets and Liabilities:			
Inventories	5,655	(7,645)	(1,990)

The following tables present what 2019 financial statement line items would have been had the Company not changed its method of accounting for U.S. inventories from the LIFO to FIFO basis:

Income Statement

<i>(In thousands, except per share amounts)</i>	Year Ended December 31, 2019		
	As reported under FIFO	Effect of change	As computed under LIFO
Cost of Sales	\$ 1,519,031	\$ (4,000)	\$ 1,515,031
Gross Profit	339,714	4,000	343,714
Operating Income	127,260	4,000	131,260
Income Before Provision for Income Taxes	125,899	4,000	129,899
Provision for Income Taxes	22,798	983	23,781
Net Income	103,101	3,017	106,118
Net Income Attributable to Stepan Company	103,129	3,017	106,146
Net Income Per Diluted Common Share Attributable to Stepan Company	\$ 4.42	\$ 0.13	\$ 4.55

Balance Sheet

<i>(In thousands)</i>	December 31, 2019		
	As reported under FIFO	Effect of change	As computed under LIFO
Inventories	\$ 203,647	\$ (27,363)	\$ 176,284
Other Non-Current Assets	13,210	1,415	14,625
Total Assets	1,579,367	(25,948)	1,553,419
Deferred Income Taxes	\$ 23,391	\$ (5,306)	\$ 18,085
Retained Earnings	922,464	(20,642)	901,822
Total Liabilities and Equity	1,579,367	(25,948)	1,553,419

Statement of Cash Flows

(In thousands)	Year Ended December 31, 2019		
	As reported under FIFO	Effect of change	As computed under LIFO
Net Income	\$ 103,101	\$ 3,017	\$ 106,118
Deferred Income Taxes	(5,016)	983	(4,033)
Change in Assets and Liabilities:			
Inventories	28,460	(4,000)	24,460

3. Fair Value Measurements

The following were the financial instruments held by the Company at December 31, 2019 and 2018, and the methods and assumptions used to estimate the instruments' fair values:

Cash and cash equivalents

Carrying value approximated fair value because of the short maturity of the instruments.

Derivative assets and liabilities

Derivative assets and liabilities include the foreign currency exchange contracts discussed in Note 4. Fair value and carrying value were the same because the contracts were recorded at fair value. The fair values of the foreign currency contracts were calculated as the difference between the applicable forward foreign exchange rates at the reporting date and the contracted foreign exchange rates multiplied by the contracted notional amounts. See the table that follows the financial instrument descriptions for the reported fair values of derivative assets and liabilities.

Long-term investments

Long-term investments included the mutual fund assets the Company held to fund a portion of its deferred compensation liabilities and all of its non-qualified supplemental executive defined contribution obligations (see the defined contribution plans section of Note 14). Fair value and carrying value were the same because the mutual fund assets were recorded at fair value in accordance with the FASB's fair value option guidance. Fair values for the mutual funds were calculated using the published market price per unit at the reporting date multiplied by the number of units held at the reporting date. See the table that follows the financial instrument descriptions for the reported fair value of long-term investments.

Debt obligations

The fair value of debt with original maturities greater than one year comprised the combined present values of scheduled principal and interest payments for each of the various loans, individually discounted at rates equivalent to those which could be obtained by the Company for new debt issues with durations equal to the average life to maturity of each loan. The fair values of the remaining Company debt obligations approximated their carrying values due to the short-term nature of the debt. The Company's fair value measurements for debt fall in level 2 of the fair value hierarchy.

At December 31, 2019 and 2018, the fair values and related carrying values of debt, including current maturities, were as follows (the fair value and carrying value amounts are presented without regard to unamortized debt issuance costs of \$754,000, and \$978,000 as of December 31, 2019 and 2018, respectively):

(In thousands)	December 31	
	2019	2018
Fair value	\$ 226,712	\$ 274,119
Carrying value	222,857	277,058

The following tables present financial assets and liabilities measured on a recurring basis at fair value as of December 31, 2019 and 2018, and the level within the fair value hierarchy in which the fair value measurement falls:

<i>(In thousands)</i>	December 2019	Level 1	Level 2	Level 3
Mutual fund assets	\$ 28,227	\$ 28,227	\$ —	\$ —
Derivative assets:				
Foreign currency contracts	981	—	981	—
Total assets at fair value	<u>\$ 29,208</u>	<u>\$ 28,227</u>	<u>\$ 981</u>	<u>\$ —</u>
Derivative liabilities:				
Foreign currency contracts	\$ 429	\$ —	\$ 429	\$ —
Total liabilities at fair value	<u>\$ 429</u>	<u>\$ —</u>	<u>\$ 429</u>	<u>\$ —</u>
<i>(In thousands)</i>	December 2018	Level 1	Level 2	Level 3
Mutual fund assets	\$ 25,082	\$ 25,082	\$ —	\$ —
Derivative assets:				
Foreign currency contracts	185	—	185	—
Total assets at fair value	<u>\$ 25,267</u>	<u>\$ 25,082</u>	<u>\$ 185</u>	<u>\$ —</u>
Derivative liabilities:				
Foreign currency contracts	\$ 10	\$ —	\$ 10	\$ —
Total liabilities at fair value	<u>\$ 10</u>	<u>\$ —</u>	<u>\$ 10</u>	<u>\$ —</u>

4. Derivative Instruments

The Company is exposed to certain risks relating to its ongoing business operations. The primary risk managed by the use of derivative instruments is foreign currency exchange risk. The Company holds forward foreign currency exchange contracts that are not designated as any type of accounting hedge as defined by U.S. generally accepted accounting principles. The Company uses these contracts to manage its exposure to exchange rate fluctuations on certain Company subsidiary cash, accounts receivable, accounts payable and other obligation balances that are denominated in currencies other than the entities' functional currencies. The forward foreign exchange contracts are recognized on the balance sheet as either an asset or a liability measured at fair value. Gains and losses arising from recording the foreign exchange contracts at fair value are reported in earnings as offsets to the losses and gains reported in earnings arising from the re-measurement of the receivable and payable balances into the applicable functional currencies. At December 31, 2019 and 2018, the Company had open forward foreign currency exchange contracts, all with durations of one to three months, to buy or sell foreign currencies with a U.S. dollar equivalent of \$48,540,368 and \$28,870,081, respectively.

The fair values of the derivative instruments held by the Company on December 31, 2019, and December 31, 2018, are disclosed in Note 3. Derivative instrument gains and losses for the years ended December 31, 2019, 2018 and 2017, were immaterial. For amounts reclassified out of AOCI into earnings for the years ended December 31, 2019, 2018 and 2017, see Note 20.

5. Goodwill and Other Intangible Assets

The changes in the carrying value of goodwill for the years ended December 31, 2019 and 2018, were as follows:

(In thousands)	Surfactants Segment		Polymer Segment		Specialty Products Segment		Total	
	2019	2018	2019	2018	2019	2018	2019	2018
Balance as of January 1								
Goodwill	\$ 20,521	\$ 22,627	\$ 5,417	\$ 5,475	\$ 483	\$ 483	\$ 26,421	\$ 28,585
Accumulated impairment loss	(3,467)	(3,467)	—	—	—	—	(3,467)	(3,467)
Goodwill, net	17,054	19,160	5,417	5,475	483	483	22,954	25,118
Goodwill acquired ⁽¹⁾	3,497	—	—	—	—	—	3,497	—
Goodwill measurement period adjustment	—	—	—	—	—	—	—	—
Foreign currency translation	(354)	(2,106)	(11)	(58)	—	—	(365)	(2,164)
Balance as of December 31								
Goodwill	23,664	20,521	5,406	5,417	483	483	29,553	26,421
Accumulated impairment loss	(3,467)	(3,467)	—	—	—	—	(3,467)	(3,467)
Goodwill, net	\$ 20,197	\$ 17,054	\$ 5,406	\$ 5,417	\$ 483	\$ 483	\$ 26,086	\$ 22,954

(1) See Note 21 for information regarding the goodwill acquired in a business combination.

Company tests its goodwill balances for impairment in the second quarter of each calendar year. The 2019 and 2018 tests indicated no impairment.

The following table presents the components of other intangible assets, all of which have finite lives, as of December 31, 2019 and 2018. The year-over-year changes in gross carrying values mainly resulted from an oilfield demulsifier product line acquisition and the effects of foreign currency translation.

(In thousands)	Gross Carrying Value		Accumulated Amortization	
	December 31		December 31	
	2019	2018	2019	2018
Other Intangible Assets:				
Patents	\$ 6,947	\$ 6,947	\$ 5,091	\$ 4,492
Non-compete agreements	374	\$ 387	242	\$ 173
Trademarks	4,087	3,800	2,561	1,929
Customer lists/relationships ⁽²⁾	14,539	10,750	5,983	4,356
Supply contract	2,040	2,113	1,657	1,189
Know-how ⁽¹⁾⁽²⁾	9,543	7,900	6,644	5,514
Total	\$ 37,530	\$ 31,897	\$ 22,178	\$ 17,653

(1) Know-how includes intellectual property rights covering proprietary information, written formulae, trade secrets or secret processes, inventions and developmental products (whether patentable or not), discoveries, improvements, compositions, manufacturing processes, manuals, specifications and technical data

(2) In 2019, customer lists/relationships and know-how include the acquisition of an oilfield demulsifier product line. See Note 21 for more details.

Aggregate amortization expense for the years ended December 31, 2019, 2018 and 2017, was \$3,399,000, \$3,470,000, and \$3,711,000, respectively. Estimated amortization expense for identifiable intangibles assets for each of the five succeeding fiscal years is as follows:

(In thousands)	
For year ended 12/31/20	\$ 3,522
For year ended 12/31/21	2,207
For year ended 12/31/22	1,563
For year ended 12/31/23	1,563
For year ended 12/31/24	1,362

6. Inventories

The composition of inventories was as follows:

<i>(In thousands)</i>	December 31	
	2019	2018 As Adjusted
Finished products	\$ 139,785	\$ 163,617
Raw materials	63,862	67,911
Total inventories	<u>\$ 203,647</u>	<u>\$ 231,528</u>

Effective January 1, 2019, the Company elected to change its method of accounting for U.S. inventories from the LIFO basis to the FIFO basis. Non-U.S. inventories have historically been maintained on the FIFO basis. Prior period financial statements have been adjusted to reflect what results would have been had the Company always used the FIFO method of inventory valuation for U.S. inventories. See Note 2 for additional details.

7. Debt

Debt comprised the following at December 31, 2019 and 2018:

<i>(In thousands)</i>	Maturity Dates	December 31, 2019	December 31, 2018
Unsecured private placement notes			
3.95% (net of unamortized debt issuance cost of \$316 and \$360 for 2019 and 2018, respectively)	2021-2027	\$ 99,684	\$ 99,640
3.86% (net of unamortized debt issuance cost of \$291 and \$347 for 2019 and 2018, respectively)	2020-2025	85,423	99,653
4.86% (net of unamortized debt issuance cost of \$147 and \$186 for 2019 and 2018, respectively)	2020-2023	36,996	46,243
5.88% (net of unamortized debt issuance cost of \$0 and \$85 for 2019 and 2018, respectively)	2019	—	22,772
Debt of foreign subsidiaries			
Unsecured bank debt, foreign currency	2019	—	7,772
Total debt		\$ 222,103	\$ 276,080
Less current maturities		23,571	37,058
Long-term debt		<u>\$ 198,532</u>	<u>\$ 239,022</u>

The Company's long-term debt financing is currently composed of unsecured private placement notes issued to insurance companies, totaling \$222,857,000 as of December 31, 2019. These notes are denominated in U.S. dollars and have fixed interest rates ranging from 3.86 percent to 4.86 percent. The notes had original maturities of 12 years with mandatory amortization of principal beginning six years after issuance. The Company will be required to make amortization payments on the currently outstanding notes from 2020 to 2027.

The Company has a committed \$350,000,000 multi-currency revolving credit agreement that expires on January 30, 2023. The Company maintains standby letters of credit under its workers' compensation insurance agreements and for other purposes, as needed from time to time, which are issued under the revolving credit agreement. As of December 31, 2019, the Company had outstanding letters of credit of \$4,929,000 and no borrowings under the revolving credit agreement. There was \$345,071,000 available under the revolving credit agreement as of December 31, 2019.

Loans under the credit agreement may be incurred, at the discretion of the Company, with terms to maturity of one to six months. The Company may choose from two interest rate options: (1) LIBOR applicable to each currency plus spreads ranging from 1.25 percent to 1.875 percent, depending on the Company's net leverage ratio, or (2) the prime rate plus 0.25 percent to 0.875 percent, depending on the Company's net leverage ratio. The credit agreement requires the Company to pay a commitment fee ranging from 0.15 percent to 0.325 percent per annum, which also depends on the Company's net leverage ratio. The credit agreement requires the maintenance of certain financial ratios and compliance with certain other covenants that are similar to the Company's existing debt agreements, including net worth, interest coverage and leverage financial covenants and limitations on restricted payments, indebtedness and liens.

On June 12, 2019, the Company prepaid the \$17,100,000 outstanding principal balance of its 5.88 percent Series 2010-A Senior Notes due June 1, 2022 (Notes) and the related make-whole amount of \$1,173,000. The make-whole amount primarily reflected the net present value of the remaining scheduled interest payments on the Notes, calculated in accordance with the applicable note purchase agreement. The prepayment was made with cash on hand. The Company also expensed remaining unamortized debt issuance costs of \$74,000.

The Company's foreign subsidiaries had no unsecured debt at December 31, 2019.

The Company's loan agreements contain provisions, which, among others, require maintenance of certain financial ratios and place limitations on additional debt, investments and payment of dividends. Based on the loan agreement provisions that place limitations on dividend payments, unrestricted retained earnings (i.e., retained earnings available for dividend distribution) were \$283,956,000 and \$190,442,000 at December 31, 2019 and 2018, respectively.

Debt at December 31, 2019, matures as follows: \$23,571,000 in 2020; \$37,858,000 in 2021; \$37,858,000 in 2022; \$37,857,000 in 2023; \$28,572,000 in 2024 and \$57,141,000 after 2024. Debt maturing in 2020 includes \$23,571,000 of scheduled repayments under long-term debt agreements. Although the Company's foreign subsidiaries currently have no short-term working capital loans, these type of loans routinely exist. These short-term loan agreements could be supplemented, if necessary, by the Company's \$350,000,000 revolving credit agreement entered into on January 30, 2018.

Net interest expense for the years ended December 31, 2019, 2018 and 2017, comprised the following:

<i>(In thousands)</i>	2019	2018	2017
Interest expense	\$ 12,744	\$ 13,360	\$ 14,428
Interest income	(5,717)	(1,829)	(2,075)
	<u>7,027</u>	<u>11,531</u>	<u>12,353</u>
Capitalized interest	(1,095)	(760)	(909)
Interest expense, net	<u>\$ 5,932</u>	<u>\$ 10,771</u>	<u>\$ 11,444</u>

8. Leases

The Company adopted ASU No. 2016-02, *Leases (Topic 842)*, on January 1, 2019. This new accounting standard requires a dual approach for lessee accounting whereby a lessee accounts for lease arrangements as either finance leases or operating leases. The lease classification affects the pattern of expense recognition in the income statement. The most significant impact of adopting ASU No. 2016-02, *Leases (Topic 842)* is that a lessee is now required to recognize a "right-of-use" (ROU) asset and corresponding lease liability for operating lease agreements. ROU assets represent a right to use an underlying asset for the lease term and lease liabilities represent an obligation to make lease payments arising from the lease. Operating leases are expensed on a straight-line basis over the life of the lease beginning on the date the Company takes possession of the property.

The Company elected to apply the new lease standard at adoption as allowed under ASU No. 2018-11 and, as a result, the Company did not retrospectively adjust prior periods presented. The Company elected the practical expedient to not separate non-lease components from lease components for all asset classes and the practical expedient which permits a Company to not reassess prior conclusions about lease identification, lease classifications and initial direct costs. The Company did not elect the use-of-hindsight or the practical expedient pertaining to land easements, the latter not being applicable to the Company. In addition, the Company made an accounting policy election to keep leases with an initial term of 12 months or less off the balance sheet. Upon adoption of ASC 842, the Company recognized \$42,400,000 of ROU assets and related operating lease liabilities on its balance sheet. There was no cumulative catch-up adjustment made to beginning retained earnings.

Significant judgments used by the Company to determine whether a contract is or contains a lease include: (i) determining whether any explicitly or implicitly identified assets have been identified in the contract and (ii) determining whether the Company obtains substantially all of the economic benefits from the use of an underlying asset and directs how and for what purpose the asset is used during the term of the contract.

The Company's operating leases are primarily comprised of railcars, real estate, storage tanks, autos, trailers and manufacturing/office equipment. Railcars and real estate comprise approximately 50 percent and 37 percent, respectively, of the Company's consolidated ROU asset balance. With the exception of real estate, typical lease terms range from one to ten years. Real estate lease terms typically range from one to fifty years. The Company's two principal real estate leases relate to land leases in the Philippines and Singapore. As of December 31, 2019, the Company had additional leases, primarily for equipment and railcars, that have not commenced of approximately \$537,000. These leases will commence in the first half of 2020 with lease terms of five years.

Variability associated with the Company's lease obligations typically relates to: (i) additional charges based on usage (i.e., railcar mileage in excess of a specified amount) and, (ii) periodic increases associated with Consumer Price Index (CPI) changes (i.e., land rental payments). Appropriate CPI at the inception of a lease is reflected in the Company's lease liability balances whereas variability based on usage is typically excluded from lease liability amounts. Some of the Company's leases include options to extend the lease term but these are typically not recognized as part of the ROU asset or lease liability at inception unless it is reasonably certain the renewal option will be exercised. Determining whether a renewal option is reasonably certain to be exercised requires judgment based on the existing facts and circumstances as well as expectations about future business needs. Renewal options are typically re-assessed within one year or less prior to lease termination when the Company is able to more accurately forecast future business needs. Some of the Company's lease contracts include options to terminate leases early but these are typically not considered unless it is reasonably certain the early termination option will be exercised. The Company's leases do not typically carry any residual value guarantees and typically payment is not considered probable when such guarantees are included in the contract.

Initial implementation of ASU No. 2016-02, *Leases (Topic 842)* did not impact compliance with any of the Company's debt covenants, nor is it expected to in the future. The majority of the Company's debt agreements contain language that excludes the impact of any new GAAP accounting change.

As most of the Company's leases do not provide an implicit borrowing rate, the Company uses its incremental borrowing rate (IBR) based on the information available at the commencement date in determining the present value of lease payments. IBRs were specifically determined for the United States, the Philippines, Singapore, Brazil and China, typically for five-year increments. The U.S. IBR was used for all other countries as the leases in these countries are not material. The total value of leases that reside in the five countries identified above represents approximately 97 percent of the Company's consolidated ROU asset balance.

<i>(In thousands)</i>	Year ended December 31, 2019
Lease Cost	
Operating lease cost	\$ 10,908
Short-term lease cost	4,420
Variable lease cost	1,045
Total lease cost	<u>\$ 16,373</u>
Other Information	
Cash paid for amounts included in the measurement of lease liabilities:	
Operating cash flow from operating leases	\$ 10,954
Right-of-use assets obtained in exchange for new operating lease liabilities	5,694

<i>(In thousands)</i>	
Undiscounted Cash Flows:	
2020	\$ 10,086
2021	7,589
2022	6,395
2023	5,132
2024	3,014
Subsequent to 2024	16,235
Total Undiscounted Cash Flows	<u>\$ 48,451</u>
Less: Imputed interest	(10,052)
Present value	<u>\$ 38,399</u>
Current operating lease liabilities (1)	8,745
Non-current operating lease liabilities	29,654
Total lease liabilities	<u>\$ 38,399</u>

(1) This item is included in Accrued liabilities line on the Company's Consolidated Balance Sheet.

Weighted-average remaining lease term-operating leases	9 Years
Weighted-average discount rate-operating leases	4.2%

As required in transition, the table below summarizes the Company's future minimum lease payments at December 31, 2018 under ASC 840.

<i>(In thousands)</i>	
Year	
2019	\$ 9,740
2020	8,294
2021	6,027
2022	5,242
2023	4,101
Subsequent to 2023	16,593
Total minimum future rental payments	\$ 49,997

9. Other, Net

Other, net in the Consolidated Statements of Income included the following for the years ended December 31, 2019, 2018 and 2017:

<i>(In thousands)</i>	2019	2018	2017
Foreign exchange gains (losses)	\$ 123	\$ 1,902	\$ (646)
Investment income	968	1,554	989
Realized and unrealized gains (losses) on investments	3,955	(2,966)	4,178
Net periodic benefit cost	(351)	(1,215)	(1,035)
Gain on sale of asset	570	—	—
Other retirement obligation	(694)	—	—
Other, net	\$ 4,571	\$ (725)	\$ 3,486

10. Income Taxes

The provisions for taxes on income and the related income before taxes for the years ended December 31, 2019, 2018 and 2017, were as follows:

<i>(In thousands)</i>	2019	2018 As Adjusted	2017 As Adjusted
Taxes on Income			
Federal			
Current	\$ 9,998	\$ (296)	\$ 32,299
Deferred (1)	(2,879)	8,876	(3,690)
State			
Current	2,248	2,095	1,764
Deferred (1)	(1,783)	1,821	587
Foreign			
Current	15,568	14,510	13,077
Deferred	(354)	(342)	2,102
Total (1)	\$ 22,798	\$ 26,664	\$ 46,139
Income before Taxes			
Domestic (1)	\$ 63,399	\$ 86,368	\$ 80,307
Foreign	62,500	51,401	66,575
Total (1)	\$ 125,899	\$ 137,769	\$ 146,882

- (1) The 2018 and 2017 amounts for the noted line items have been retrospectively changed from the amounts originally reported as a result of the Company's first quarter 2019 change in method of accounting for U.S. inventory valuation from LIFO to FIFO.

The variations between the effective and statutory U.S. federal income tax rates are summarized as follows:

<i>(In thousands)</i>	2019 Amount	%	2018 Amount As Adjusted	%	2017 Amount As Adjusted	%
Federal income tax provision at statutory tax rate (1)	\$ 26,439	21.0	\$ 28,931	21.0	\$ 51,409	35.0
State income tax provision, less applicable federal tax benefit (1)(2)	367	0.3	3,094	2.2	1,528	1.0
Foreign income taxed at different rates	623	0.5	864	0.6	(8,075)	(5.5)
U.S. taxation of foreign earnings (3)	2,349	1.9	2,348	1.7	(1,054)	(0.7)
Unrecognized tax benefits	2,954	2.3	(460)	(0.3)	(47)	—
Domestic production activities deduction	—	—	—	—	(1,339)	(0.9)
Nontaxable foreign interest income	—	—	(1,179)	(0.9)	(2,073)	(1.4)
U.S. tax reform, net impact (4)	—	—	(375)	(0.3)	10,323	7.0
Change in accounting methods (5)	—	—	(3,383)	(2.5)	(893)	(0.6)
Prior years return to provision true-up (6)	(1,740)	(1.4)	(508)	(0.4)	(266)	(0.2)
Stock based compensation, excess tax benefits	(1,633)	(1.3)	(1,648)	(1.2)	(2,254)	(1.5)
U.S. tax credits (7)	(6,412)	(5.1)	(1,324)	(1.0)	(1,204)	(0.8)
Non-deductible expenses and other items, net	(149)	(0.1)	304	0.5	84	0.0
Total income tax provision (1)	<u>\$ 22,798</u>	<u>18.1</u>	<u>\$ 26,664</u>	<u>19.4</u>	<u>\$ 46,139</u>	<u>31.4</u>

- (1) The 2018 and 2017 amounts for the noted line items have been retrospectively changed from the amounts originally reported as a result of the Company's first quarter 2019 change in method of accounting for U.S. inventory valuation from LIFO to FIFO.
- (2) Includes incremental state research credits for the tax years 2015 - 2019 that were identified as part of a research and development tax credit study.
- (3) Includes cost of global intangible low-taxed income (GILTI) in 2019 and 2018 plus other taxes paid or withheld on cash repatriated from foreign countries in 2019 and 2018.
- (4) Does not include state tax impacts, which are included in state income tax provision, less applicable federal tax benefit.
- (5) For 2018, amount represents the federal tax rate change due to certain accounting methods that were adopted on the 2017 federal income tax return. For 2017, amount represents an accounting method change for depreciation.
- (6) Certain 2018 and 2017 amounts have been reclassified to conform to the 2019 presentation.
- (7) Includes incremental federal research credits for 2015 - 2019 that were identified as part of a research and development tax credit study. Also includes a federal tax rate change due to the classification of certain 2016 and 2017 depreciable fixed assets as deductible research costs.

At December 31, 2019 and 2018, the tax effects of significant temporary differences representing deferred tax assets and liabilities were as follows:

<i>(In thousands)</i>	2019	<i>2018 As Adjusted</i>
Deferred Tax Liabilities:		
Depreciation	\$ (59,574)	\$ (57,665)
Unrealized foreign exchange loss	(1,479)	(980)
Amortization of intangibles	(835)	(1,016)
Inventories (1)	(5,855)	(8,429)
Other	(307)	(301)
	<u>\$ (68,050)</u>	<u>\$ (68,391)</u>
Deferred Tax Assets:		
Pensions	\$ 5,855	\$ 7,971
Deferred revenue	161	208
Other accruals and reserves	12,171	13,123
Legal and environmental accruals	7,758	7,143
Deferred compensation	15,816	14,214
Bad debt and rebate reserves	2,604	2,916
Non-U.S. subsidiaries net operating loss carryforwards	3,966	3,869
Tax credit carryforwards	5,200	2,141
	<u>\$ 53,531</u>	<u>\$ 51,585</u>
Valuation Allowance	<u>\$ (2,994)</u>	<u>\$ (3,701)</u>
Net Deferred Tax Liabilities	<u>\$ (17,513)</u>	<u>\$ (20,507)</u>
Reconciliation to Consolidated Balance Sheet:		
Non-current deferred tax assets (in other non-current assets) (1)	5,878	4,454
Non-current deferred tax liabilities	(23,391)	(24,961)
Net Deferred Tax (Liabilities) Assets	<u>\$ (17,513)</u>	<u>\$ (20,507)</u>

(1) The 2018 amounts for the noted line items have been retrospectively changed from the amounts originally reported as a result of the Company's first quarter 2019 change in method of accounting for U.S. inventory valuation from LIFO to FIFO.

Earnings generated by a foreign subsidiary are presumed to ultimately be transferred to the parent company. Therefore, the establishment of deferred taxes may be required with respect to the excess of the investment value for financial reporting over the tax basis of investments in those foreign subsidiaries (also referred to as book-over-tax outside basis differences). A company may overcome this presumption and forgo recording a deferred tax liability in its financial statements if it can assert that management has the intent and ability to indefinitely reinvest the earnings of its foreign subsidiaries. Pursuant to the 2017 U.S. Tax Cuts and Jobs Act (Tax Act), the Company's foreign earnings have been subject to U.S. federal taxes. The Company now has the ability to repatriate to the U.S. parent the cash associated with these foreign earnings with little additional U.S. federal taxes. This cash may, however, be subject to foreign income and/or local country taxes if repatriated to the United States. In addition, repatriation of some foreign cash balances may be further restricted by local laws. As such, the Company intends to limit its distributions to earnings previously taxed in the U.S. or earnings that would qualify for the 100 percent dividends received deduction provided for in the Tax Act as long as such distributions would not result in any significant foreign taxes. In 2019, the Company repatriated approximately \$57,000,000 to the U.S. parent, and recorded \$500,000 of additional income tax expense in 2019 as a result of the repatriation. The effect of the adjustment on the 2019 effective tax rate was an increase of approximately 0.4 percent. During 2019, the Company reevaluated its indefinite reinvestment assertion with regards to certain accumulated foreign earnings. The Company no longer considers the undistributed earnings of its Canadian subsidiary to be indefinitely reinvested in foreign operations to the extent of the subsidiary's paid-up capital (PUC) as determined under Canadian tax law which is used to determine tax-free distributions for Canadian tax purposes. The Company also no longer considers the undistributed earnings of its Dutch subsidiary, one of its Singapore subsidiaries, and one of its Chinese subsidiaries to be indefinitely reinvested in foreign operations. A distribution from any of these subsidiaries should not result in any significant foreign taxes to the extent of the distribution limitations discussed above and therefore, the Company has not recognized a deferred tax liability for these undistributed earnings as of December 31, 2019. The Company considers the undistributed earnings of its remaining foreign subsidiaries to be indefinitely reinvested in foreign operations. At this time, the determination of deferred tax liabilities on this amount is not practicable.

The Company has non-U.S. tax loss carryforwards of \$12,031,000 (pretax) as of December 31, 2019, and \$14,901,000 as of December 31, 2018, that are available for use by the Company between 2020 and 2038. The Company has tax credit carryforwards of

\$5,200,000 as of December 31, 2019, and \$2,141,000 as of December 31, 2018 that are available for use by the Company between 2020 and 2034. The Company has non-U.S. capital loss carryforwards of \$621,000 as of December 31, 2019, and \$0 as of December 31, 2018. The Company's capital loss carryforwards do not expire.

At December 31, 2019, the Company had valuation allowances of \$2,994,000, which were attributable to deferred tax assets in Canada, China, India, the Philippines and Singapore. The realization of deferred tax assets is dependent on the generation of sufficient taxable income in the appropriate tax jurisdictions. The Company believes that it is more likely than not that the related deferred tax assets will not be realized.

As of December 31, 2019, 2018 and 2017, unrecognized tax benefits totaled \$3,273,000, \$168,000 and \$1,927,000, respectively. The amount of unrecognized tax benefits that, if recognized, would favorably affect the Company's effective income tax rate in any future periods, net of the federal benefit on state issues, was approximately \$3,105,000, \$162,000 and \$1,917,000 at December 31, 2019, 2018 and 2017, respectively. The Company does not believe that the amount of unrecognized tax benefits related to its current uncertain tax positions will change significantly over the next 12 months.

The Company recognizes accrued interest and penalties related to unrecognized tax benefits as income tax expense. In 2019, the Company recognized net interest and penalty expense of \$19,000 compared to \$26,000 of net interest and penalty income in 2018 and \$3,000 of net interest and penalty expense in 2017. At December 31, 2019 the liability for interest and penalties was \$49,000 compared to \$30,000 at December 31, 2018.

The Company files income tax returns in the U.S. federal jurisdiction and various states and foreign jurisdictions. The Company is not subject to U.S. federal income tax examinations by tax authorities for years before 2015. Some foreign jurisdictions and various U.S. states jurisdictions may be subject to examination back to 2013.

During 2016, the Internal Revenue Service started its audit of the 2011 and 2012 tax years. As of December 31, 2019, these audits were officially settled. During 2018, the Company effectively settled these audits and reversed an unrecognized tax benefit of \$1,526,000 that was offset with a corresponding reversal of \$1,326,000 related to an income tax refund receivable for which the Company is no longer entitled to receive.

Below are reconciliations of the January 1 and December 31 balances of unrecognized tax benefits for 2019, 2018 and 2017:

<i>(In thousands)</i>	2019	2018	2017
Unrecognized tax benefits, opening balance	\$ 168	\$ 1,927	\$ 1,931
Gross increases – tax positions in prior period	2,760	29	—
Gross increases – current period tax positions	355	26	20
Foreign currency translation	7	1	69
Settlement	—	(1,526)	—
Lapse of statute of limitations	(17)	(289)	(93)
Unrecognized tax benefits, ending balance	<u>\$ 3,273</u>	<u>\$ 168</u>	<u>\$ 1,927</u>

11. Stockholders' Equity

At December 31, 2019 and 2018, treasury stock consisted of 3,979,735 shares and 3,803,043 shares of common stock, respectively. During 2019, 144,457 shares of Company common stock were purchased in the open market. In addition, 40,119 shares were received to settle employees' minimum statutory withholding taxes related to performance stock awards, exercised SARs and deferred compensation distributions. Also, 7,884 shares of treasury stock were distributed to participants under the Company's deferred compensation plan.

12. Stock-based Compensation

On December 31, 2019, the Company had outstanding stock options, stock awards and SARs awarded under its 2011 Incentive Compensation Plan (2011 Plan). Stock options, stock awards and SARs are currently granted to Company executives and other key employees. The 2011 Plan authorized the award of 2,600,000 shares of the Company's common stock for stock options, SARs and stock awards. At December 31, 2019, there were 1,032,406 shares available for grant under the 2011 Plan.

Compensation expense recorded in the consolidated statements of income for all plans was \$8,872,000, \$6,837,000, and \$7,151,000 for the years ended December 31, 2019, 2018 and 2017, respectively. The increase in stock-based compensation in 2019 versus 2018 was primarily due to the increase in compensation expenses related to SARs. The \$28.44 increase in the market value of Company common stock from \$74.00 at December 31, 2018 to \$102.44 at December 31, 2019 caused the fair value of SARs to

increase, resulting in an increase of the Company's SARs liability. Partially offsetting the increase caused by SARs was the decline in compensation expenses related to performance awards. Management assessment that the profitability performance targets for certain grants would not be achieved led to the lowering of compensation expenses for performance awards.

The total income tax benefit recognized in the income statement for share-based compensation arrangements was \$1,501,000, \$1,849,000, and \$2,980,124 for the years ended December 31, 2019, 2018 and 2017, respectively.

Stock Options

Under all plans, stock option awards are granted with an exercise price equal to the market price of the Company's stock at the date of grant. The market price is defined and calculated as the average of the opening and closing prices for Company common stock on the grant date as reported in the New York Stock Exchange – Composite Transactions. Stock option awards granted prior to 2017 cliff vest after two years. Stock options granted in 2017, 2018 and 2019 have a three-year graded vesting feature, with one-third of the awards vesting each year. The Company has elected the straight-line method of expense attribution for the stock options with graded vesting feature. These options have 8- to 10-year contractual terms. The fair value of each option award was estimated on the date of grant using the Black-Scholes option valuation model incorporating the weighted-average assumptions noted in the following table. Expected volatility is based on the historical volatility of the Company's stock. The Company also uses historical data to estimate the expected term of options granted. The risk-free rate is the U.S. Treasury note rate that corresponds to the expected option term at the date of grant. The following are the weighted-average assumptions used to calculate the grant-date fair values of stock option awards granted in the years ended December 31, 2019, 2018 and 2017:

	For the Years Ended December 31		
	2019	2018	2017
Expected dividend yield	1.32%	1.34%	1.39%
Expected volatility	26.98%	27.41%	30.01%
Expected term	7.3 years	7.3 years	7.2 years
Risk-free interest rate	2.53%	2.88%	2.22%

A summary of stock option activity for the year ended December 31, 2019 is presented below:

	Shares	Weighted-Average Exercise Price	Weighted-Average Remaining Contractual Term	Aggregate Intrinsic Value (\$000)
Options				
Outstanding at January 1, 2019	361,543	\$ 58.83		
Granted	74,262	92.09		
Exercised	(59,799)	50.78		
Forfeited	(15,184)	79.12		
Outstanding at December 31, 2019	360,822	66.15	6.62	\$ 13,093
Vested or expected to vest at December 31, 2019	350,805	65.69	6.58	12,891
Exercisable at December 31, 2019	270,871	60.09	6.00	11,470

The weighted-average grant-date fair values of options awarded during the years ended December 31, 2019, 2018 and 2017, were \$26.49, \$22.13, and \$24.49, respectively. The total intrinsic values of options exercised during the years ended December 31, 2019, 2018, and 2017 were \$2,518,000, \$3,879,000, and \$5,232,000, respectively.

As of December 31, 2019, the total unrecognized compensation cost for unvested stock options was \$1,850,000. That cost is expected to be recognized over a weighted-average period of 1.7 years.

Cash received from stock option exercises under the Company's stock option plans for the years ended December 31, 2019, 2018, and 2017 was \$3,037,000, \$4,163,000, and \$3,370,000, respectively. The actual tax benefit realized for the tax deductions from stock option exercises totaled \$348,000, \$548,000, and \$1,455,000 for the years ended December 31, 2019, 2018 and 2017, respectively.

Stock Awards

In 2017, 2018, and 2019, the Company granted stock awards under the 2011 Plan. Most Company stock awards are granted in the form of performance awards. The performance stock awards vest only upon the Company's achievement of certain Board of Directors approved levels of financial performance by the end of specified measurement periods. The number of Company shares of common stock ultimately distributed, if any, is contingent upon the Company's actual financial performance attained by the end of the measurement period relative to the Board of Directors approved targets. The fair value of performance stock awards equals the grant-date market price of the Company's common stock, discounted for the estimated amount of dividends that would not be received during the measurement period. Compensation expense is recorded each reporting period based on the probable number of awards that will ultimately vest given the projected level of financial performance. If at the end of the measurement period the performance objectives are not met, no compensation cost is recognized and any compensation expense recorded in prior periods is reversed. Periodically, the Company also grants stock awards that have no performance conditions associated with their vesting. These stock awards vest based on the service time established for the given grant.

A summary of stock award activity for the year ended December 31, 2019, is presented below:

	Shares	Weighted-Average Grant Date Fair Value
Stock Awards		
Unvested at January 1, 2019	85,370	\$ 73.65
Granted	45,327	89.12
Vested	(28,595)	77.90
Forfeited	(14,768)	70.76
Unvested at December 31, 2019	<u>87,334</u>	<u>80.78</u>

The weighted-average grant-date fair values of stock awards granted during the years ended December 31, 2019, 2018 and 2017, were \$89.12, \$72.06, and \$75.94, respectively. As of December 31, 2019, under the current Company assumption as to the number of stock award shares that will vest at the measurement periods ended December 31, 2020 and 2021, there was \$3,618,000 of unrecognized compensation cost for unvested stock awards. That cost is expected to be recognized over a period of 1.7 years.

SARs

At December 31, 2019, the Company had both cash-settled and Company stock-settled SARs outstanding. SARs granted prior to 2015 are cash-settled, and SARs granted after 2014 are stock-settled. SARs granted prior to 2017 cliff vest after two years. SARs granted in 2017, 2018 and 2019 have a three-year graded vesting feature, with one-third of the awards vesting each year. The Company has elected the straight-line method of expense attribution for the SARs with graded vesting feature. All SARs expire ten years from the grant date. Upon the exercise of a SARs award, a participant receives in cash (for cash-settled SARs) or Company common stock (for stock-settled SARs) an amount that equals the excess of the fair market value of a share of Company common stock at the date of exercise over the fair market value of a share of Company common stock at the date of grant (the exercise price). Cash-settled SARs are accounted for as liabilities that must be re-measured at fair value at the end of every reporting period until settlement. Compensation expense for each reporting period is based on the period-to-period change (or portion of the change, depending on the proportion of the vesting period that has been completed at the reporting date) in the fair value of the SARs. Compensation expense for stock-settled SARs is based on the grant-date value of the awards allocated over the proportion of the vesting period that has been completed at the reporting date. Because stock-settled SARs are considered equity instruments, they are not re-measured at fair value at the end of each reporting period.

The following is a summary of SARs activity for the year ended December 31, 2019:

SARs	Shares	Weighted-Average Exercise Price	Weighted-Average Remaining Contractual Term	Aggregate Intrinsic Value (\$000)
Outstanding at January 1, 2019	639,146	\$ 60.64		
Granted	166,518	92.02		
Exercised	(104,367)	51.13		
Forfeited	(45,880)	79.12		
Outstanding at December 31, 2019	<u>655,417</u>	<u>68.83</u>	<u>6.89</u>	<u>\$ 22,048</u>

The weighted-average grant-date fair values of SARs granted during the years 2019, 2018 and 2017 were \$26.43, \$22.19, and \$24.90, respectively. The fair value for each SARs award was estimated using the Black-Scholes valuation model incorporating the same assumptions as noted for stock options.

As of December 31, 2019 and 2018, the liability for cash-settled SARs recorded on the consolidated balance sheet (non-current liabilities) was \$4,509,000 and \$3,647,000, respectively. At December 31, 2019, there was \$4,058,000 of total unrecognized compensation cost related to all unvested SARs. That cost is to be recognized over a weighted-average period of 1.7 years.

In general, it is the Company's policy to issue new shares of its common stock upon the exercise of stock options and stock-settled SARs or the vesting of stock awards.

13. Deferred Compensation

The Company sponsors deferred compensation plans that allow management employees to defer receipt of their annual bonuses and outside directors to defer receipt of their fees until retirement, departure from the Company or as otherwise elected. Compensation expense and the related deferred compensation obligation are recorded when the underlying compensation is earned. Over time, the deferred obligation may increase or decrease based on the performance results of investment options chosen by the plan participants. The investment options include Company common stock and a limited selection of mutual funds. The Company maintains sufficient shares of treasury stock to cover the equivalent number of shares that result from participants elections of the Company common stock investment option. As a result, the Company periodically purchases its common shares in the open market or in private transactions. The Company purchases shares of the applicable mutual funds to fund the portion of its deferred compensation liabilities tied to such investments.

Some plan distributions may be made in cash or Company common stock at the option of the participant. Other plan distributions can only be made in Company common stock. For deferred compensation obligations that may be settled in cash or Company common stock at the option of the participant, the Company must record appreciation in the market values of the investment choices made by participants as additional compensation expense. Conversely, declines in the market values of the investment choices reduce compensation expense. Increases and decreases of compensation expense that result from fluctuations in the underlying investments are recorded as part of operating expenses in the consolidated statements of income. The obligations that must be settled only in Company common stock are treated as equity instruments; therefore, fluctuations in the market price of the underlying Company stock do not affect earnings.

The additional compensation expense or income resulting from the changes in the market values and earnings of the selected investment options was \$15,140,000 expense in 2019, \$2,329,000 income in 2018 and \$4,857,000 expense in 2017. The main factor in the increase of the 2019 deferred compensation expense versus 2018 deferred compensation income was a \$28.44 per share increase in the market price of the Company's common stock in 2019 versus a \$4.97 per share decline in the price of stock in 2018. The Company's deferred compensation liability was \$59,031,000 and \$50,451,000 at December 31, 2019 and 2018, respectively.

14. Postretirement Benefit Plans

Defined Benefit Plans

The Company sponsors various funded qualified and unfunded non-qualified defined benefit pension plans, the most significant of which cover employees in the U.S. and U.K. locations. The various U.S. defined benefit pension plans were amended during the years 2005-2008 to freeze the plans by stopping the accrual of service benefits. The U.K. defined benefit pension plan was frozen in 2006. Benefits earned through the freeze dates are available to participants when they retire, in accordance with the terms of the plans. The Company established defined contribution plans to replace the frozen defined benefit pension plans.

Obligations and Funded Status at December 31

<i>(In thousands)</i>	United States		United Kingdom	
	2019	2018	2019	2018
Change in benefit obligation				
Benefit obligation at beginning of year	\$ 158,594	\$ 171,358	\$ 20,006	\$ 24,048
Interest cost	6,616	6,194	554	565
Actuarial (gain) loss	19,251	(11,494)	1,045	(2,129)
Benefits paid	(7,962)	(7,464)	(592)	(1,255)
Foreign exchange impact	—	—	837	(1,223)
Benefit obligation at end of year	\$ 176,499	\$ 158,594	\$ 21,850	\$ 20,006

<i>(In thousands)</i>	United States		United Kingdom	
	2019	2018	2019	2018
Change in plan assets				
Fair value of plan assets at beginning of year	\$ 134,198	\$ 147,908	\$ 20,576	\$ 24,168
Actual return (loss) on plan assets	33,875	(11,558)	2,963	(1,583)
Employer contributions	312	5,312	476	494
Benefits paid	(7,962)	(7,464)	(592)	(1,254)
Foreign exchange impact	—	—	934	(1,249)
Fair value of plan assets at end of year	\$ 160,423	\$ 134,198	\$ 24,357	\$ 20,576
Over (Under) funded status at end of year	\$ (16,076)	\$ (24,396)	\$ 2,507	\$ 570

The amounts recognized in the consolidated balance sheets at December 31 consisted of:

<i>(In thousands)</i>	United States		United Kingdom	
	2019	2018	2019	2018
Non-current asset	\$ 1,479	\$ —	\$ 2,507	\$ 570
Current liability	(301)	(302)	—	—
Non-current liability	(17,254)	(24,094)	—	—
Net amount recognized	\$ (16,076)	\$ (24,396)	\$ 2,507	\$ 570

The amounts recognized in accumulated other comprehensive income at December 31 consisted of:

<i>(In thousands)</i>	United States		United Kingdom	
	2019	2018	2019	2018
Net actuarial loss	\$ 37,671	\$ 45,334	\$ 4,460	\$ 5,849

Below is information for pension plans with projected benefit obligations in excess of plan assets at December 31:

<i>(In thousands)</i>	United States		United Kingdom	
	2019	2018	2019	2018
Projected benefit obligation	\$ 141,839	\$ 158,594	\$ —	\$ —
Accumulated benefit obligation	141,839	158,594	—	—
Fair value of plan assets	124,284	134,198	—	—

Components of Net Periodic Benefit Cost and Other Amounts Recognized in Other Comprehensive Income

Net periodic benefit costs for the years ended December 31, 2019, 2018 and 2017, were as follows:

<i>(In thousands)</i>	United States			United Kingdom		
	2019	2018	2017	2019	2018	2017
Interest cost	\$ 6,616	\$ 6,194	\$ 6,651	\$ 554	\$ 565	\$ 592
Expected return on plan assets	(9,450)	(9,284)	(9,288)	(787)	(885)	(797)
Amortization of net actuarial loss	2,490	3,814	3,085	244	219	382
Net periodic benefit cost	\$ (344)	\$ 724	\$ 448	\$ 11	\$ (101)	\$ 177

Other changes in plan assets and benefit obligations recognized in other comprehensive income for the years ended December 31, 2019, 2018 and 2017, were as follows:

<i>(In thousands)</i>	United States			United Kingdom		
	2019	2018	2017	2019	2018	2017
Net actuarial (gain) loss	\$ (5,174)	\$ 9,348	\$ 2,864	\$ (1,144)	\$ 325	\$ (1,318)
Amortization of net actuarial loss	(2,490)	(3,814)	(3,085)	(244)	(219)	(382)
Total recognized in other comprehensive income	\$ (7,664)	\$ 5,534	\$ (221)	\$ (1,388)	\$ 106	\$ (1,700)
Total recognized in net periodic benefit cost and other comprehensive income	\$ (8,008)	\$ 6,258	\$ 227	\$ (1,377)	\$ 5	\$ (1,523)

The estimated amounts that will be reclassified from accumulated other comprehensive income into net periodic benefit cost in 2020 are as follows:

<i>(In thousands)</i>	United States	United Kingdom
Net actuarial loss	\$ 4,210	\$ 81

Estimated Future Benefit Payments

<i>(In thousands)</i>	United States	United Kingdom
2020	\$ 8,228	\$ 507
2021	8,701	530
2022	9,198	575
2023	9,603	616
2024	9,908	653
2025-2029	51,412	3,938

Assumptions

The weighted-average assumptions used to determine benefit obligations at December 31 were as follows:

	United States		United Kingdom	
	2019	2018	2019	2018
Discount rate	3.30%	4.30%	2.10%	2.80%

The weighted-average assumptions used to determine net periodic benefit costs for years ended December 31 were as follows:

	United States			United Kingdom		
	2019	2018	2017	2019	2018	2017
Discount rate	4.30%	3.67%	4.17%	2.80%	2.40%	2.60%
Expected long-term return on plan assets	6.75%	6.75%	7.00%	3.82%	3.71%	3.77%

In addition to the above assumptions, the Company uses a market-related value of assets approach to calculate the expected return on plan assets component of U.S. net periodic benefit cost. The market-related value equals the fair value of plan assets with five-year smoothing of asset gains or losses. Asset gains are subtracted or losses added in the following way: 80 percent of the prior

year's gain or loss; 60 percent of the second preceding year's gain or loss; 40 percent of the third preceding year's gain or loss; and 20 percent of the fourth preceding year's gain or loss. Gains or losses for the year are calculated as the difference between the expected fair value of assets and the actual fair value of assets.

Investment Strategies and Policies

U.S. Plans

Plan assets are predominantly invested using a combination of active and passive investment strategies. An investment management firm hires and monitors underlying investment management firms for each asset category. Equity managers within each category cover a range of investment styles and approaches, including both active and passive, and are combined in a way that controls for capitalization, style biases, and country exposure versus benchmark indexes. While active equity managers focus primarily on stock selection to improve returns, fixed income managers seek to reduce the volatility of the plan's funded status by matching the duration with the plan's liability while seeking to improve returns through security selection, sector allocation and yield curve management. Real estate exposure is now categorized within mid cap equity.

Risk is diversified among multiple asset categories, managers, styles, and securities. The investment management firm recommends asset allocations based on the time horizon available for investment, funded status, the nature of the plan cash flows and liabilities and other factors. The asset allocation targets are approved by the Company's Plan Committee.

Allowable investment categories include:

Equities: Common stocks of large, medium, and small companies (company stock), including both U.S. and non-U.S. based companies. The long-term target allocation for equities, excluding Company stock, is approximately 45 percent.

Fixed Income (Debt): Bonds or notes issued or guaranteed by the U.S. government, and to a lesser extent, by non-U.S. governments, or by their agencies or branches, mortgage-backed securities, including collateralized mortgage obligations, corporate bonds, municipal bonds and dollar-denominated debt securities issued in the U.S. by non-U.S. banks and corporations. A small percentage of the fixed income assets may be in debt securities that are below investment grade. The target allocation for fixed income is 38 percent. The fixed income portfolio has a duration similar to the plan's liability stream and is designated to perform consistent with the movement of the plan's liabilities.

Real Estate: Public real estate funds using office, apartment, industrial, retail and other property types. In prior years Real Estate investments were reflected as a separate line item within the Mutual Funds category. Effective 2017, the majority of Real Estate assets have been removed from this category and are currently being captured within the Equities assets category. This change was consistent with the Global Industry Classification Standard (GICS) to better reflect the equity security features of Real Estate Investment Trusts (REITs).

Employer Securities: The retirement plans also hold shares of the Company's common stock, which are purchased or sold by the trustee from time to time, as directed by the Plan Committee. At the direction of the Plan Committee, the plans sold 32,299 shares of the Company's common stock to the Company's ESOP trust on February 21, 2019. In 2018, the plans sold 43,930 shares to the Company's ESOP trust on February 21, 2018, 23,471 shares to the Company on March 9, 2018 and 16,833 shares to the Company on August 8, 2018. The target allocation for employer securities is 15 percent of plan assets.

In addition to these primary investment types, excess cash may be invested in futures in order to efficiently achieve more fully invested portfolio positions. Otherwise, a small number of investment managers may make limited use of derivatives, including futures contracts, options on futures and interest rate swaps in place of direct investment in securities to efficiently achieve equivalent market positions. Derivatives are not used to leverage portfolios.

The target allocation for cash is two percent of plan assets.

U.K. Plan

The objective of the U.K. defined benefit pension fund investment strategy is to maximize the long-term rate of return on plan assets within a medium level of risk in order to minimize the cost of providing pension benefits. To that end, the plan assets are invested in an actively managed pooled fund of funds that diversifies its holdings among equity securities, debt securities, property and cash. Essentially, the plan is to hold equity instruments to back the benefits of participants yet to retire and bonds and cash to back current pensioners. Although there are no formal target allocations for the plan assets, the trustee overall strategy is to achieve a mix of investments for long-term growth and near-term benefit payments with a wide diversification of asset types. Equity securities are selected from U.K., European, U.S. and emerging market companies. Bonds include U.K. and other countries' government notes and corporate debt of U.K and non-U.K. companies. There are no specific prohibited investments, but the current managed fund will not allocate assets to derivatives or other financial hedging instruments. Plan trustees meet regularly with the fund manager to assess the fund's performance and to reassess investment strategy. At December 31, 2019, the pension asset allocation was 31 percent equities, 58 percent fixed income, five percent insurance contracts, and six percent cash.

Included in plan assets are insurance contracts purchased by the plan trustees to provide pension payments for specific retirees. In past years, at the time a plan participant retired, the plan trustee would periodically purchase insurance contracts to cover the future payments due the retiree. This practice is no longer followed. The contracts are revocable, and the related plan obligations are not considered settled. Therefore, the plan assets and obligations include the insured amounts.

Plan Assets

U.S. Plans

The Company's asset allocations for its U.S. pension plans at December 31, 2019 and 2018, by asset category, were as follows:

<i>(In thousands)</i>	December 31, 2019			
	Level 1	Level 2	Level 3	Total
Cash and Cash Equivalents	\$ 7,261	\$ —	\$ —	\$ 7,261
Equity Securities				
U.S. Equities	50,319	—	—	50,319
Non-U.S. Equities	19,697	—	—	19,697
Employer Securities	27,234	—	—	27,234
Total Equities	97,250	—	—	97,250
Fixed Income Securities				
U.S. Corporate Bonds	—	36,242	—	36,242
U.S. Government and Agency Bonds	11,080	—	—	11,080
Other Bonds	—	8,590	—	8,590
Total Fixed Income	11,080	44,832	—	55,912
Total	\$ 115,591	\$ 44,832	\$ —	\$ 160,423

<i>(In thousands)</i>	December 31, 2018			
	Level 1	Level 2	Level 3	Total
Cash and Cash Equivalents	\$ 4,935	\$ —	\$ —	\$ 4,935
Equity Securities				
U.S. Equities	34,751	—	—	34,751
Non-U.S. Equities	27,415	—	—	27,415
Employer Securities	22,063	—	—	22,063
Total Equities	84,229	—	—	84,229
Fixed Income Securities				
U.S. Corporate Bonds	—	29,659	—	29,659
U.S. Government and Agency Bonds	6,314	3,139	—	9,453
Other Bonds	—	5,922	—	5,922
Total Fixed Income	6,314	38,720	—	45,034
Total	\$ 95,478	\$ 38,720	\$ —	\$ 134,198

Plan Asset Valuation Methodology

Following is a description of the valuation methodologies used for plan assets measured at fair value.

Individual equity securities, including employer securities, are valued by Standard & Poor's Securities Evaluations as determined by quoted market prices on the New York Stock Exchange or other active markets. Both market pricing and future cash flow analysis may be used in the pricing process as follows:

Level 1 – Equities represent the largest asset category and are valued according to the exchange-quoted market prices of the underlying investments. Level 1 fixed income securities are U.S. government securities and are valued according to quoted prices from active markets.

Level 2 – Fixed income investments without equivalent trading exchanges are valued primarily through a technique known as “future cash flow approach” which is based on what bondholders can reasonably expect to receive based upon an issuer's current financial condition. Pricing analysts prepare cash-flow forecasts and utilize one or two pricing models to arrive at an evaluated price. Evaluated bid modeling includes factors such as the interest rate on the coupon, maturity, rating, cash flow projections and other factors.

Level 3 – no investments held during 2019 or 2018 were categorized as Level 3.

U.K. Plan

The Company's asset allocations for its U.K. pension plans at December 31, 2019 and 2018, by asset category, were as follows:

<i>(In thousands)</i>	<i>December 31, 2019</i>			
	<i>Level 1</i>	<i>Level 2</i>	<i>Level 3</i>	<i>Total</i>
Cash	\$ 252	\$ 1,120	\$ —	\$ 1,372
Equity Securities				
Pooled Pension Funds	—	7,533	—	7,533
Fixed Income				
Pooled Pension Funds	—	14,247	—	14,247
Insurance Contracts	—	—	1,205	1,205
Total	\$ 252	\$ 22,900	\$ 1,205	\$ 24,357

<i>(In thousands)</i>	<i>December 31, 2018</i>			
	<i>Level 1</i>	<i>Level 2</i>	<i>Level 3</i>	<i>Total</i>
Cash	\$ 205	\$ —	\$ —	\$ 205
Equity Securities				
Pooled Pension Funds	—	12,750	—	12,750
Fixed Income				
Pooled Pension Funds	—	6,378	—	6,378
Insurance Contracts	—	—	1,243	1,243
Total	\$ 205	\$ 19,128	\$ 1,243	\$ 20,576

Units of each of the pooled funds are valued by the trustee based on quoted market prices of the underlying investments (the underlying assets are either exchange traded or have readily available markets).

Fair value changes within asset categories for which fair value measurements use significant unobservable inputs (Level 3) were as follows during 2018 and 2019:

<i>(In thousands)</i>	Insurance Contracts
Fair value, December 31, 2017	\$ 1,698
Sale proceeds (benefit payments)	(129)
Change in unrealized gain	(247)
Foreign exchange impact	(79)
Fair value, December 31, 2018	\$ 1,243
Sale proceeds (benefit payments)	(121)
Change in unrealized gain	37
Foreign exchange impact	46
Fair value, December 31, 2019	\$ 1,205

Long-term Rate of Return for Plan Assets

U.S. Plans

The overall expected long-term rate of return on assets of 6.75 percent that was used to develop the 2019 pension expense is based on plan asset allocation, capital markets forecasts and expected benefits of active investment management. For fixed income, the expected return is 4.53 percent. This assumption includes the yield on the five-year zero-coupon U.S. Treasury bond as the base rate along with historical data from the U.S. Treasury yield curve. For equities, the expected return is 6.45 percent for U.S. and international equities. This return is based on a blended average of three different statistical models that each incorporates multiple factors including, for example, inflation, Gross Domestic Product and the Fed Funds Target Rate.

The overall investment return forecast reflects the target allocations and the capital markets forecasts for each asset category, plus a premium for active asset management expected over the long-term.

U.K. Plan

The overall expected long-term return on plan assets is a weighted-average of the expected long-term returns for equity securities, debt securities and other assets. The redemption yield at the measurement date on U.K. government fixed interest bonds and the yield on corporate bonds are used as proxies for the return on the debt portfolio. The returns for equities and property are estimated as a premium of 4.3 percent added to the risk-free rate. Cash is assumed to have a long-term return of 0.8 percent.

Other Defined Benefit Plans

The Company maintains funded and unfunded defined benefit plans in other foreign locations. The liabilities and expenses associated with these plans, individually and collectively, are not material to the Company's consolidated financial statements. Discount rates for these plans are determined based on local interest rates and plan participant data.

Cash Flows

As a result of pension funding relief included in the Highway and Transportation Funding Act of 2014, the Company does not expect to make any 2020 contributions to the funded U.S. qualified defined benefit plans. The Company expects to contribute \$301,000 in 2020 to the unfunded non-qualified U.S. pension plans. The Company expects to contribute \$495,000 to the U.K. defined benefit plan in 2020.

Defined Contribution Plans

The Company sponsors retirement savings defined contribution retirement plans that cover eligible U.S. and U.K. employees. The Company's U.S. retirement plans include two qualified plans, one of which is a 401(k) plan and one of which is an employee stock ownership plan, and one non-qualified supplemental executive plan. Prior to 2018, the Company made profit sharing contributions into the qualified retirement plans for its U.S. employees and in 2018 and 2019 made profit sharing contributions into the qualified retirement plans for U.S. employees and for certain non-U.S. employees. Profit sharing contributions were determined using a formula applied to Company earnings. In 2017 and 2018, profit sharing contributions for U.S. employees, who received the

majority of profit sharing contributions, were made partly in cash paid to the 401(k) plan and partly in Company common stock. In 2019, profit sharing contributions for U.S. employees were made to the employee stock ownership plan. Profit sharing contributions are allocated to participant accounts on the basis of participant base earnings. Effective January 1, 2018, the Company amended its U.S. 401(k) plan and its profit sharing formula, which resulted in a higher potential contribution percentage to the U.S. 401(k) plan and a lower potential profit sharing contribution percentage relative to prior years.

Defined contribution expenses for the Company's qualified defined contribution plans and statutory profit sharing contributions were as follows:

<i>(In thousands)</i>	<u>2019</u>	<u>2018</u>	<u>2017</u>
Retirement contributions	\$ 7,328	\$ 7,617	\$ 4,998
Profit sharing contributions	4,702	4,182	7,002
Total	\$ 12,030	\$ 11,799	\$ 12,000

The Company has a rabbi trust to fund the obligations of its non-qualified supplemental executive defined contribution plans (supplemental plans). The trust comprises various mutual fund investments selected by the participants of the supplemental plans. In accordance with the accounting guidance for rabbi trust arrangements, the assets of the trust and the obligations of the supplemental plans are reported on the Company's consolidated balance sheet. The Company elected the fair value option for the mutual fund investment assets so that offsetting changes in the mutual fund values and defined contribution plan obligations would be recorded in earnings in the same period. Therefore, the mutual funds are reported at fair value with any subsequent changes in fair value recorded in the income statement. The supplemental plan liabilities increase (i.e., supplemental plan expense is recognized) when the value of the trust assets appreciates and decrease (i.e., supplemental plan income is recognized) when the value of the trust assets declines. At December 31, 2019 and 2018, the trust asset balances were \$1,744,000 and \$1,444,000, respectively, and the supplemental plan liability balances were \$1,819,000 and \$1,519,000, respectively. The differences between the trust asset balances and the supplemental liability balances were due to estimated liabilities that were not funded until after the end of the year when the actual liabilities were determined.

Certain foreign locations are required by law to make profit sharing contributions to employees based on statutory formulas. For the years ended December 31, 2019, 2018 and 2017, the Company recognized \$935,000, \$374,000 and \$398,000, respectively, of statutory profit sharing expense and are included in the above table.

In total, approximately 77 percent of union and non-union employees are eligible for either Company's sponsored or statutory profit sharing contributions.

15. Accrued Liabilities

The composition of accrued liabilities was as follows:

<i>(In thousands)</i>	<u>December 31</u>	
	<u>2019</u>	<u>2018</u>
Accrued payroll and benefits	\$ 57,894	\$ 53,782
Accrued customer rebates	25,148	24,833
Other accrued liabilities	38,225	16,955
Total accrued liabilities	\$ 121,267	\$ 95,570

16. Other Non-Current Liabilities

The composition of other non-current liabilities was as follows:

<i>(In thousands)</i>	<u>December 31</u>	
	<u>2019</u>	<u>2018</u>
Deferred revenue	\$ 891	\$ 1,215
Environmental and legal matters	12,023	20,404
Deferred compensation liability	49,835	43,819
Pension liability	19,407	26,722
Other non-current liabilities	14,024	11,704
Total other non-current liabilities	\$ 96,180	\$ 103,864

17. Contingencies

There are a variety of legal proceedings pending or threatened against the Company that occur in the normal course of the Company's business, the majority of which relate to environmental assessment, protection and remediation matters. Some of these proceedings may result in fines, penalties, judgments or costs being assessed against the Company at some future time. The Company's operations are subject to extensive local, state and federal regulations, including CERCLA and the Superfund amendments of 1986 (Superfund) as well as comparable regulations applicable to the Company's foreign locations. Over the years, the Company has received requests for information related to or has been named by government authorities as a PRP at a number of sites where cleanup costs have been or may be incurred by the Company under CERCLA and similar state statutes. In addition, damages are being claimed against the Company in general liability actions for alleged personal injury or property damage in the case of some disposal and plant sites. The Company believes that it has made adequate provisions for the costs it is likely to incur with respect to these sites and claims.

In determining the appropriate level of environmental reserves, the Company considers several factors such as information obtained from investigatory studies; changes in the scope of remediation; the interpretation, application and enforcement of laws and regulations; changes in the costs of remediation programs; the development of alternative cleanup technologies and methods; and the relative level of the Company's involvement at various sites for which the Company is allegedly associated. The level of annual expenditures for remedial, monitoring and investigatory activities will change in the future as major components of planned remediation activities are completed and the scope, timing and costs of existing activities are changed. As of December 31, 2019, the Company estimated a range of possible environmental and legal losses of \$25.9 million to \$43.7 million. Within the range of possible environmental and legal losses, management has currently concluded that no single amount is more likely to occur than any other amounts in the ranges and, thus, has accrued at the lower end of the ranges. These accruals totaled \$25.9 million at December 31, 2019 and \$23.4 million at December 31, 2018. Although the Company believes that its reserves are adequate for environmental contingencies, it is possible due to the uncertainties noted above, that additional reserves could be required in the future. Cash expenditures related to legal and environmental matters approximated \$3.8 million for the year ended December 31, 2019, compared to \$1.6 million in 2018.

For certain sites, the Company has responded to information requests made by federal, state or local government agencies but has received no response confirming or denying the Company's stated positions. As such, estimates of the total costs, or range of possible costs, of remediation, if any, or the Company's share of such costs, if any, cannot be determined with respect to these sites. Consequently, the Company is unable to predict the effect thereof on the Company's financial position, cash flows and results of operations. Based upon the Company's present knowledge with respect to its involvement at these sites and the possibility of other viable entities' responsibilities for cleanup, management believes that the Company has no material liability at these sites and that these matters, individually and in the aggregate, will not have a material effect on the Company's financial position. However, in the event of one or more adverse determinations with respect to such sites in any annual or interim period, the effect on the Company's cash flows and results of operations for those periods could be material.

Following are summaries of the Company's major contingencies at December 31, 2019:

Maywood, New Jersey Site

The Company's property in Maywood, New Jersey and property formerly owned by the Company adjacent to its current site and other nearby properties (collectively, the Maywood site) were listed on the National Priorities List in September 1993 pursuant to the provisions of CERCLA because of alleged chemical contamination. Pursuant to (i) September 21, 1987 Administrative Order on Consent entered into between the USEPA and the Company for property formerly owned by the Company at the Maywood site and (ii) the issuance of an order on November 12, 2004 by the USEPA to the Company for property currently owned by the Company at the Maywood site, the Company has completed various Remedial Investigation Feasibility Studies (RI/FS), and on September 24, 2014, USEPA issued its Record of Decision (ROD) for chemically-contaminated soil at the Maywood site, which requires the Company to perform remedial cleanup of the soil and buried waste. The USEPA has not yet issued a ROD for chemically-contaminated groundwater for Maywood site. Based on the most current information available, the Company believes its recorded liability is reasonable having considered the range of estimated costs of remediation for the Maywood site. The estimate of the cost of remediation for the Maywood site could change as the Company continues to hold discussions with the USEPA, as the design of the remedial action is finalized, if a groundwater ROD is issued or if other PRPs are identified. The ultimate amount for which the Company is liable could differ from the Company's current recorded liability.

In April 2015, the Company entered into an Administrative Settlement Agreement and Administrative Order on Consent with USEPA which requires payment of certain costs and performance of certain investigative and design work for chemically-contaminated soil. Based on the Company's review and analysis of this order, no changes to the Company's current recorded liability for claims associated with soil remediation of chemical contamination at the Maywood site were required.

In addition, under the terms of a settlement agreement reached on November 12, 2004, the U.S. Department of Justice and the Company agreed to fulfill the terms of a Cooperative Agreement reached in 1985 under which the United States has taken title to and is responsible for the removal of radioactive waste at the Maywood site and has incurred past and will incur future remediation costs incurred by the United States. As such, the Company recorded no liability related to this settlement agreement.

D'Imperio Property Site

During the mid-1970's, Jerome Lightman and the Lightman Drum Company disposed of hazardous substances generated by the Company's at several sites in New Jersey, including the D'Imperio site. The Company was named as a PRP in an October 2, 1998 lawsuit in the U.S. District court for the district of New Jersey that involved the D'Imperio site. In 2019, the PRPs were provided with updated remediation cost estimates by the PRP group technical consultant and project manager which the Company considered in its determination of its range of estimated possible losses and liability balance. The changes in range of possible losses and liability balance related to such updated remediation cost estimates were immaterial. Remediation work is continuing at the D'Imperio site. Based on current information, the Company believes that its recorded liability is reasonable having considered the range of estimated cost of remediation for the D'Imperio site. Depending on the ultimate costs of the remediation at this site, the amount for which the Company is liable could differ materially from the current estimates.

Wilmington Site

The Company is currently contractually obligated to contribute to the environmental response costs associated with the Company's formerly-owned site in Wilmington, Massachusetts (the Wilmington site). Remediation at this site is being managed by its current owner to whom the Company sold the property in 1980. Under the Company's October 1, 1993 agreement with the current owner of the Wilmington site, once total site remediation costs exceed certain levels, the Company is obligated to contribute up to five percent of future response costs associated with this site with no limitation on the ultimate amount of the Company's contributions. The Company has paid the current owner \$2.8 million for the Company's portion of environmental response costs at the Wilmington site through December 31, 2019. The Company has recorded a liability for its portion of the estimated remediation costs for the site. Depending on the ultimate cost of the remediation at this site, the amount for which the Company is liable could differ materially from the current estimates.

The Company and other prior owners of the Wilmington site also entered into an agreement in April 2004 waiving certain statute of limitations defenses for claims that may be filed by the Town of Wilmington, Massachusetts, in connection with this site. While the Company has denied any liability for any such claims, the Company agreed to this waiver while the parties continue to discuss the resolution of any potential claim which may be filed.

Other U.S. Sites

Through the regular environmental monitoring of its plant production sites, the Company discovered levels of chemical contamination that were above thresholds allowed by law at its Millsdale, Illinois and Fieldsboro, New Jersey plants. The Company voluntarily reported its results to the applicable state environmental agencies. As a result, the Company is required to perform self-remediation of the affected areas. In the fourth quarter of 2016, the Company recognized a charge for the estimated cost of remediating the sites. Remediation work is continuing at these sites. Based on current information, the Company believes that its recorded liability for the remediation of the affected areas is appropriate based on the estimate of expected costs. However, actual costs could differ materially from current estimates.

18. Segment Reporting

The Company has three reportable segments: Surfactants, Polymers and Specialty Products. Each segment provides distinct products and requires separate management due to unique markets, technologies and production processes. Surfactants are used in a variety of consumer and industrial cleaning compounds as well as in agricultural products, lubricating ingredients, oil field chemicals and other specialized applications. Polymers are used primarily in plastics, building materials, refrigeration systems and CASE applications. Specialty Products are used in food, flavoring, nutritional supplement and pharmaceutical applications.

The Company evaluates the performance of its segments and allocates resources based on operating income before interest expense, other income/expense items and income tax provision. The accounting policies of the reportable segments are the same as those described in the summary of significant accounting policies.

The following is segment data for the three years ended December 31, 2019, 2018 and 2017:

<i>(In thousands)</i>	<i>Surfactants</i>	<i>Polymers</i>	<i>Specialty Products</i>	<i>Segment Totals</i>
2019				
Net sales	\$ 1,272,723	\$ 512,347	\$ 73,675	\$ 1,858,745
Operating income	122,780	69,567	16,415	208,762
Assets	907,032	338,179	86,718	1,331,929
Capital expenditures	69,725	29,188	4,441	103,354
Depreciation and amortization expenses	48,422	22,151	5,483	76,056
2018				
Net sales	\$ 1,385,932	\$ 527,420	\$ 80,505	\$ 1,993,857
Operating income (1)	133,518	66,373	11,661	211,552
Assets	850,553	351,690	82,957	1,285,200
Capital expenditures	51,543	26,663	6,192	84,398
Depreciation and amortization expenses	50,514	23,253	5,150	78,917
2017				
Net sales	\$ 1,297,555	\$ 546,634	\$ 80,818	\$ 1,925,007
Operating income (1)	125,712	85,745	9,965	221,422
Assets	881,415	355,065	75,452	1,311,932
Capital expenditures	50,400	21,146	4,234	75,780
Depreciation and amortization expenses	49,102	22,998	5,019	77,119

- (1) The 2018 and 2017 amounts for the noted line items have been retrospectively changed from the amounts originally reported as a result of the Company's first quarter 2019 change in method of accounting for U.S. inventory valuation from LIFO to FIFO.

Below are reconciliations of segment data to the consolidated financial statements:

<i>(In thousands)</i>	<i>2019</i>	<i>2018</i>	<i>2017</i>
Operating income - segment totals (1)	\$ 208,762	\$ 211,552	\$ 221,422
Business restructuring (2)	(2,744)	(2,588)	(3,069)
Unallocated corporate expenses (3)	(78,758)	(59,699)	(63,513)
Total operating income	127,260	149,265	154,840
Interest expense, net	(5,932)	(10,771)	(11,444)
Other, net	4,571	(725)	3,486
Consolidated income before income taxes(1)	<u>\$ 125,899</u>	<u>\$ 137,769</u>	<u>\$ 146,882</u>
Assets - segment totals	\$ 1,331,929	\$ 1,285,200	\$ 1,311,932
Unallocated corporate assets (1)(4)	247,438	229,414	190,960
Consolidated assets	<u>\$ 1,579,367</u>	<u>\$ 1,514,614</u>	<u>\$ 1,502,892</u>
Capital expenditures - segment totals	\$ 103,354	\$ 84,398	\$ 75,780
Unallocated corporate expenditures	2,218	2,249	2,833
Consolidated capital expenditures	<u>\$ 105,572</u>	<u>\$ 86,647</u>	<u>\$ 78,613</u>
Depreciation and amortization expenses – segment totals	\$ 76,056	\$ 78,917	\$ 77,119
Unallocated corporate depreciation expenses	2,645	2,198	1,903
Consolidated depreciation and amortization expenses	<u>\$ 78,701</u>	<u>\$ 81,115</u>	<u>\$ 79,022</u>

- (1) The 2018 and 2017 amounts for the noted line items have been retrospectively changed from the amounts originally reported as a result of the Company's first quarter 2019 change in method of accounting for U.S. inventory valuation from LIFO to FIFO
- (2) See Note 23 regarding business restructuring costs.
- (3) Unallocated corporate expenses primarily comprise corporate administrative expenses (e.g., corporate finance, legal, human resources, information systems, deferred compensation and environmental remediation) that are not included in segment operating income and not used to evaluate segment performance.
- (4) The changes in unallocated corporate assets between 2019, 2018 and 2017 were primarily attributable to changes in the balance of U.S. cash and cash equivalents, which are not allocated to segments.

Below is certain Company-wide geographic data for the years ended December 31, 2019, 2018 and 2017:

<i>(In thousands)</i>	2019	2018	2017
Net sales (1)			
United States	\$ 1,115,993	\$ 1,193,938	\$ 1,159,578
France	145,933	171,010	176,052
Poland	156,391	170,474	188,244
United Kingdom	96,842	105,732	99,069
Brazil	102,590	100,328	109,960
All other countries	240,996	252,375	192,104
Total	\$ 1,858,745	\$ 1,993,857	\$ 1,925,007
Long-lived assets (2)			
United States	\$ 462,199	\$ 427,274	\$ 420,342
Germany	30,084	29,151	29,116
Singapore	28,741	30,838	33,530
Brazil	46,740	48,427	55,974
China	27,201	29,030	30,849
United Kingdom	21,551	20,225	21,657
All other countries	64,239	61,145	50,631
Total	\$ 680,755	\$ 646,090	\$ 642,099

(1) Net sales are attributed to countries based on the location of the Company facility making the sales.

(2) Includes net property, plant and equipment, goodwill and other intangible assets.

19. Earnings Per Share

Below is the computation of basic and diluted earnings per share for the years ended December 31, 2019, 2018 and 2017:

<i>(In thousands, except per share amounts)</i>	2019	2018	2017
Computation of Basic Earnings per Share			
Net income attributable to Stepan Company (1)	\$ 103,129	\$ 111,117	\$ 100,774
Weighted-average number of shares outstanding	23,054	23,022	22,946
Basic earnings per share (1)	\$ 4.47	\$ 4.83	\$ 4.39
Computation of Diluted Earnings per Share			
Net income attributable to Stepan Company (1)	\$ 103,129	\$ 111,117	\$ 100,774
Weighted-average number of shares outstanding	23,054	23,022	22,946
Add weighted-average net shares from assumed exercise of options (under treasury share method) (2)	97	101	161
Add weighted-average net shares related to unvested stock awards (under treasury share method)	2	3	8
Add weighted-average net shares from assumed exercise of SARs (under treasury share method)	125	110	142
Add weighted-average contingently issuable net shares related to performance stock awards (under treasury share method)	38	89	120
Weighted-average shares applicable to diluted earnings	23,316	23,325	23,377
Diluted earnings per share (1)	\$ 4.42	\$ 4.76	\$ 4.31

(1) The 2018 and 2017 amounts for the noted line items have been retrospectively changed from the amounts originally reported as a result of the Company's first quarter 2019 change in method of accounting for U.S. inventory valuation from LIFO to FIFO.

(2) Options/SARs to purchase 107,125, 50,770 and 18,630 shares of common stock were not included in the computations of diluted earnings per share for the years ended December 31, 2019, 2018 and 2017, respectively. The options'/SARs' exercise prices were greater than the average market price for the common stock and the effect of the options/SARs on earnings per share would have been antidilutive.

20. Accumulated Other Comprehensive Income (Loss)

Below is the change in the Company's accumulated other comprehensive income (loss) (AOCI) balance by component (net of income taxes) for the years ended December 31, 2019, 2018 and 2017:

(In thousands)	Foreign Currency Translation Adjustments	Defined Benefit Pension Plan Adjustments	Cash Flow Hedge Adjustments	Total
Balance at December 31, 2016	\$ (96,775)	\$ (30,790)	\$ 100	\$ (127,465)
Other comprehensive income before reclassifications	26,214	(582)	—	25,632
Amounts reclassified from AOCI	—	2,279	(9)	2,270
Net current period other comprehensive income	26,214	1,697	(9)	27,902
Balance at December 31, 2017	\$ (70,561)	\$ (29,093)	\$ 91	\$ (99,563)
Other comprehensive income before reclassifications	(37,920)	(7,080)	—	(45,000)
Amounts reclassified from AOCI	—	3,090	(10)	3,080
Net current period other comprehensive income	(37,920)	(3,990)	(10)	(41,920)
Balance at December 31, 2018	\$ (108,481)	\$ (33,083)	\$ 81	\$ (141,483)
Other comprehensive income before reclassifications	4,444	4,112	—	8,556
Amounts reclassified from AOCI	—	2,091	(9)	2,082
Remeasurement adjustment related to the Tax Act ⁽¹⁾	—	(5,325)	—	(5,325)
Net current period other comprehensive income	4,444	878	(9)	5,313
Balance at December 31, 2019	\$ (104,037)	\$ (32,205)	\$ 72	\$ (136,170)

Amounts reclassified out of AOCI for the three years ended December 31, 2019, 2018 and 2017, is displayed below:

(In thousands)	Amounts Reclassified from AOCI (1)			Affected Line Item in Consolidated Statements of Income
	2019	2018	2017	
Amortization of defined pension items:				
Prior service cost	\$ (12)	\$ (12)	\$ (14)	
Actuarial loss	(2,739)	(4,059)	(3,509)	
	\$ (2,751)	(4,071)	(3,523)	Total before tax (2)
	660	981	1,244	Tax benefit
	\$ (2,091)	\$ (3,090)	\$ (2,279)	Net of tax
Gains and losses on cash flow hedges:				
Foreign exchange contracts	\$ 9	\$ 10	\$ 9	Cost of sales
	9	10	9	Total before tax
	—	—	—	Tax benefit
	\$ 9	\$ 10	\$ 9	Net of tax
Total reclassifications for the period	\$ (2,082)	\$ (3,080)	\$ (2,270)	Net of tax

(1) Amounts in parentheses denote expense to statement of income.

(2) This component of accumulated other comprehensive income is included in the computation of net periodic benefit cost (see Note 14 for details regarding net periodic benefit costs for the Company's U.S. and U.K. defined benefit plans).

21. Acquisitions

2019 Acquisition

On December 17, 2019, the Company acquired an oilfield demulsifier product line. The purchase price of the acquisition was \$9,000,000 and was paid with cash on hand. This acquisition was accounted for as a business combination and the assets were measured and recorded at their estimated fair values. The primary assets acquired were intangibles, mostly comprised of goodwill (\$3,497,000), product know-how (\$1,500,000) and customer relationships (\$3,200,000). A small amount of inventory was also acquired. All of the acquired assets are included within the Company's Surfactants segment. The fair value analysis remains in process and is expected to be finalized during the first half of 2020. The preliminary weighted average amortization periods for the identifiable intangibles assets are: (i) customer list - 22 to 25 years, and; (b) know-how -13 to 14 years.

Pro forma financial information has not been included because revenues and earnings of the Company's consolidated entity would not have been materially different than reported had the acquisition date been January 1, 2018. The acquired business did not impact the Company's 2019 financial results.

2018 Acquisition

On March 26, 2018, the Company through a subsidiary in Mexico closed on a previously announced agreement with BASF Mexicana, S.A.DE C.V. (BASF) to acquire their production facility in Ecatepec, Mexico and a portion of their associated surfactants business. The facility is located close to Mexico City and has over 50,000 metric tons of capacity, 124,000 square feet of warehouse space, a large laboratory and office space. The acquired assets and business are included in the Company's Surfactants segment. The purchase price of the acquisition was \$21,475,000 and was paid with cash on hand. The primary assets acquired were land, buildings, machinery and equipment and inventory. In the third quarter of 2018 the Company reached alignment with BASF on the final value of inventory acquired. The incremental inventory and related value-added taxes totaled \$1,377,000 and increased the total assets acquired in the transaction from \$21,475,000 to \$22,852,000 as of December 31, 2019. The final inventory settlement payment of \$1,377,000 was made in the fourth quarter of 2018. The acquisition was accounted for as a business combination, and, accordingly, the assets acquired were measured and recorded at their estimated fair values. No intangible assets were identified as part of the acquisition. The following table summarizes the assets acquired as a result of the acquisition:

<i>(In thousands)</i>	
Assets:	
Property, plant and equipment	\$ 14,464
Inventory	5,687
Other Receivable	2,701
Total assets acquired	<u>\$ 22,852</u>

The acquired business had a minimal impact on the Company's 2018 financial results.

22. Revenue from Contracts with Customers

In the majority of instances the Company deems a contract with a customer to exist when a purchase order is received from a customer for a specified quantity of product or products and the Company acknowledges receipt of such purchase order. In some instances the Company has entered into manufacturing supply agreements with customers but these agreements typically do not bind a customer to any purchase volume requirements and thus an obligation is not created until the customer submits a purchase order to the Company. The Company's contracts typically have a single performance obligation that is satisfied at the time product is shipped and control passes to the customer. For a small portion of the business, performance obligations are deemed satisfied when product is delivered to a customer location. Revenue is recognized when performance obligations under terms of a contract with a customer have been satisfied, which is predominantly at a point in time. With the 2018 adoption of ASU 2014-09, revenue is currently recognized when a customer obtains control of a product as compared to the "risk and rewards" criteria used in prior years. However, in 2018, the adoption of ASU 2014-09 did not have a material impact on the Company's financial position or results of operations.

Payment terms on sales of product typically range from 30 to 60 days. As a result, the Company has concluded it does not provide any significant benefits of financing to its customers.

The Company has elected to account for shipping and handling as activities to fulfill a promise to transfer the good. As such, shipping and handling fees billed to customers in a sales transaction are recorded in Net Sales and shipping and handling costs incurred are recorded in Cost of Sales. The Company has elected to exclude from Net Sales any value added, sales and other taxes that it collects concurrently with revenue producing activities. These accounting policy elections are consistent with the manner in which the Company has historically recorded shipping and handling fees and taxes.

In some instances, a customer may qualify for a rebate based on the volume of purchases made over a specified period of time, typically a quarterly or annual period. The Company accrues these rebates for each customer under the most likely amount method by estimating the expected volume of total purchases for each customer using actual volumes, customer projections and historical order patterns. These estimated rebates are treated as a reduction to Net Sales with the offset being recognized within Current Liabilities. This methodology is consistent with the manner in which the Company has historically estimated and recorded volume based rebates. In other instances, discounts for early payments are offered to certain customers. These discounts are principally accrued for based the historical use of discounts for all customers using the expected-value method. These estimated early payment discounts are accounted for as a reduction to Net Sales similarly to volume rebates. These forms of variable consideration are considered part of the transaction price.

The Company typically warrants its products from defects. The Company has concluded that these represent assurance-type warranties as opposed to service-type warranties. Product defects are rare in occurrence. As a result, the Company does not maintain any warranty accruals until such time as it is probable a product defect exists.

As of December 31, 2019, the Company had \$350,000 of contract liabilities and no contract assets. A contract liability would typically arise when an advance or deposit is received from a customer before the Company recognizes revenue. In practice, this is rare as it would require a customer to make a payment prior to a performance obligation being satisfied. When such situations do arise, the Company would maintain a deferred revenue liability until the time a performance obligation has been satisfied. The Company did not recognize any revenue in the current period from any pre-existing contract liability balance.

The tables below provide a geographic disaggregation of net sales for the years ended December 31, 2019, 2018 and 2017. The Company's business segmentation by geographic region most effectively captures the nature and economic characteristics of the Company's revenue streams impacted by economic factors.

<i>(In thousands)</i>	2019			
	Surfactants	Polymers	Specialty Products	Total
Geographic Market				
North America	\$ 766,341	\$ 314,549	\$ 61,501	\$ 1,142,391
Europe	240,711	158,455	12,174	411,340
Latin America	212,405	3,304	—	215,709
Asia	53,266	36,039	—	89,305
Total	\$ 1,272,723	\$ 512,347	\$ 73,675	\$ 1,858,745

<i>(In thousands)</i>	2018			
	Surfactants	Polymers	Specialty Products	Total
Geographic Market				
North America	\$ 831,592	\$ 323,360	\$ 68,201	1,223,153
Europe	276,742	172,632	12,304	461,678
Latin America	212,824	3,463	—	216,287
Asia	64,774	27,965	—	92,739
Total	\$ 1,385,932	\$ 527,420	\$ 80,505	\$ 1,993,857

<i>(In thousands)</i>	2017			
	Surfactants	Polymers	Specialty Products	Total
Geographic Market				
North America	\$ 763,044	\$ 329,629	\$ 66,906	1,159,579
Europe	275,121	188,244	13,912	477,277
Latin America	190,802	4,451	—	195,253
Asia	68,588	24,310	—	92,898
Total	\$ 1,297,555	\$ 546,634	\$ 80,818	\$ 1,925,007

23. Business Restructuring

2019 Restructuring

In 2019, the Company restructured its Specialty Products office in the Netherlands and eliminated select positions from the site's supply chain, quality control and research and development areas. This restructuring was designed to better align the number of personnel with current business requirements and reduce costs at the site. As a result, severance and early lease termination expenses of \$554,000 and \$122,000, respectively, were recognized during the year ended December 31, 2019.

2018 Restructuring

During the third quarter of 2018, the Company approved a plan to shut down Surfactants operations at its German plant site. As of December 31, 2019, an aggregate of \$2,313,000 shut down related expense had been recognized at the site. This aggregate expense is comprised of \$1,404,000 of asset and spare part write downs recognized in 2018 and \$909,000 of decommissioning costs recognized in the year ended December 31, 2019. Decommissioning costs associated with the shutdown are expected to continue in 2020.

2017 Restructuring

During the fourth quarter of 2017, the Company approved a plan to restructure a portion of its Fieldsboro, New Jersey production facility. This facility is a part of the Surfactant reportable segment. This decision was made to improve future asset utilization and reduce the North American cost base going forward. As a result, the Company recorded \$915,000 of restructuring expenses which reflected termination benefits for select plant employees. In addition, the Company reduced the useful lives of the manufacturing assets that were impacted by the restructuring and recorded \$1,290,000 of accelerated depreciation. This expense was recorded in the cost of sales line of the consolidated statements of income. In the first quarter of 2019, the Company recognized a \$251,000 favorable adjustment to the amount of termination benefits initially recorded.

Also, in June 2017, the Company eliminated 11 positions from manufacturing operations at its Singapore plant. The Singapore plant is part of the Company's Surfactant segment. The reduction in positions was made to better align the number of personnel with current business requirements and to reduce costs at that site. As a result of the reduction in workforce, termination expense of \$132,000 was recognized in the second quarter of 2017 and there was no remaining liability for the termination pay as of December 31, 2017.

2016 Restructuring

In May 2016, the Company announced plans to shut down its Long Mills, Ontario, Canada (Longford Mills) manufacturing facility, a part of the Surfactant reportable segment, by December 31, 2016. The shutdown plan was implemented to improve the Company's asset utilization in North America and to reduce the Company's fixed cost base. Manufacturing operations at the Longford Mills plant ceased by the end of 2016, and production of goods manufactured at the facility was transferred to other Company North American production sites. Decommissioning of the assets is expected to continue throughout 2020. As of December 31, 2019, \$7,484,000 of aggregate restructuring expense had been recognized, reflecting \$1,644,000 of termination benefits for approximately 30 employees and \$5,840,000 for other expenses, principally site decommissioning costs.

24. Insurance Recovery

The Company received insurance recovery proceeds of \$8,965,000 in December 2019 for damaged equipment, incremental supply chain expenses and business interruption losses pertaining to the first quarter 2019 sulfonation equipment failure at the Company's plant in Ecatepec, Mexico. The insurance recovery was recorded as reduction of cost of sales in the consolidated statement of income for the year ended December 31, 2019.

25. Customer Claims

In the fourth quarter of 2016, the Company established a reserve for two customer claims which alleged that product manufactured by the Company may have caused performance problems with the customers' products. The combined amount of the reserve was \$7,367,000, which was recorded as a reduction of net sales in the year ended December 31, 2016. Both claims related to the Company's Surfactant segment. In the fourth quarter of 2017, the Company paid \$2,709,000 for one of the claims and reversed the remainder of the reserve for the claim. The claim reversal was recorded within net sales. The second claim for \$703,000 was paid in the second quarter of 2019 and was covered by insurance.

26. Statement of Cash Flows – Noncash Investing and Financing Activities

Noncash investing activities included liabilities (accounts payable) incurred for property, plant and equipment expenditures of approximately \$16,890,000, \$15,119,000, and \$12,600,000 that were unpaid at December 31, 2019, 2018 and 2017, respectively. Noncash financing activities included 96,095 shares of Company common stock (valued at \$8,893,000), 99,497 shares of Company common stock (valued at \$7,931,000) and 35,372 shares of Company common stock (valued at \$2,941,000) issued in connection with the Company's stock award plan in 2019, 2018 and 2017, respectively.

27. Subsequent Events

On January 19, 2020, the Company experienced a power disruption that impacted its Millsdale, Illinois facility. This power outage combined with below freezing temperatures led to significant production and operational challenges. During the period that followed the Millsdale facility operated on a partial basis and used existing inventories to serve its customers. On February 17, 2020, operational issues impacted the Millsdale site's waste water treatment plant (WWTP) and forced the Company to stop production at the site. The Company has subsequently restarted polyol production using a temporary solution. The Company announced on February 26, 2020, that the waste water treatment plant at the Millsdale facility was back in operation and that the facility was producing Surfactant products. The Company is working to resume phthalic anhydride production. As a result of the WWTP plant being down and low inventory levels the Company declared Force Majeure for the supply of phthalic anhydride and certain surfactant product lines. The Company is using its global production network and working with customers to minimize the impact of this supply disruption. At this time, the Company is not able to quantify the extent of the impact from this event on the Company's statement of financial position, results of operations or cash flows. The Company is working with its insurance provider to recover the losses related to this incident.

Selected Quarterly Financial Data
(In thousands, except per share data)
Unaudited

Quarter	2019				
	First	Second	Third	Fourth	Year
Net Sales	\$ 489,170	\$ 473,003	\$ 451,582	\$ 444,990	\$ 1,858,745
Gross Profit	84,609	92,959	77,402	84,744	339,714
Operating Income	29,738	41,065	27,966	28,491	127,260
Interest, net	(1,853)	(1,766)	(1,402)	(911)	(5,932)
Income Before Income Taxes	31,030	39,534	27,449	27,886	125,899
Net Income	24,978	30,210	25,880	22,033	103,101
Net Income Attributable to Stepan Company	24,984	30,218	25,889	22,038	103,129
Per Diluted Share	1.07	1.30	1.11	0.95	4.42

Quarter	2018				
	First	Second	Third	Fourth	Year
Net Sales	\$ 499,335	\$ 519,866	\$ 507,997	\$ 466,659	\$ 1,993,857
Gross Profit (1)	91,198	89,981	83,576	74,594	339,349
Operating Income (1)	41,283	45,386	27,145	35,451	149,265
Interest, net	(3,151)	(2,672)	(2,797)	(2,151)	(10,771)
Income Before Income Taxes (1)	39,292	43,198	24,694	30,585	137,769
Net Income (1)	31,945	33,452	21,754	23,954	111,105
Net Income Attributable to Stepan Company (1)	31,952	33,454	21,754	23,957	111,117
Per Diluted Share (1)	1.37	1.44	0.93	1.03	4.76

(1) The 2018 amounts for the noted line items have been retrospectively changed from the amounts originally reported as a result of the Company's first quarter 2019 change in method of accounting for U.S. inventory valuation from LIFO to FIFO

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

None

Item 9A. Controls and Procedures

a. Evaluation of Disclosure Controls and Procedures

We have conducted an evaluation of the effectiveness of the design and operation of our disclosure controls and procedures, as defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934, as amended (the “Exchange Act”), as of December 31, 2019. Based on this evaluation of our disclosure controls and procedures, our Chief Executive Officer and our Chief Financial Officer have concluded that our disclosure controls and procedures were effective as of December 31, 2019, such that the information required to be disclosed in our Securities and Exchange Commission reports is recorded, processed, summarized and reported within the time periods specified by the rules and forms of the Exchange Act and is accumulated and communicated to management, including our Chief Executive Officer and our Chief Financial Officer, as appropriate to allow timely decisions regarding required disclosures.

b. Management’s Annual Report on Internal Control over Financial Reporting

The management of the Company is responsible for establishing and maintaining adequate internal control over financial reporting. The Company’s internal control system was designed to provide reasonable assurance to the Company’s management and board of directors regarding the preparation and fair presentation of published financial statements.

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 presentation.

The Company’s management assessed the effectiveness of the Company’s internal control over financial reporting as of December 31, 2019. In making this assessment, it used the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission (COSO) in *Internal Control – Integrated Framework (2013)*. Based on our assessment we believe that, as of December 31, 2019, the Company’s internal controls over financial reporting were effective based on those criteria.

The Company’s independent registered public accounting firm that audited the financial statements included in this Form 10-K has issued an attestation report on the Company’s internal control over financial reporting. This report follows:

c. Report of Independent Registered Public Accounting Firm

To the Shareholders and Board of Directors of
Stepan Company
Northfield, Illinois

Opinion on Internal Control over Financial Reporting

We have audited the internal control over financial reporting of Stepan Company and subsidiaries (the “Company”) as of December 31, 2019, based on criteria established in *Internal Control — Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). In our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2019, based on criteria established in *Internal Control – Integrated Framework (2013)* issued by COSO.

We have also audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the consolidated financial statements as of and for the year ended December 31, 2019, of the Company and our report dated February 27, 2020, expressed an unqualified opinion on those financial statements and included explanatory paragraphs regarding the Company’s adoption of ASU No. 2016-02, Leases (Topic 842) and the Company’s change of method of accounting for its United States inventories from the last in, first out (LIFO) method to first in, first out (FIFO).

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 Annual 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 in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

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

/s/ Deloitte & Touche LLP
DELOITTE & TOUCHE LLP

Chicago, Illinois
February 27, 2020

d. Changes in Internal Control Over Financial Reporting

There were no changes in the Company's internal controls over financial reporting (as defined in Rule 13a-15(f) under the Exchange Act) that occurred during the quarter ended December 31, 2019, that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Item 10. Directors, Executive Officers and Corporate Governance

(a) Directors

See the Company's Proxy Statement for the Annual Meeting of Stockholders to be held April 21, 2020, which is incorporated by reference herein, for information on the Directors of the Registrant.

(b) Executive Officers

See "Information About our Executive Officers" in Part I above for the identification of the Company's executive officers. See the Company's Proxy Statement for the Annual Meeting of Stockholders to be held April 21, 2020, which is incorporated by reference herein, for other information on the Company's executive officers.

(c) Delinquent Section 16(a) Reports

See the Company's Proxy Statement for the Annual Meeting of Stockholders to be held April 21, 2020, which is incorporated by reference herein, for other information regarding Section 16(a) beneficial ownership reporting compliance.

(d) Audit Committee Financial Expert

See the Company's Proxy Statement for the Annual Meeting of Stockholders to be held April 21, 2020, which is incorporated by reference herein, for information on the Company's Audit Committee Financial Expert.

(e) Code of Conduct

See the Company's Proxy Statement for the Annual Meeting of Stockholders to be held April 21, 2020, which is incorporated by reference herein, for information on the Company's Code of Conduct.

Item 11. Executive Compensation

See the Company's Proxy Statement for the Annual Meeting of Stockholders to be held April 21, 2020, for information on the Compensation of Executive Officers and Directors, which is incorporated by reference herein.

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

See the Company's Proxy Statement for the Annual Meeting of Stockholders to be held April 21, 2020, for information on Security Ownership, which is incorporated by reference herein.

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

See the Company's Proxy Statement for the Annual Meeting of Stockholders to be held April 21, 2020, for information on Transactions with Related Persons, Promoters and Certain Control Persons and for Corporate Governance Principles and Board Matters, which are incorporated by reference herein.

Item 14. Principal Accounting Fees and Services

See the Company's Proxy Statement for the Annual Meeting of Stockholders to be held April 21, 2020, for information on Accounting and Auditing Matters, which is incorporated by reference herein.

Item 15. Exhibits, Financial Statement Schedules

(a) Financial Statements

See Item 8 for the Consolidated Financial Statements and supplementary data included in this Form 10-K.

(b) Exhibits

See the following List of Exhibits:

Exhibit No.	Description
3.1	<u>Restated Certificate of Incorporation of Stepan Company, filed October 21, 2013, with the State of Delaware (filed with the Company's Quarterly Report on Form 10-Q for the quarter ended September 30, 2013 (File No. 001-4462), and incorporated herein by reference)</u>
3.2	<u>Amended and Restated Bylaws of Stepan Company (Amended as of October 22, 2019) (filed with the Company's Quarterly Report on Form 10-Q filed on October 30, 2019 (File No. 001-4462), and incorporated herein by reference)</u>
4.1*	<u>Description of the Company's Common Stock</u>
10.1	<u>Settlement Agreement, which provided information with respect to the Company's agreement with the United States regarding environmental remediation work to be completed at Stepan's site in Maywood, New Jersey (filed with the Company's Current Report on Form 8-K filed on November 18, 2004 (File No. 001-4462), and incorporated herein by reference)</u>
10.2+	<u>Stepan Company Supplemental Savings and Investment Retirement Plan (Amended and Restated Effective as of January 1, 2019) (filed with the Company's Quarterly Report on Form 10-Q filed on October 30, 2019 (File No. 001-4462), and incorporated herein by reference)</u>
10.3+	<u>Stepan Company 2011 Incentive Compensation Plan (filed with the Company's Definitive Proxy Statement on Schedule 14A filed on March 31, 2011 (File No. 001-4462), and incorporated herein by reference)</u>
10.4+	<u>Form of Non-Qualified Stock Option Agreement under the Stepan Company 2011 Incentive Compensation Plan (filed with the Company's Quarterly Report on Form 10-Q for the quarter ended June 30, 2011 (File No. 001-4462), and incorporated herein by reference)</u>
10.5+	<u>Form of Incentive Stock Option Agreement under the Stepan Company 2011 Incentive Compensation Plan (filed with the Company's Quarterly Report on Form 10-Q for the quarter ended June 30, 2011 (File No. 001-4462), and incorporated herein by reference)</u>
10.6	<u>Form of Non-Employee Director Non-Qualified Stock Option Agreement under the Stepan Company 2011 Incentive Compensation Plan (filed with the Company's Quarterly Report on Form 10-Q for the quarter ended June 30, 2011 (File No. 001-4462), and incorporated herein by reference)</u>
10.7+	<u>Form of Stock Appreciation Rights Agreement under the Stepan Company 2011 Incentive Compensation Plan (filed with the Company's Current Report on Form 8-K filed on February 23, 2015 (File No. 001-4462), and incorporated herein by reference)</u>
10.8+	<u>Form of Performance Grant Agreement under the Stepan Company 2011 Incentive Compensation Plan (filed with the Company's Current Report on Form 8-K filed on February 23, 2015 (File No. 001-4462), and incorporated herein by reference)</u>
10.9+	<u>Form of Non-Qualified Stock Option Agreement under the Stepan Company 2011 Incentive Compensation Plan (filed with the Company's Annual Report on Form 10-K for the year ended December 31, 2016 (File No. 001-4462), and incorporated herein by reference)</u>
10.10+	<u>Form of Stock Appreciation Rights Agreement under the Stepan Company 2011 Incentive Compensation Plan (filed with the Company's Annual Report on Form 10-K for the year ended December 31, 2016 (File No. 001-4462), and incorporated herein by reference)</u>

Exhibit No.	Description
10.11+	<u>First Amendment to the Stepan Company 2011 Incentive Compensation Plan (filed with the Company's Annual Report on Form 10-K for the year ended December 31, 2017 (File No. 001-4462), and incorporated herein by reference)</u>
10.12+	<u>Form of Non-Qualified Stock Option Agreement under the Stepan Company 2011 Incentive Compensation Plan (filed with the Company's Annual Report on Form 10-k for the year ended December 31, 2017 (File No. 001-4462), and incorporated herein by reference)</u>
10.13+	<u>Form of Performance Grant Agreement under the Stepan Company 2011 Incentive Compensation Plan (filed with the Company's Annual Report on Form 10-K for the year ended December 31, 2017 (File No. 001-4462), and incorporated herein by reference)</u>
10.14+	<u>Form of Stock Appreciation Rights Agreement under the Stepan Company 2011 Incentive Compensation Plan (filed with the Company's Annual Report on Form 10-K for the year ended December 31, 2017 (File No. 001-4462), and incorporated herein by reference)</u>
10.15+	<u>Form of Stock Awards Agreement under the Stepan Company 2011 Incentive Compensation Plan (filed with the Company's Annual Report on Form 10-K for the year ended December 31, 2017 (File No. 001-4462), and incorporated herein by reference)</u>
10.16+	<u>Second Amendment to the Stepan Company 2011 Incentive Compensation Plan (filed with the Company's Current Report on Form 8-K filed on May 6, 2019 (File No. 001-4462), and incorporated herein by reference)</u>
10.17+	<u>Performance Award Deferred Compensation Plan (Effective January 1, 2008) (filed with the Company's Current Report on Form 8-K filed on October 24, 2008 (File No. 001-4462), and incorporated herein by reference)</u>
10.18	<u>Stepan Company Directors Deferred Compensation Plan amended and restated as of January 1, 2012 (filed with the Company's Annual Report on Form 10-K for the year ended December 31, 2018 (File No. 001-4462), and incorporated herein by reference)</u>
10.19+	<u>Management Incentive Plan (As Amended and Restated Effective January 1, 2015) (filed with the Company's Quarterly Report on Form 10-Q for the quarter ended June 30, 2015 (File No. 001-4462), and incorporated herein by reference)</u>
10.20+	<u>Separation Agreement and Release, dated as of August 15, 2017, by and between Stepan Company and Scott Mason (filed with the Company's Current Report on Form 8-K filed on August 17, 2017 (File No. 01-4462) and incorporated herein by reference)</u>
10.21+	<u>Separation Agreement and Release, dated as of September 16, 2018, by and between Stepan Company and Jennifer Ansbro Hale (filed with the Company's Current Report on Form 8-K filed on September 20, 2018 (File No. 01-4462) and incorporated herein by reference)</u>
10.22	<u>Note Purchase Agreement, dated as of September 29, 2005, regarding 5.69% Senior Notes due November 1, 2018, with Connecticut General Life Insurance Company, Life Insurance Company of North America, MONY Life Insurance Company, AXA Equitable Life Insurance Company and Horizon Blue Cross Blue Shield of New Jersey (filed with the Company's Current Report on Form 8-K filed on October 3, 2005 (File No. 001-4462), and incorporated herein by reference)</u>
10.23	<u>First Supplement, dated as of June 1, 2010, to Note Purchase Agreement dated as of September 29, 2005, regarding 5.88% Senior Notes due June 1, 2022, with The Prudential Insurance Company of America, Prudential Retirement Insurance and Annuity Company, Forethought Life Insurance Company, AXA Equitable Life Insurance Company, Connecticut General Life Insurance Company and Life Insurance Company of North America (filed with the Company's Current Report on Form 8-K filed on June 3, 2010 (File No. 001-4462), and incorporated herein by reference)</u>
10.24	<u>First Amendment, dated as of October 25, 2011, to Note Purchase Agreement dated as of September 29, 2005 (filed with the Company's Quarterly Report on Form 10-Q for the quarter ended September 30, 2011 (File No. 001-4462), and incorporated herein by reference)</u>
10.25	<u>Second Supplement, dated as of November 1, 2011, to Note Purchase Agreement dated as of September 29, 2005, regarding 4.86% Senior Notes due November 1, 2023 (filed with the Company's Current Report on Form 8-K filed on November 4, 2011 (File No. 001-4462), and incorporated herein by reference)</u>

**Exhibit
No.****Description**

10.26	Second Amendment, dated as of April 23, 2014, to Note Purchase Agreement dated as of September 29, 2005 (filed with the Company's Annual Report on Form 10-K for the year ended December 31, 2017 (File No. 001-4462), and incorporated herein by reference
10.27	Third Amendment, dated as of January 30, 2018, to the Note Purchase Agreement dated as of September 29, 2005 among Stepan Company and the noteholders party thereto (filed with the Company's Current Report on Form 8-K filed on February 2, 2018 (File No. 001-4462) and incorporated herein by reference)
10.28	Note Purchase Agreement, dated as of June 27, 2013, regarding 3.86% Senior Notes due June 27, 2025 (filed with the Company's Current Report on Form 8-K filed on July 3, 2013 (File No. 001-4462), and incorporated herein by reference)
10.29	First Amendment, dated as of January 30, 2018, to the Note Purchase Agreement dated as of June 27, 2013 among Stepan Company and the noteholders party thereto (filed with the Company's Current Report on Form 8-K filed on February 2, 2018 (File No. 001-4462) and incorporated herein by reference)
10.30	Note Purchase Agreement, dated as of July 10, 2015, regarding 3.95% Senior Notes Due July 10, 2027 (filed with the Company's Current Report on Form 8-K filed on July 13, 2015 (File No. 001-4462), and incorporated herein by reference)
10.31	First Amendment, dated as of January 30, 2018, to the Note Purchase Agreement dated as of July 10, 2015 among Stepan Company and the noteholders party thereto (filed with the Company's Current Report on Form 8-K filed on February 2, 2018 (File No. 001-4462) and incorporated herein by reference)
10.32	Credit Agreement, dated as of January 30, 2018, among Stepan Company, the foreign subsidiary borrowers from time to time party thereto, the lenders party thereto, and JPMorgan Chase Bank, N.A., as administrative agent, Bank of America, N.A., as syndication agent, and J.P. Morgan Chase Bank, N.A. and Merrill Lynch Pierce Fenner & Smith Incorporated, as joint lead arrangers and joint bookrunners (filed with the Company's Current Report on Form 8-K filed on February 2, 2018 (File No. 001-4462) and incorporated herein by reference)
21*	Subsidiaries of the Registrant at December 31, 2019
23*	Consent of Independent Registered Public Accounting Firm
24*	Power of Attorney
31.1*	Certification of President and Chief Executive Officer Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002
31.2*	Certification of Chief Financial Officer (Principal Financial Officer) to Section 302 of the Sarbanes-Oxley Act of 2002
32*	Certification of President and Chief Executive Officer (Principal Executive Officer) and Chief Financial Officer (Principal Financial Officer) pursuant to Section 906 of the Sarbanes-Oxley Act of 2002
101.INS	Inline XBRL Instance Document
101.SCH	Inline XBRL Taxonomy Extension Schema Document
101.CAL	Inline XBRL Taxonomy Extension Calculation Linkbase Document
101.DEF	Inline XBRL Taxonomy Extension Definition Document
101.LAB	Inline XBRL Taxonomy Extension Label Linkbase Document
101.PRE	Inline XBRL Taxonomy Extension Presentation Linkbase Document
104	Cover Page Interactive Data File (formatted as Inline XBRL and contained in Exhibit 101)

* Filed herewith

+ Management contract or compensatory plan

Item 16. Form 10-K Summary

None

**DESCRIPTION OF THE COMPANY'S SECURITIES REGISTERED PURSUANT TO
SECTION 12 OF THE SECURITIES EXCHANGE ACT OF 1934**

The following is a brief description of the common stock, par value \$1.00 per share ("Common Stock"), of Stepan Company (the "Company," "we," "us" or "our"), which is the only security of the Company registered pursuant to Section 12 of the Securities Exchange Act of 1934. The following summary is not complete and is qualified in its entirety by reference to the Company's Restated Certificate of Incorporation (the "Charter"), the Company's Amended and Restated By-laws (Amended as of October 22, 2019) (the "By-laws") and relevant sections of the Delaware General Corporation Law (the "DGCL").

General

We have the authority to issue a total of 60,000,000 shares of Common Stock and 2,000,000 shares of preferred stock, without par value ("Preferred Stock").

The Board of Directors of the Company (the "Board") is granted authority to issue Preferred Stock of one or more series and, in connection with the creation of any such series, to fix by the resolution or resolutions providing for the issue of shares of Preferred Stock, the designations and the powers, preferences and rights, and the qualifications, limitations or restrictions of such Preferred Stock, including (without limitation) the authority to fix any dividend, liquidation, redemption, voting or conversion characteristics of the Preferred Stock of any series thereof.

Voting Rights

At all meetings of the stockholders of the Company, each holder of record of Common Stock shall be entitled to vote and have one vote for each share held by such holder of record. Except as otherwise required in the Charter, By-laws or by applicable law, the holders of voting stock shall vote together as one class on all matters submitted to a vote of stockholders generally. The Charter and By-laws do not provide for cumulative voting in connection with the election of directors. Accordingly, holders of more than 50% of the shares voting will be able to elect all of the directors standing for election at a meeting of stockholders. However, in a contested election, a plurality of the votes shall be enough to elect a director. The holders of a majority of our voting stock issued and outstanding and entitled to vote at a meeting of stockholders, present in person or represented by proxy, constitute a quorum at any such meeting of stockholders for the transaction of business.

Dividend Rights

Subject to any dividend rights granted to Preferred Stock that may be outstanding from time to time, the holders of shares of Common Stock shall be entitled to receive such dividends and other distributions in cash, property or shares of stock as may be declared thereon by the Board from time to time out of the assets or funds legally available. Before payment of any dividend, there may be set aside out of any funds available for dividends such sum or sums as the directors, in their absolute discretion, think proper as a reserve or reserves to meet contingencies, or for equalizing dividends, or for repairing or maintaining any Company property, or for such other purpose as the directors shall think conducive to the interests of the Company, and the directors may modify or abolish any such reserve in the manner in which it was created.

No Preemptive Rights

No holder of our capital stock has any preemptive right to subscribe for any shares of our capital stock issued in the future.

Liquidation Rights

The holders of Common Stock shall be entitled to share ratably in the assets of the Company remaining after payment pursuant to any liquidation rights granted to Preferred Stock that may be outstanding from time to time.

Preferred Stock

As of February 26, 2020, there are no shares of any series of Preferred Stock outstanding. The Charter provides that the Board may, by resolution, establish one or more series of Preferred Stock having the number of shares and relative voting rights, designations, dividend rates, liquidation and other rights, preferences and limitations as may be fixed by the Board without further stockholder approval. The holders of our Preferred Stock may be entitled to preferences over common stockholders with respect to dividends, liquidation, dissolution or our winding up in such amounts as are established by the resolutions of the Board approving the issuance of such shares.

The issuance of Preferred Stock may have the effect of delaying, deferring or preventing a change in control without further action by the holders and may adversely affect voting and other rights of holders of our securities. In addition, issuance of Preferred Stock, while providing desirable flexibility in connection with possible acquisitions and other corporate purposes, could make it more difficult for a third party to acquire a majority of the outstanding shares of our voting stock.

Provisions of Our Charter, By-laws and Delaware Law That May Have an Anti-Takeover Effect

Preferred Stock

See above under "Preferred Stock."

Special Meetings of Stockholders

The By-laws provide that special meetings of the stockholders may be called by our Chair of the Board, the President and Chief Executive Officer or any two directors. Subject to certain exceptions, a special meeting of stockholders may also be called by our secretary upon the written request of stockholders entitled to cast not less than one-third of the voting power of all votes entitled to be cast at the special meeting.

Advance Notice of Stockholder Meetings

Notice of any annual or special meeting of stockholders, stating the place (if any), date and hour of the meeting, the means of remote communication (if any) by which stockholders may be deemed to be present in person and vote at such meeting, and in the case of a special meeting, the purpose of purposes for which the meeting is called, shall be given in writing to each stockholder entitled to vote at such meeting not less than ten nor more than 60 days before the date of such meeting.

Advance Notice for Nominations or Stockholder Proposals at Meetings

The By-laws also prescribe the procedure that a stockholder must follow to nominate directors or bring business before annual or special stockholder meetings.

Nominations of persons for election to the Board and the proposal of business at stockholder meetings may be made by (1) the Company, (2) the Chair of the Board or (3) any stockholder entitled to vote and who makes the nomination or proposal pursuant to timely notice in proper written form to our Secretary in compliance with the procedures set forth in the By-laws.

For a stockholder to nominate a candidate for director or to bring other business before an annual meeting, we must receive notice not more than 120 days nor less than 90 days prior to the first anniversary date of the immediately preceding annual meeting; provided, however, that in the event that the annual meeting is called for a date that is not within 30 days before or after such anniversary date, notice by the stockholder must be received not later than the close of business on the tenth day following the date on which notice of such meeting is first given to stockholders or public disclosure of the date of such meeting is made.

For a stockholder to nominate a candidate for director or to bring other business before special meeting, we must receive notice by the close of business on the tenth day following the date on which notice of such meeting is first given to stockholders or public disclosure of the date of such meeting is made.

Notice of a nomination for director or proposals to bring other business before a meeting must also include a description of various matters regarding the nominee or proposal and the shareholder giving notice, as set forth in the By-laws.

At a meeting of stockholders, only such business (other than the nomination of candidates for election as directors in accordance with the By-laws) will be conducted or considered as is properly brought before the annual meeting or a special meeting as specified in the By-laws.

Directors

The total number of directors constituting the Board shall be fixed from time to time by a resolution of the Board, but the Board shall consist of no more than eight members. As of February 26, 2020, the Board has seven members.

Each director to be elected by stockholders shall be elected by a majority vote of the stockholders, except that if the number of nominees exceeds the number of directors to be elected, the directors shall be elected by a plurality of votes. If an incumbent director fails to receive the required vote for re-election, the director shall tender an irrevocable resignation that will be effective upon the Board's acceptance of such resignation.

There is no cumulative voting in the election of directors. Directors may be removed, with or without cause, by a majority vote of our voting stock.

Our directors serve staggered three-year terms. The directors are classified into three classes, each class consisting of one-third in number of the directors as near as may be. At each annual election of directors, the successors to the class of directors whose terms expires in that year shall be elected for a three-year term. One class of directors shall be elected by the stockholders at each annual meeting of stockholders.

The Board is expressly authorized to adopt, amend or repeal the By-laws.

Delaware Law

The Company is a Delaware corporation subject to Section 203 of the DGCL. Section 203 provides that, subject to certain exceptions specified in the law, a Delaware corporation shall not engage in certain "business combinations" with any "interested stockholder" for a three-year period following the time that the stockholder became an interested stockholder unless:

- prior to such time, the Board approved either the business combination or the transaction which resulted in the stockholder becoming an interested stockholder;
- upon consummation of the transaction which resulted in the stockholder becoming an interested stockholder, the interested stockholder owned at least 85% of our voting stock outstanding at the time the transaction commenced, excluding certain shares; or
- at or subsequent to that time, the business combination is approved by the Board and authorized at an annual or special meeting of stockholders, and not by written consent, by the affirmative vote of at least 66 2/3% of the outstanding voting stock which is not owned by the interested stockholder.

Generally, a "business combination" includes a merger, asset or stock sale or other transaction resulting in a financial benefit to the interested stockholder. Subject to certain exceptions, an "interested stockholder" is a person who, together with that person's affiliates and associates, owns, or within the previous three years did own, 15% or more of our outstanding voting stock.

Under certain circumstances, Section 203 makes it more difficult for a person who would be an "interested stockholder" to effect various business combinations with a corporation for a three-year period. The provisions of Section 203 may encourage companies interested in acquiring our company to negotiate in advance with the Board

because the stockholder approval requirement would be avoided if the Board approves either the business combination or the transaction which results in the stockholder becoming an interested stockholder. These provisions also may have the effect of preventing changes in the Board and may make it more difficult to accomplish transactions which stockholders may otherwise deem to be in their best interests.

SUBSIDIARIES OF THE REGISTRANT

<u>Subsidiary</u>	<u>Jurisdiction of Organization</u>
Nanjing Stepan Jinling Chemical Limited Liability Company	China
PBC Indústria Química Ltda.	Brazil
Stepan Asia Pte. Ltd.	Singapore
Stepan Canada Inc.	Canada
Stepan CDMX, S. de R.L. de C.V.	Mexico
Stepan Chemical (Nanjing) Co., Ltd.	China
Stepan Chemical (Shanghai) Co., Ltd.	China
Stepan Colombia S.A.S.	Colombia
Stepan Deutschland GmbH	Germany
Stepan Europe S.A.S.	France
Stepan Holdings Asia Pte. Ltd.	Singapore
Stepan Holdings, LLC	United States
Stepan (India) Private Limited	India
Stepan Mexico Holdings, LLC	United States
Stepan Mexico, S.A. de C.V.	Mexico
Stepan (Nanjing) Chemical R&D Co., Ltd.	China
Stepan Philippines, Inc.	Philippines
Stepan Philippines Quaternaries, Inc.	Philippines
Stepan Polska Sp. z o.o.	Poland
Stepan Química Argentina S.R.L.	Argentina
Stepan Química Ltda.	Brazil
Stepan Specialty Products B.V.	Netherlands
Stepan Specialty Products, LLC	United States
Stepan Surfactants Holdings, LLC	United States
Stepan UK Limited	United Kingdom
Tebras Tensoativos do Brasil Ltda.	Brazil

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We consent to the incorporation by reference in Post-Effective Amendment No. 1 to Registration Statement Nos. 333-39938 and 333-133588, and Registration Statement Nos. 033-57189 and 333-173878 on Form S-8 of our reports dated February 27, 2020, relating to the consolidated financial statements of Stepan Company and subsidiaries (the “Company”), and the effectiveness of the Company’s internal control over financial reporting appearing in this Annual Report on Form 10-K of Stepan Company for the year ended December 31, 2019.

/s/ Deloitte & Touche LLP

DELOITTE & TOUCHE LLP

Chicago, Illinois
February 27, 2020

POWER OF ATTORNEY

The undersigned hereby appoints F. Quinn Stepan, Jr. and Luis E. Rojo and each of them individually, the true and lawful attorney or attorneys of the undersigned, with substitution and resubstitution, to execute in his name, place and stead in his capacity as an officer or director or both of Stepan Company, a Delaware corporation, the Annual Report on Form 10-K under the Securities Exchange Act of 1934 for the year ended December 31, 2019, and any amendments or supplements thereto, and all instruments necessary or incidental in connection therewith, and to file or cause to be filed such Annual Report and related documents with the Securities and Exchange Commission. Each of said attorneys shall have full power and authority to do and perform, in the name and on behalf of the undersigned, every act whatsoever necessary or desirable to be done in the premises, as fully as all intents and purposes of the undersigned could do in person. The undersigned hereby ratifies and approves the actions of said attorneys and each of them.

IN WITNESS WHEREOF, the undersigned has executed this Power of Attorney on this day of February 18, 2020.

/s/ F. Quinn Stepan, Jr.

F. Quinn Stepan, Jr.

/s/ Luis E. Rojo

Luis E. Rojo

/s/ Michael R. Boyce

Michael R. Boyce

/s/ Randall S. Dearth

Randall S. Dearth

/s/ Joaquin Delgado

Joaquin Delgado

/s/ Gregory E. Lawton

Gregory E. Lawton

/s/ Jan Stern Reed

Jan Stern Reed

/s/ Edward J. Wehmer

Edward J. Wehmer

**CERTIFICATION OF PRESIDENT AND CHIEF EXECUTIVE OFFICER
PURSUANT TO EXCHANGE ACT RULE 13a-14(a)/15d-14(a)**

I, F. Quinn Stepan, Jr., certify that:

1. I have reviewed this annual report on Form 10-K of Stepan Company;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - (a) designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - (b) designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, 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;
 - (c) evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - (d) disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - (a) all significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - (b) any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: February 27, 2020

/s/ F. Quinn Stepan, Jr.
F. Quinn Stepan, Jr.
Chairman, President and Chief Executive Officer

**CERTIFICATION OF CHIEF FINANCIAL OFFICER
PURSUANT TO EXCHANGE ACT RULE 13a-14(a)/15d-14(a)**

I, Luis E. Rojo, certify that:

1. I have reviewed this annual report on Form 10-K of Stepan Company;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - (a) designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - (b) designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, 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;
 - (c) evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - (d) disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - (a) all significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - (b) any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: February 27, 2020

/s/ Luis E. Rojo
Luis E. Rojo
Vice President and Chief Financial Officer

CERTIFICATION PURSUANT TO
18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Annual Report of Stepan Company (the "Company") on Form 10-K for the fiscal year ended December 31, 2019, as filed with the Securities and Exchange Commission on the date hereof (the "Report"), each of the undersigned officers of the Company certifies, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that, to such officer's knowledge:

1. The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and
2. The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company as of the dates and for the periods expressed in the Report.

Date: February 27, 2020

/s/ F. Quinn Stepan, Jr.

Name: F. Quinn Stepan, Jr.

Title: Chairman, President and Chief Executive Officer

/s/ Luis E. Rojo

Name: Luis E. Rojo

Title: Vice President and Chief Financial Officer

The foregoing certification is being furnished solely pursuant to 18 U.S.C. Section 1350 and is not being filed as part of the Report or as a separate disclosure document.