

SCHWEITZER MAUDUIT INTERNATIONAL INC
Form 10-K
March 01, 2019
UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 10-K

(Mark One)

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

For the fiscal year ended December 31, 2018

OR

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

For the transition period from _____ to _____

1-13948

(Commission file number)

SCHWEITZER-MAUDUIT INTERNATIONAL, INC.

(Exact name of registrant as specified in its charter)

Delaware

62-1612879

(State or other jurisdiction of incorporation or organization) (I.R.S. Employer Identification No.)

100 North Point Center East, Suite 600

30022

Alpharetta, Georgia

(Address of principal executive offices)

(Zip Code)

1-800-514-0186

(Registrant's telephone number, including area code)

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

Title of each class Name of each exchange on which registered

Common stock, par value \$0.10 per share 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

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

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer,"

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

Act. (Check one):

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Large accelerated filer	Accelerated filer	Non-accelerated filer	Smaller reporting company	Emerging growth company
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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

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

The aggregate market value of the outstanding common stock, par value \$0.10 per share (the "Common Stock"), of the registrant held by non-affiliates as of June 30, 2018 (the last business day of the registrant's most recently completed second fiscal quarter) was \$1.3 billion, based on the last sale price for the Common Stock of \$43.72 per share as reported on the New York Stock Exchange on said date. For purposes of the foregoing sentence only, all directors and executive officers are assumed to be affiliates.

There were 30,896,979 shares of Common Stock issued and outstanding as of March 1, 2019.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the registrant's definitive Proxy Statement relating to its 2019 Annual Meeting of Stockholders scheduled to be held on April 25, 2019 (the "2019 Proxy Statement") and filed pursuant to Regulation 14A are incorporated by reference into Part III of this Annual Report on Form 10-K.

SCHWEITZER-MAUDUIT INTERNATIONAL, INC.

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PART I.

Item 1. Business

Disclosure Regarding Forward-Looking Statements

This Annual Report on Form 10-K contains forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended. Actual results, performance or achievements could differ materially from those projected in the forward-looking statements as a result of a number of risks, uncertainties, and other factors. For a discussion of important factors that could cause our results, performance, or achievements to differ materially from any future results, performance, or achievements expressed or implied by our forward-looking statements, please refer to Part I, Item 1A "Risk Factors" and Part I, Item 7 "Management's Discussion and Analysis of Financial Condition and Results of Operations" below.

GENERAL

Background

Schweitzer-Mauduit International, Inc. (referred to, with its consolidated subsidiaries, as "we," "us," "our," the "Company," "SWM INTL" or "SWM" unless the context indicates otherwise) is a multinational producer of performance materials, including papers, nets and films headquartered in the United States of America (the "U.S."). The Company operates under two reportable segments: Advanced Materials & Structures ("AMS"), which manufactures resin-based products used in specialty applications in the filtration, infrastructure and construction, transportation, industrial, and medical end-markets, and Engineered Papers ("EP"), which produces cigarette papers and reconstituted tobacco products for cigarette and cigar manufacturers, as well as various other non-tobacco paper products.

The Company was incorporated in Delaware in 1995 as a wholly-owned subsidiary of Kimberly-Clark Corporation ("Kimberly-Clark"). On November 30, 1995, Kimberly-Clark transferred its tobacco-related paper and other paper products businesses conducted in the U.S., France and Canada to the Company and distributed all of the outstanding shares of common stock of the Company to its stockholders (the "spin-off"). As a result, the Company became an independent public company. We conduct business in over 90 countries and operate 22 production locations worldwide, with facilities in the U.S., United Kingdom, Canada, France, Luxembourg, Russia, Brazil, China, Belgium and Poland.

Our principal executive office is located at 100 North Point Center East, Suite 600, Alpharetta, Georgia 30022-8246 and our telephone number is (800) 514-0186. Our stock is traded on the New York Stock Exchange ("NYSE") under the symbol "SWM."

Strategic Transformation - Overview

Through 2013, the Company operated as a tobacco-centric paper operation. In late 2012, SWM's management and Board of Directors elected to pursue a strategic transformation by increasing profit streams outside the tobacco industry through business acquisitions, while carefully managing the profitable but mature tobacco operations. Over time, this strategy was intended to counterbalance the expected long-term pressures of the tobacco industry and transform SWM into a more diversified and growth-oriented enterprise while maintaining its company-wide focus on several underlying themes: manufacturing and innovation expertise in performance materials, operational excellence, and customer intimacy. The Company selectively targeted acquisition candidates that served diversified and growing end-markets, generated profitability associated with premium differentiated products, and had leading and defensible competitive positions in their core product categories. In addition, management believed many acquisition targets

would have unique synergy opportunities when combined with the assets and capabilities of SWM, such as a global infrastructure and a robust operational excellence program, and ultimately, synergies with other similar companies acquired by SWM.

Pursuant to this strategy, management has used free cash flow and liquidity available through our credit facility to support growth investments. From 2013 to 2018 the Company invested a total of approximately \$850 million acquiring

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three primary businesses, DelStar, Argotec, and Conwed, and making two “bolt-on” acquisitions. These businesses together now comprise the Advanced Materials & Structures segment, which generated nearly \$470 million in net sales in 2018. The combination of AMS with non-tobacco sales in our paper business, resulted in total non-tobacco sales representing 51% of the Company’s total revenue in 2018, up from approximately 6% prior to these strategic actions. The EP segment has remained the source of the majority of the Company's cash flow, enabling the growth investments in the AMS segment and supporting steadily growing dividends to shareholders; the Company has paid more than \$285 million in dividends since 2013.

Strategic Transformation - Creating the AMS Growth Platform

In December 2013, the Company acquired DelStar, Inc. (“DelStar”), a manufacturer of resin-based nets, films and non-wovens, focused on the filtration, medical, and industrial end-markets. DelStar established SWM's presence in new industries and added a portfolio of high-value technologies. Management also believed DelStar could benefit from SWM's global footprint, operational excellence program, and ability to fund growth investments.

In October 2015, the Company acquired Argotec Intermediate Holdings LLC (“Argotec”), a manufacturer of urethane films for applications primarily in the transportation end-market. A key growth driver was increasing demand for surface protection films used for automotive paint protection and glass lamination. This business also serves customers in the medical and industrial end-markets. From a technology standpoint, Argotec added to SWM's growing resin extrusion capabilities and added scale to the AMS growth platform.

In January 2017, SWM acquired Conwed Plastics LLC (“Conwed”), a producer of resin-based netting. Conwed’s similarities to the Company’s existing netting production assets presented a compelling opportunity to drive synergies through footprint rationalization, procurement, and organizational realignment. Although operationally similar to AMS’ existing assets, Conwed added further end-market diversification, with approximately 75% of Conwed’s sales serving the infrastructure and construction end-markets. The remaining 25% of sales were split between filtration and industrial end-markets, which also complemented the existing AMS business.

The acquisitions described above comprise the AMS segment. The Company believes that these businesses advance SWM's goal of diversifying its revenue stream and offer long-term growth opportunities across a broad set of attractive end-markets.

AVAILABLE INFORMATION

Our filings with the Securities and Exchange Commission ("SEC"), which filings include this Annual Report on Form 10-K, Proxy Statements, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K and all related amendments, are available, free of charge, on the SEC's website at www.sec.gov and on the Investor Relations section of our website at www.swmintl.com. Information from our website is not incorporated by reference into this Annual Report on Form 10-K. These reports are available soon after they are filed electronically with, or furnished to, the SEC. The website allows access to historical financial information, press releases and quarterly earnings conference calls, our Code of Conduct, corporate governance guidelines, Board of Directors committee charters, as well as disclosure of any amendment to or waivers of our Code of Conduct granted to any of the principal executive officer, principal financial officer or principal accounting officer. The website provides additional background information about us including information on our history, products and locations. Requests for information, requests to contact our audit committee chairman, lead non-management director or the independent directors as a group, or requests to report concerns about accounting or other issues can be made in writing and sent to the Investor Relations Department at our principal executive office address listed above.

Our quarterly earnings conference calls are typically held the morning after our quarterly earnings releases and are available through our website via a webcast. The tentative dates for our quarterly earnings conference calls related to 2019 financial results are May 9, 2019, August 8, 2019, November 7, 2019 and February 20, 2020. These dates are subject to change. Instructions on how to listen to the webcasts and updated information on times and actual dates are available through our website at www.swmintl.com.

We have provided a Glossary of Terms at the end of this Annual Report on Form 10-K.

DESCRIPTION OF BUSINESS

Segment Financial Information. We operate and manage two reportable segments based on our product lines: Advanced Materials & Structures and Engineered Papers. The Advanced Materials & Structures segment manufactures resin-based products used in specialty applications in the filtration, infrastructure and construction, transportation, industrial, and medical end-markets. This segment is comprised of the five businesses we acquired from 2013 to 2017: DelStar, the Pronamic and SNN acquisitions, Argotec and Conwed, which the Company has integrated into a more holistically aligned operating segment. Our Engineered Papers segment produces both tobacco-related papers and non-tobacco-related papers. Our tobacco-related papers, which comprise a large majority of EP's sales, include various papers used in cigarette production and reconstituted tobacco ("Recon"), a reprocessed tobacco material.

Additional information regarding "Segment Performance" is included in Part II, Item 7, Management's Discussion and Analysis of Financial Condition and Results of Operation. In addition, selected financial data for our segments is available in Note 21. Segment Information, of the Notes to Consolidated Financial Statements and a discussion regarding the risks associated with foreign operations is available in Part I, Item 1A, Risk Factors, Market Risk. In conjunction with the change in reportable segments, corresponding information for all prior periods presented has been restated to correspond to the presentation in the current year.

Financial information about foreign and domestic operations, contained under the caption "Management's Discussion and Analysis of Financial Condition and Results of Operation" appearing in Part II, Item 7 herein and in Notes 13, 14, 17 and 21 ("Restructuring and Impairment Activities," "Debt," "Income Taxes" and "Segment Information," respectively) to the Consolidated Financial Statements contained in "Financial Statements and Supplementary Data" in Part II, Item 8 herein, is incorporated by reference in this Item 1.

Advanced Materials & Structures

Products. We manufacture and sell a variety of highly engineered resin-based nets, films, and other non-wovens. These performance materials are often used in growing applications serving the filtration, infrastructure and construction, transportation, industrial, and medical end-markets. Most of our production technologies are extrusion-based, meaning resin pellets are heated, softened, and forced through a metal die to form continuous sheets or strands. We have significant technological expertise in proprietary die construction, which our competitors often outsource, and we consider this an advantage in protecting our technology and competitive position. However, unlike the EP segment which relies primarily on patent protection for key innovation protection, AMS relies more heavily on trade secrets and manufacturing "know-how."

Our thermoplastic nets are used in a variety of applications, the most prominent of which is their use as spacer netting in reverse osmosis water filtration ("RO filtration") devices. We have established a strong presence in this application by customizing products to meet demanding customer specifications, such as thickness/weight, flow characteristics, and heat and pressure resistance. Our nets are also used in a variety of other filtration applications such as fuel and hydraulic fluid filters, pharmaceutical filters, and food and beverage filters. Another key netting application is erosion and sediment control products for the infrastructure and construction end-markets. Our nets are the outside layers in erosion control blankets, which are used to prevent erosion on sloped terrain. We also produce sediment control "socks" which are used to set perimeters around various development sites to contain sediment and prevent contamination of water sources. Our nets can also be found in a variety of industrial applications such as carpet cushion support and retail food packaging.

We manufacture our thermoplastic polyurethane films ("TPU") to have combinations of the following attributes; UV, scratch and water resistance and ultra-clarity. The ability to demonstrate these rare combinations make them ideally suited for demanding transportation-related surface protection applications, primarily automotive paint protection and

security reinforced glass. These products are also used in certain niche applications such as graphics and laminated textiles in the industrial end-market, and also in the medical end-market. Other films, including apertured film products, are used in wound care applications, such as finger bandages and wound dressings for the medical end-market and are also used in specialty liquid filters for ultra-pure semiconductor manufacturing processes.

Our non-wovens are typically air-laid resin-based materials often used in liquid filtration and residential and commercial air filtration. In addition to rolled goods, SWM also manufactures rigid core tubing, an extruded resin product that also is primarily used in reverse osmosis water filtration devices, and flexible tubing used in various medical and industrial applications.

With the growth of our AMS division, our technical expertise around resin-based materials is increasing. We believe we have industry-leading innovation capabilities and an expanding product portfolio which we expect to support growth through collaborative product development opportunities with our customers.

Markets and Customers. The AMS segment supplies customers serving the filtration, infrastructure and construction, transportation, medical, and industrial end-markets. Generally, the applications and customers the AMS segment serves are in growing end-markets, and as a percentage of total AMS segment sales are as follows: filtration - 25%, infrastructure and construction - 30%, transportation - 25%, medical - 10%, industrial - 10%. These products are highly engineered and often customized. In some cases, we are the sole supplier of certain products to our top customers, though no customer represents more than 10% of our consolidated net sales.

Within the filtration end-market, reverse osmosis water filtration has exhibited historical long-term growth due to increasing global demand for drinkable water and we expect global infrastructure investments in this area to continue long-term. Our other filtration products are often used in the food and beverage industries and heavy equipment and machinery used in the oil and gas industries, filtering fuel and other hydraulic liquids, as well as serving other functions in the exploration, processing, and transport of oil, gas, and metals. We refer to non-RO liquid filtration products generally as process filtration. While sales of process filtration products, particularly those used in the oil, gas, and mining sectors, can be subject to cyclicity and commodity price volatility, we expect strong long-term demand across the product line.

Our sales to the infrastructure and construction end-market are largely comprised of erosion/sediment control products. Our netting is used in the production of erosion control blankets, which are used in highway development projects to cover roadside slopes during and after construction until vegetation has stabilized the ground. This is a primarily U.S. business, with expected growth supported by continued highway infrastructure investments. We also offer customers a unique sediment control solution, a filled “sock”, used to seal perimeters of development sites which could contain harmful contaminants. This product has gained adoption in the oil and gas exploration and production industry, and also has potential to displace legacy competitive products such as silt fence, which is often used to surround various construction sites to control sediment. In the construction segment, our netting products are used as support material for carpet cushion, construction materials protection, and support backing for sod production.

The majority of our TPU films are used in transportation-related surface protection applications, specifically automotive paint protection. This product is typically sold and installed in the after-market through dealerships or auto body shops. Recently, we have benefited from global adoption of paint protection films, particularly in Asia. Other surface protection applications, such as ballistic-resistant and security glass used primarily on vehicles can be impacted by government and military contracts. These films are also used in commercial architectural glass.

Our industrial applications are spread across a variety of other industries, such as apparel, food manufacturing, graphics and energy, while our medical film products largely serve the wound care management area of the medical end-market.

Sales and Distribution. AMS products are primarily sold by the marketing, sales and customer service organizations of our AMS operations directly to manufacturers, however, in some geographic regions, we use sales agents to assist us in the sales process. As part of our enterprise transformation and integration efforts related to our recently acquired companies, we re-branded the acquired companies and transitioned our AMS sales operations toward a more unified organization. All acquired companies have been re-branded as SWM and the AMS sales organization will operate and

go to market under the SWM trade name, with sales resources deployed by end-market and focused on selling products from across the totality of AMS offerings.

We typically deliver our products to customers by truck, rail and ocean-going vessels. As is typical in the industries in which we operate, ownership of the product generally transfers to our customer upon shipment from our manufacturing

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facilities, except for certain export sales where ownership typically transfers at the foreign port or customer facility. In certain instances, we produce and hold or consign products for a limited number of customers for which title does not transfer until shipment from our manufacturing facility or the products are used by the customer. In these instances, we recognize revenue related to these products when control of the product transfers to the customer.

Competition. Our AMS products are typically leaders in their respective categories and compete against specialty products made by competitors such as Marshall Manufacturing Company, Johns Manville, a subsidiary of Berkshire Hathaway Inc., Shaoxing Naite Plastics Co. Ltd., 3M Company, Covestro AG, Tenax Corporation, Intermas Group, and Hollingsworth and Vose Company. We believe our AMS products compete primarily on product features, innovations and customer service across the end-markets we serve. Of the end-markets we serve, industrial is generally the most price competitive due to a higher portion of commodity-type products that we often sell in order to maximize our machine utilization.

Raw Materials and Energy. The primary raw material used in our AMS products is plastic resin, and we rely on a variety of commodity grade and specialty resins, including polypropylene, polyurethane, polyethylene, polyamide (nylon) and a selection of specialized high temperature engineering grade resins. Our thermoplastic nets and apertured films are produced using a blend of specialty resins and commodity grade resins like polypropylene. Resin prices can fluctuate significantly and can impact profitability. Commodity grade resin prices typically correlate with crude oil prices while specialty resin prices often do not. Our TPU films are produced using specialty resins which are significantly more expensive than commodity grade resins.

We have multiple sources for most of our resin needs. However, some of our specialty resins are supplied by fewer manufacturers. We believe that our purchased raw materials are generally available from several sources and that the loss of a single supplier would not likely have a material adverse effect on our ability to procure needed raw materials from other suppliers. Our total resin purchases in 2018 and 2017 totaled \$143 million and \$129 million, respectively.

The majority of our energy requirements relate to electricity in the U.S. We consider this to be a relatively stable energy source.

Backlog and Seasonality. In the AMS segment, customer orders are generally manufactured and shipped within 30 days or, in certain instances, within three months. Sales of our products within AMS are generally not subject to large seasonal fluctuations: however, we would expect the second and third quarters to be relatively stronger than the first and fourth quarters. As of December 31, 2018 and 2017, the AMS segment order backlog was approximately \$65 million and \$71 million, respectively.

Engineered Papers

Products. Our EP segment produces both tobacco-related and non-tobacco-related papers. Our tobacco-related papers include various papers used in cigarette production and reconstituted tobacco ("Recon"), a reprocessed tobacco material, and comprise a large majority of EP's sales.

One of our key cigarette paper products is low ignition propensity ("LIP") cigarette paper. LIP cigarettes are designed to self-extinguish when not actively being smoked, thus offering a fire-safety feature. The U.S., the European Union ("E.U."), and several other smaller jurisdictions have mandated the use of LIP papers. Our solutions pioneered this cigarette paper category, and we remain a leader in this cigarette paper sub-segment through either direct sales or through licensing agreements. The Company maintains an extensive and active intellectual property portfolio.

Recon is another key component of EP's total sales and profits. The most significant of our Recon products is reconstituted tobacco leaf, ("RTL" or "traditional RTL"), which cigarette manufacturers often blend with virgin tobacco to achieve certain attributes in cigarettes, such as taste or reduced delivery of tar, nicotine, or other tobacco-related

smoking constituents. Historically, the production of RTL has often been a cost-effective use for tobacco leaf scraps, though virgin leaf price and inventory supply conditions can shift the relative attractiveness of our products. We also produce a similar line of Recon products referred to as wrappers and binders for use in machine-made cigars. Recently, a new generation of tobacco industry products generally referred to as Heat not Burn (“HnB”) have been introduced into the

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marketplace with a goal of reducing harmful effects of smoking. We generated commercial sales in 2018, and continue to develop products to meet potential demand should global consumer adoption gain momentum and the technology gains support from appropriate regulatory authorities.

Our non-tobacco paper products include a mix of lightweight papers including low-volume, high-value, engineered materials such as alkaline battery separator papers, as well as high-volume commodity paper grades for printing and writing, flooring laminates, and food service packaging, which are intended to maximize machine utilization. We intend to make continued diversification investments in our EP segment to broaden our offerings, utilize existing machine capacity, and/or further monetize our paper making and reconstitution technologies.

Our wet-laid paper making technologies can be broadly classified into two main production processes: flat-wire production and incline-wire production. Generally, our machines are flat-wire, meaning a liquid slurry of short pulp fibers and water are laid onto flat-wire conveyor belts, with the water draining through the wire as the fibers (wood, flax, tobacco, etc.) bond together to form a paper sheet. Incline-wire machines allow for increased drainage, enabling the use of longer fibers which bond into a more open web, increasing the porosity. Incline wire machines are typically associated with higher-value products given this added porosity, which is important in filtration and other specialty applications that tend to justify premium pricing.

The Company continues to focus resources on innovation through activities in our OneFiber lab where paper customers can work closely with our technologists to develop improved paper-based products and our LeafLab fiber reconstitution incubator at our facility in France. Our reconstitution technologies have potential to be utilized in products serving the cosmetics and packaging industries reprocessing botanical, vegetable, or other plant fibers. Furthermore, SWM's Recon technologists are active in joint development with several cigarette manufacturers to drive continued innovation and product commercialization in the rapidly emerging Heat not Burn tobacco product area.

Markets and Customers. Our EP segment is heavily influenced by global smoking trends, particularly in the U.S., the E.U. (both LIP markets), and Brazil where we have the majority of our operations and highest share of the category's volume. Historically, mature geographic regions, such as the U.S. and the E.U. have exhibited a steady decline in smoking rates, often to the low-to-mid single digits. Overall, approximately 88% of EP segment sales are to customers in the tobacco end-market, with the majority of tobacco sales comprised of cigarette papers, and approximately 12% of EP segment sales are related to a variety of non-tobacco customers and applications.

We supply the major, and many of the smaller, cigarette and cigar manufacturers. We sell our products directly to the major tobacco companies or their designated converters in the Americas, Europe, Asia and elsewhere. Philip Morris-USA, a subsidiary of Altria Group Inc., Philip Morris International ("PMI"), Japan Tobacco Inc. ("JT"), and British American Tobacco ("BAT"), are our four largest customers and, together with their respective affiliates and designated converters, accounted for 28%, 31% and 35% of our 2018, 2017 and 2016 consolidated net sales, respectively. Although the total loss of one or more of these large customers could have a material adverse effect on our results of operations, we do not believe that such a loss is likely given our significance in the worldwide supply chain of cigarette-related papers.

Sales and Distribution. Our internal marketing, sales and customer service organizations sell most of our tobacco-related products directly to cigarette manufacturers or their designated converters. Most of our EP segment's non-tobacco related products are sold directly to manufacturers. In some geographic regions, we use sales agents. We do not sell our products directly to consumers or advertise our products in consumer media. We typically deliver our products to customers by truck, rail and ocean-going vessels. As is typical in our industry, ownership of the product generally transfers to our customer upon shipment from our plants, except for certain export sales where ownership typically transfers at the foreign port or customer facility.

Competition. The specialized nature of tobacco-related papers requires unique papermaking equipment, technical expertise, and research and development capabilities to meet exacting customer specifications. These factors have limited the number of competitors capable of servicing global cigarette manufacturers.

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As the sole domestic producer of cigarette papers in North America and Latin America (SWM production in Brazil), we believe that we have a significant majority of the category share in those regions. Our paper plants in France and LIP printing facility in Poland sell a large amount of their products in the E.U. We estimate that we have a direct share of more than 40% of cigarette paper sales in the E.U., and coupled with royalty payments from a key competitor to whom we have licensed our LIP technology, we believe we are able to monetize over 80% of the LIP-compliant E.U. cigarette market. Our principal competitors include delfortgroup AG ("delfort"), which licenses our LIP technology, Miquel y Costas & Miquel S.A. ("Miquel y Costas"), Julius Glatz GmbH ("Glatz") and PT Bukit Muria Jaya ("BMJ"). In December 2017, the Dusseldorf Court of Appeals affirmed the German District Court judgment of patent infringement against Glatz including an injunction against making and selling LIP cigarette paper. We believe that the basis of cigarette and our non-tobacco papers competition is price, consistent quality, security of supply, and level of technical service.

Outside of China, SWM is the only non-cigarette company that produces RTL through a paper-making process. Some cigarette companies such as Philip Morris-USA, British American Tobacco, JT and STMA (China) produce RTL primarily for their own internal use. Our customers' cigarette blending decisions, which affect our traditional RTL sales volumes, can be influenced by worldwide virgin tobacco prices and availability as well as the general attractiveness of various competing in-house Recon products. Huabao International Holdings Ltd, a Hong Kong company, produces Recon in China. We believe that the basis of competition in this geographic region is primarily quality and price. Similarly, for HnB products, we believe we are the only non-cigarette manufacturer with production capabilities.

Raw Materials and Energy. Wood pulp is the primary fiber used in our EP segment. Our operations consumed approximately \$54 million and \$42 million of wood pulp in the years ended December 31, 2018 and 2017, respectively, all of which we purchased. While EP uses other specialty fibers, such as flax, in our operations, we believe that purchased raw materials are generally available from several sources.

Paper production uses significant amounts of energy, primarily electricity, natural gas and fuel oil. We believe that energy supply is generally reliable throughout our manufacturing footprint, although prices can fluctuate significantly based on demand. We enter into agreements to procure a portion of our energy requirements for future periods in order to reduce the uncertainty of future energy costs. We also have a sustainability program focused on reducing our impact on the environment.

Additional information regarding agreements for the supply of certain raw materials and energy is included in Note 20. Commitments and Contingencies, of the Notes to Consolidated Financial Statements.

Backlog and Seasonality. While our U.S., Polish and Brazilian EP operations do not calculate or maintain records of order backlogs, we typically receive forecasts of future demands from certain larger customers which are used to manage production and ensure sufficient supply of paper products. Our French paper operations order backlog was approximately \$27 million and \$34 million on December 31, 2018 and 2017, respectively. Paper orders are typically received and shipped within a 30-day period. The RTL business operates predominately under a number of annual supply agreements. The order backlog for RTL was approximately \$92 million and \$100 million on December 31, 2018 and 2017, respectively, and is typically filled within one fiscal year.

Generally, sales of our paper and Recon products are subject to seasonal fluctuations due to periodic machine downtime and typically lower order volumes in the fourth quarter.

Research and Development

As of December 31, 2018 we employ approximately 93 research and development employees in research and laboratory facilities in France, Brazil, Poland, and the U.S. We are dedicated to developing product innovations and improvements to meet the needs of individual customers. We believe that our research and product development capabilities have played an important role in establishing our reputation for high quality, superior products in both our AMS and EP segments. Within AMS, we have a history of finding innovative design solutions, including developing products that improve the performance of customers' products and manufacturing operations. We believe that our commitment to research and development, coupled with our investment in new technology and equipment, has positioned us to take advantage of growth opportunities in many places around the world. Within EP, our research and development has enabled us to establish and sustain leading shares in various cigarette paper products, specifically LIP paper. We also are working with customers to meet potential future demand for reduced-harm tobacco products.

Patents and Trademarks

As of December 31, 2018, we owned 38 patents and had 52 pending patent applications in our AMS segment. While we consider our patents, and the protection thereof, to be important, no single patent or group of patents is material to the conduct of our AMS business segment.

In our AMS segment, as described in the branding initiative discussed above, SWM made a strategic decision to transition away from certain legacy business trade names associated with our recent acquisitions in favor of a streamlined SWM enterprise branding approach. Thus, in 2016, the Company recognized an impairment of our DelStar trade name asset as further described in Note 11. Intangible Assets, of the Notes to Consolidated Financial Information. The Company will continue to market its products under the long-standing product-level brand names and trademarks such as "NALTEX®," "DELNET®," "ARGOGUARD®" and "ARGOTHANE®."

As of December 31, 2018, we owned 234 patents and had 110 pending patent applications in our EP segment, covering a variety of cigarette papers, RTL, cigar wrapper and binder and other products and processes in the U.S., Western Europe and several other countries. We believe that our patents, together with our papermaking expertise and technical sales support, have been instrumental in establishing us as the leading worldwide supplier of cigarette papers. We believe that patents have contributed to our position as the world's leading independent producer of papers used for LIP cigarettes.

Management believes that in the EP segment, our "ALGINEX®" water-based technology trademark, our "GLUCIGEN™" trademark for use in banded papers for the production of LIP cigarettes, and the "SWM" logo and trade names have been important contributors to the marketing of our products. Further, we have developed, individually or in conjunction with customers, technologies to address the demand for cigarette paper for LIP cigarettes in the U.S., Canada, Australia and the E.U. We have licensed to others the right to use certain of our LIP intellectual property, excluding ALGINEX® related intellectual properties.

Management of a large portion of SWM's research and development activities is provided from our Luxembourg City, Luxembourg operation ("SWM Luxembourg"). These activities are often performed at other SWM locations under contract by SWM Luxembourg, and funded by SWM Luxembourg. SWM Luxembourg has the authority to initiate and manage research and development projects in areas such as, but not limited to, LIP paper, Recon for heat-non-burn devices, netting and other extruded resin products, and our non-tobacco products unit (Advanced Fibers and Materials). This operation also provides global oversight and active management for much of the Company's intellectual property rights.

Employees

As of December 31, 2018, we had approximately 3,500 regular, full-time, active employees.

North American Operations. Hourly employees at the Spotswood, New Jersey, Ancram, New York and Minneapolis, Minnesota plants are represented by locals of the United Steel Workers Union. The two-year collective bargaining agreement with hourly employees at our Spotswood plant is effective through July 28, 2020. The three-year collective bargaining agreement with employees at our Ancram plant is effective through September 30, 2020. The three-year collective bargaining agreement with hourly employees at our Minneapolis facility is effective through October 31, 2020. We believe employee and union relations continue to be positive at the Spotswood, Ancram and Minneapolis operational facilities.

Our operations in Canada, South Carolina, Massachusetts, and the former DelStar and Conwed facilities, other than Minneapolis, are non-union. We believe that employee relations are positive.

French Operations. Hourly employees at our Quimperlé, Spay, and Saint-Girons, France plants are union represented. We believe that employee relations in France are positive.

Luxembourg Operations. Employees at our Luxembourg office are non-union. We believe that employee relations in Luxembourg are positive.

Brazilian Operations. Hourly employees at the Pirahy, Brazil plant are represented by a union. The one-year collective bargaining agreement with employees at SWM-B is effective through May 31, 2019. We believe that employee relations are generally positive and comparable to those of other similarly situated Brazilian manufacturing operations.

Polish Operations. Employees at our Strykow, Poland facility are non-union. We believe that employee relations in Poland are positive.

Chinese Operations. Employees at our Suzhou, China facility are non-union. We believe that employee relations in China are positive.

English Operations. Some hourly employees at our Gilberdyke, England facility are represented by a union. We believe that employee relations in England are positive.

Belgium Operations. Employees at our Genk, Belgium facility work in accordance with Belgium labor regulations. We believe that employee relations in Belgium are positive.

Environmental Matters

Capital expenditures for environmental controls to meet legal requirements and those relating to the protection of the environment at our facilities in the U.S., United Kingdom, France and Brazil were \$1.0 million in 2018, no material amount of which was the result of environmental fines or settlements. We expect such expenditures to be \$1.0 million or less in each of the next two years, of which no material amounts are expected to be the result of environmental fines or settlements. Should the Company make material changes in the operations at a facility, it is possible such changes could generate environmental obligations that might require remediation or other action, the nature, extent and cost of which are not presently known. These expenditures are not expected to have a material adverse effect on our financial condition, results of operations or competitive position; however, these estimates could be modified as a result of changes in our plans, changes in legal requirements or other factors.

Working Capital

We normally maintain approximately 50 to 90 days of inventories to support our operations. Our sales terms average between 15 and 60 days for payment by our customers, dependent upon the products and market segment served. With respect to our accounts payable, we typically carry approximately 15 to 40 days outstanding, in accordance with our

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purchasing terms, which vary by business location. The accounts payable balance varies in relation to changes in our manufacturing operations, particularly due to changes in prices of wood pulp, resins and purchased energy and the level and timing of capital expenditures related to projects in progress.

Executive Officers of the Registrant

The names and ages of our executive officers as of March 1, 2019, together with certain biographical information, are as follows:

Name	Age	Position
Dr. Jeffrey Kramer	58	Chief Executive Officer
R. Andrew Wamser	45	Executive Vice President, Finance and Chief Financial Officer
Michel Fievez	61	Executive Vice President, Engineered Papers
Daniel Lister	46	Executive Vice President, Advanced Materials & Structures
Ricardo Nunez	54	General Counsel and Corporate Secretary
Robert Cardin	55	Corporate Controller

There are no family relationships between any of the directors, or any of our executive officers. None of our officers were selected pursuant to any arrangement or understanding between the officer and any person other than the Company. Our executive officers serve at the discretion of the Board of Directors and are elected annually by the Board.

Dr. Jeffrey Kramer was appointed Chief Executive Officer in May 2017, after serving as Co-Chief Executive Officer since March 2017. Prior to joining SWM, Dr. Kramer served as Vice President, Lubricants of Brenntag AG, a distributor of chemicals, from January 2016. Dr. Kramer previously served as President and Chief Executive Officer of J.A.M. Distributing Company from January 2013 through December 2015. J.A.M. Distributing Company is a distributor of high-performance lubricants and fuels. Dr. Kramer previously held various senior positions at Air Products and Chemicals, Inc., an industrial gases company, including Vice President and Chief Technology Officer from June 2012 through December 2012 and Vice President and General Manager, Packaged Gases, from 2005 through June 2012.

R. Andrew Wamser was appointed Co-Chief Financial officer on February 5, 2018 and, effective March 2, 2018, became the sole Executive Vice President, Finance and Chief Financial Officer and the Company's Principal Financial Officer. Prior to joining SWM, Mr. Wamser served as Vice President, Finance; Investor Relations and Treasurer of AutoNation, Inc., the largest automotive retailer by revenue in the US. Prior to that Mr. Wamser served as Managing Director, Investment Banking; Diversified Industrial Group of Barclays Capital Plc, now known as Barclays Investment Bank, the investment banking division of Barclays PLC. He also previously held other investment banking roles at Barclays Capital and UBS Investment Bank.

Michel Fievez was appointed Executive Vice President, Engineered Papers in December 2014. He previously held the title of Executive Vice President, Reconstituted Tobacco at the Company since March 2010. Prior to that, he held the position of President - European Operations from June 2007 to March 2010. From 2003 to May 2007, Mr. Fievez served as General Manager One Side Coated Papers and then Vice President and General Manager Packaging, Metalizing and Office and Graphic with Ahlstrom Corporation, a fiber-based materials company. From 1998 to 2003, he held key management positions, including Managing Director, with Chesapeake Display and Packaging in Europe, and from 1994 to 1998, held the position of Vice President Manufacturing and Technology with Mead Packaging Europe. Before that, he worked for five years as Associate and Engagement Manager with McKinsey & Company.

Daniel Lister was appointed Executive Vice President, Advanced Materials & Structures on July 5, 2016. Mr. Lister joined SWM from Greif, Inc., a global leader in industrial packaging and services, where he worked since 2005. From 2009 to 2016 Mr. Lister held key international roles including, Vice President, Middle East Development and Division

President and CEO of Greif Flexible Products & Services, a Joint Venture with the Al Dabbagh Group. Prior to his international assignments, Mr. Lister led key businesses in North America. Mr. Lister worked for The Dow Chemical Company from 2001 to 2005 where he held several commercial strategy, business growth, and business management roles.

Ricardo Nunez was appointed Senior Vice President, General Counsel and Corporate Secretary in September 2017, after serving as Interim General Counsel since November 2016. Prior to joining SWM, Mr. Nunez served as General Counsel for Vivex Biomedical, Inc. a Marietta, GA based biologics company from April 2015 to July 2016. Prior to that, he served as SVP, General Counsel and Corporate Secretary for HD Supply, Inc. a spinoff from The Home Depot from March 2007 to April 2015. Mr. Nunez's previous experience also includes senior legal responsibilities at The Home Depot, General Electric, and Esso Inter-America, Inc. (the Latin America affiliate of Exxon Corporation), as well as private practice.

Robert Cardin has served as Corporate Controller since November 2013. Previously, Mr. Cardin served as Controller for Syncreon International Group, a specialized provider of integrated logistics services to global industries, since 2011. Prior to that time he was employed by DENTSPLY International Inc., a worldwide manufacturer of dental products, as Assistant Corporate Controller from 2010 to 2011 and as Group Controller - Dental Consumables Business from 2004 to 2010.

Item 1A. Risk Factors

Factors That May Affect Future Results

Many risk factors both within and outside of our control could have an adverse impact on our business, financial condition, results of operations and cash flows and on the market price of our common stock. While not an exhaustive list, the following important risk factors could affect our future results, including our actual results for 2018 and thereafter and could also cause our actual results to differ materially from those expressed in any forward-looking statements we have made or may make.

We expect our business to continue to be adversely impacted by governmental actions relating to tobacco products, as well as by decreased demand for tobacco products due to declining social acceptance of smoking, new smoking technologies, and litigation in the U.S. and other countries.

In 2018, approximately 49% of our net sales were from products used by the tobacco industry in making cigarettes or other tobacco products. Cigarette consumption outside of Asia has generally declined due to, among other things, the diminishing social acceptance of smoking, public reports with respect to the possible harmful effects of smoking, including effects of second-hand smoke, the use of other tobacco products, the development and use of new tobacco-related or substitute products or technologies, such as e-cigarettes, that do not use our products, and, particularly in the U.S., to litigation and actions on the part of private parties to restrict smoking. For instance, litigation is continuing against major U.S. manufacturers of consumer tobacco products seeking damages for health problems allegedly resulting from the use of tobacco in various forms. It is not possible to predict the outcome of such litigation or the effect adverse developments in pending and future litigation may have on the tobacco industry or its demand for our products, but in the past litigation has adversely affected demand for consumer tobacco products. These factors have led, and could lead, to certain merchants deciding not to sell tobacco products. As a result, the overall demand for conventional tobacco cigarettes outside of Asia has generally been declining in terms of volume of sales. These declines have had an adverse effect on demand for our products in these regions. We expect these trends to accelerate and thus to continue to reduce smoking levels and adversely affect demand for our products, which could have a material adverse impact on our future financial condition, results of operations and cash flows.

In recent years, governmental entities around the world, particularly in the U.S., Brazil, Russia, Australia and Western Europe, have taken, or have proposed, actions that had, or are likely to have, the effect of reducing consumption of tobacco products which, in turn, reduces demand for our products. These actions, including efforts to regulate, restrict or prohibit the sale, advertisement and promotion of tobacco products and their components, to limit smoking in public places, to control or restrict additives that may be used in tobacco products and to increase taxes on such products, are intended to discourage the consumption of cigarettes and other tobacco products. For example, in the U.S., the regulatory jurisdiction of the federal Food and Drug Administration was extended in 2009 to include tobacco products, and again in 2016 to include cigars and additional tobacco products. These products are now subject to product component disclosure regulations, new controls on ingredients and design changes, and additional restrictions relating to marketing and labeling. The federal Food and Drug Administration could promulgate additional regulations. In Brazil, regulations limit the use of additives to cigarettes. In the E.U., the Tobacco Products Directive regulates the content, effects, marketing and labeling of tobacco products, and both revisions to the Directive and the ongoing phase-in of the Registration, Evaluation, Authorization, and Restriction of Chemical Substances regulation ("REACH") may further restrict product ingredients. Additionally, the World Health Organization is actively promoting tobacco regulation, and other countries worldwide are in the process of adopting some or all of these restrictions. It is not possible to predict the additional legislation or regulations relating to tobacco products that may be instituted, or additional countries that may adopt such legislation or regulations, or the extent to which such legislation or regulations may impact the design or formulation of our customers' products. Such legislation or regulation may adversely impact the demand for traditional cigarettes and cigars, with corresponding impacts on our sales of cigarette papers, RTL and associated items, which could have a material adverse effect on our future financial

condition, results of operations and cash flows.

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Our joint ventures in China serve only the local market. Declines in Chinese cigarette consumption could have a material adverse effect on our future financial condition, results of operations and cash flows, including our China Tobacco Schweitzer (Yunnan) Reconstituted Tobacco Co. Ltd. (“CTS”) and China Tobacco Mauduit (Jiangmen) Paper Industry Ltd. (“CTM”) joint ventures.

Our technological advantages are unlikely to continue indefinitely.

We consider our intellectual property and patents to be a material asset. We have been at the forefront of developing new products and technology within our industries and have patented several of our innovations, particularly with regard to cigarette paper used to produce LIP cigarettes. This has enhanced our ability to sell products and to provide added functionality and other value to the products we sell allowing them to command higher margins. This advantage has also enabled us to license certain of our patents and know-how to, and earn royalty income from, third parties. Ultimately, our patents will expire (generally before 2023) and some may be held invalid in certain jurisdictions before their expiration dates. In addition to protecting certain of our technological advantages through patenting, we also protect a significant amount of our technological advantages as trade secrets, especially with regard to our AMS segment and our RTL products. As we expand our operations to more locations and countries, the risk of the loss of proprietary trade secrets will increase, and any significant loss would result in the loss of the competitive advantages provided by such trade secrets. While we cannot predict the impact or the timing of these trends and eventualities, they likely will reduce our sales and margins from the levels that we otherwise would have achieved.

Effectively policing our domestic and international intellectual property and patent rights is costly and may not be successful.

Our portfolio of granted patents varies by country, which could have an impact on any competitive advantage provided by patents in individual countries. We cannot guarantee that any U.S. or foreign patent, issued or pending, will provide us with any continued competitive advantage.

We rely on patent, trademark, and other intellectual property laws of the U.S. and other countries to protect our intellectual property rights. However, we cannot guarantee that one or more of our patents will not be challenged by third parties and/or ultimately held invalid by courts or patent agencies of competent jurisdiction, which could remove the legal barriers preventing competitors from practicing our LIP technology among others.

Further, there can be no assurances that we will be able, or that it will be economic for us, to prevent third parties from using our intellectual property or infringing our patents without our authorization, which may reduce any competitive advantage we have developed. In the event that we need to enforce certain of our patents against infringement through judicial or administrative actions, the litigation to protect these rights is often costly and time consuming and diverts management resources; moreover, there can be no assurance that our efforts to protect our intellectual property will be successful, or that a defendant will not assert counterclaims against us or challenges to other intellectual property we may own.

Some of our patents have been the subject of opposition hearings. Like the actions we undertake to enforce our IP rights, oppositions filed against us in respect of our intellectual property are expensive and divert management time and resources.

Even when the Company is initially successful, there can be no assurance that the counterparty will not appeal, or that the appeal will not be successful. Even when successful at the appeal level, as with respect to patents such as EP 1,482,815 (relating to a low-viscosity polymers to print LIP bands), there can be no assurance that a patent will not be later successfully challenged in individual national court jurisdictions.

We do not believe that any of our products infringe the valid intellectual property rights of third parties. However, we may be unaware of intellectual property rights of others that may cover some of our products or services or a court or other governmental body may come to a different conclusion from ours. In that event, we may be subject to significant claims for damages or disruptions to our operations.

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Because of the geographic diversity of our business, we are subject to a range of international risks.

Our operations are located in many countries around the world and operate, to a degree, in a decentralized manner. There are inherent control and fraud risks in such a structure. Moreover, we have manufacturing facilities in eight countries and two joint ventures in China and sell products in over 90 countries, many of which are emerging and undeveloped markets.

As a result, our manufacturing operations, sales and results, depending on their location, are subject to various international business risks, including, but not limited to, the following:

Foreign countries can impose significant import, export, excise and income tax and other regulatory restrictions on our business, including limitations on repatriation of profits and proceeds of liquidated assets. While we attempt to manage our operations and international movements of cash from and amongst our foreign subsidiaries in a tax-efficient manner, unanticipated international movement of funds due to unexpected changes in our business or changes in tax and associated regulatory schemes could materially affect our financial position, results of operations and cash flows.

We are exposed to global as well as regional macroeconomic and microeconomic factors, which can affect demand and pricing for our products, including: unsettled political and economic conditions, including as they relate to Brazil, Russia and the Ukraine; expropriation; import and export tariffs; regulatory controls and restrictions; and inflationary and deflationary economies. These factors together with risks inherent in international operations, including risks associated with any non-compliance with the U.S. Foreign Corrupt Practices Act, the 2013 Brazilian Clean Companies Act, the U.K. Bribery Act of 2010, the 2013 Russian Law on Preventing Corruption and other non-U.S. anti-bribery law compliance, could adversely affect our financial condition, results of operations and cash flows.

We participate in two joint ventures and have one manufacturing facility in China. The joint ventures sell our products primarily to Chinese tobacco companies. Operations in China entail a number of risks including international and domestic political risks, the need to obtain operating and other permits from the government, adverse changes in the policies or in our relations with government-owned or run customers and the uncertainty inherent in operating within an evolving legal and economic system. There are also risks inherent with 50% joint ventures, such as a lack of ability to control, and visibility with respect to operations, customer relations and compliance practice, among others.

Changes or increases in international trade sanctions or quotas may restrict or prohibit us from transacting business with established customers or securing new ones, including as to Russia and the Ukraine, which are areas where the Company has offices and/or significant customers and as to which the applicable sanctions have changed unexpectedly on a number of occasions since 2014.

Changes in the laws and regulations described above, adverse interpretations or applications of such laws and regulations, and the outcome of various court and regulatory proceedings, including in Europe and Brazil, could adversely impact the Company's business in a variety of ways, including increasing expenses, increasing liabilities, decreasing sales, limiting its ability to repatriate funds and generally limiting its ability to conduct business, all of which could adversely affect our financial condition, results of operations and cash flows.

New tariffs and other trade measures could adversely affect our consolidated results of operations, financial position and cash flows.

In 2018, the Trump Administration imposed tariffs on steel and aluminum and a broad range of other products imported into the U.S. In response to the tariffs imposed by the U.S., the European Union, Canada, Mexico and China have announced tariffs on U.S. goods and services. The new tariffs, along with any additional tariffs or trade restrictions that may be implemented by the U.S. or retaliatory trade measures or tariffs implemented by other

countries, could result in higher manufacturing costs and increased prices for our products, and we may not be able to pass the higher

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manufacturing costs and price increases on to our customers. Through our joint venture partners, we also manufacture certain EP products in China. While sales of our products manufactured in China are currently sold only in local markets, any exports of our products manufactured in China to the U.S. may also be impacted by the tariffs and other restrictions on trade between the U.S. and China. While tariffs and other retaliatory trade measures imposed by other countries on U.S. goods have not yet had a significant impact on our business or results of operations, we cannot predict further developments, and such existing or future tariffs could have a material adverse effect on our consolidated results of operations, financial position and cash flows.

We may be adversely affected by recent developments relating to the U.K.'s referendum vote in favor of leaving the European Union, particularly if the U.K. and the European Union are unable to reach a mutually satisfactory exit agreement before the current deadline of March 29, 2019.

The U.K. held a referendum in 2016 in which a majority voted for the U.K.'s withdrawal from the European Union, which is commonly referred to as "Brexit." As a result of this vote, the U.K. and the European Union are negotiating to determine the terms of Brexit and their relationship going forward. The effects of the Brexit vote and the perceptions as to the impact of the withdrawal of the U.K. from the European Union may adversely affect business activity and economic and market conditions in the U.K., the Eurozone, and globally and could contribute to instability in global financial and foreign exchange markets, including volatility in the value of the pound sterling and the euro. For example, since the Brexit vote, the value of the pound sterling has incurred significant fluctuations. If the value of the pound sterling continues to incur similar fluctuations, unfavorable exchange rate changes may negatively affect our operations located in the U.K., which may impact the revenue and earnings we report. In addition, if no formal agreement is made between the European Union and the U.K. prior to the deadline for the U.K.'s exit, which is currently set for March 29, 2019, continued deflation of the pound sterling could result. Any of these effects could have an adverse impact on the value of our assets in the U.K., as well as our business, financial condition, results of operations and cash flows.

We are subject to the U.S. Foreign Corrupt Practices Act and other anti-corruption laws or trade control laws, as well as other laws governing our operations. If we fail to comply with these laws, we could be subject to civil or criminal penalties, other remedial measures, and legal expenses, which could adversely affect our business, financial condition and results of operations.

We are subject to anti-corruption laws, including the U.S. Foreign Corrupt Practices Act, or FCPA, and other anti-corruption laws that apply in countries where we do business. The FCPA, the 2013 Brazilian Clean Companies Act, the U.K. Bribery Act of 2010, the 2013 Russian Law on Preventing Corruption and these other laws generally prohibit us, our employees, consultants and agents from bribing, being bribed or making other prohibited payments to government officials or other persons to obtain or retain business or gain some other business advantage. We operate in a number of jurisdictions that pose a high risk of potential FCPA violations, and we participate in joint ventures and relationships with third parties whose actions could potentially subject us to liability under the FCPA or local anti-corruption laws. In addition, we cannot predict the nature, scope or effect of future regulatory requirements to which our international operations might be subject or the manner in which existing laws might be administered or interpreted.

We are also subject to other laws and regulations governing our international operations, including regulations administered by the U.S. Department of Commerce's Bureau of Industry and Security, the U.S. Department of Treasury's Office of Foreign Asset Control, and various non-U.S. government entities, including applicable export control regulations, economic sanctions on countries and persons, customs requirements, currency exchange regulations and transfer pricing regulations, or collectively, Trade Control laws.

However, there is no assurance that we will be completely effective in ensuring our compliance with all applicable anti-corruption laws, including the FCPA or other legal requirements, including Trade Control laws. If we are not in compliance with the FCPA and other anti-corruption laws or Trade Control laws, we may be subject to criminal and civil penalties, disgorgement and other sanctions and remedial measures, and legal expenses, which could have an adverse impact on our business, financial condition, results of operations and liquidity. Likewise, any investigation of any potential violations of the FCPA other anti-corruption laws or Trade Control laws by U.S. or foreign authorities

could also have an adverse impact on our reputation, business, financial condition and results of operations.

Fluctuations in foreign currency exchange rates could adversely impact our financial condition, results of operations and cash flows.

A significant portion of our revenues are generated from operations outside the U.S. In addition, we maintain significant operations and acquire or manufacture many of our products outside the U.S. The functional currency of our international subsidiaries is generally the local currency in which each subsidiary operates. In particular, a large portion of our commercial business is denominated in euros and Brazilian reals. Our consolidated financial statements are presented in U.S. dollars. Therefore, we must translate revenues, expenses, assets and liabilities from functional currencies into U.S. dollars at exchange rates in effect during, or at the end of, the reporting period. As a result, our future revenues, costs, results of operations and earnings could be significantly affected by changes in foreign currency exchange rates, especially the euro to U.S. dollar exchange rate and the Brazilian real to U.S. dollar exchange rate.

In addition, some of our sale and purchase transactions are denominated in a currency other than the local currency of our operations. As a result, changes in exchange rates between the currencies in which the transaction is denominated versus the local currency of our operation into which the transaction is being recorded can impact the amount of local currency recorded for such transaction. This can result in more or less local currency revenue or cost related to such transaction and thus have an effect on our operating profit. Our Brazilian and Polish operations are more fully exposed to currency transaction risk, especially as a result of U.S. dollar sales in Brazil and euro denominated sales in Poland. We also hold a significant amount of our cash balances in euros, thus any weakening of the euro versus the U.S. Dollar would reduce the amount of U.S. Dollars for which such balances could be exchanged.

Changes in foreign currency exchange rates also impact the amount reported in other income (expense), net. For instance, when a non-local currency receivable or payable is not settled in the period in which it is incurred, we are required to record a gain or loss, as applicable, to reflect the impact of any change in the exchange rate as of the end of the period. We also have to reflect the translation rate impact on the carrying value of our foreign assets and liabilities as of the end of each period, which is recorded as Unrealized Translation Adjustment in Other Comprehensive Income.

We utilize a variety of practices to manage this risk, including operating and financing activities and, where considered appropriate, derivative instruments. All derivative instruments we use are either exchange traded or entered into with major financial institutions in order to reduce credit risk and risk of nonperformance by third parties. Counterparty risk cannot be eliminated and there can be no assurance that our efforts will be successful. We generally hedge foreign currency transaction risk primarily through the use of derivative instruments, including forward and swap contracts and, to a lesser extent, option contracts. The use of derivative instruments is intended to mitigate or reduce transactional level volatility in the results of foreign operations, but does not completely eliminate volatility. If our future revenues, costs and results of operations are significantly affected by economic conditions abroad and/or we are unable to effectively hedge these risks, they could materially adversely affect our financial condition, results of operations and cash flows.

Uncertainties in the interpretation and application of the U.S. tax reform legislation commonly known as the Tax Cuts and Jobs Act (the "Tax Act") could materially affect our tax obligations and effective tax rate.

On December 22, 2017, President Trump signed into law legislation that significantly revised the Internal Revenue Code of 1986, as amended (the "Code"). The Tax Act, among other things, contains significant changes to corporate taxation. To date, the U.S. Department of Treasury has issued proposed regulations and guidance on some aspects of the Tax Act, but there remains considerable uncertainty as to the application of certain provisions of the Tax Act that may be relevant to us. As additional regulatory guidance is issued and finalized and as we perform additional analysis there could be material impacts to our tax obligation and effective tax rate. Any changes as a result of new or finalized regulations will be recorded in the period of adoption.

The Company could be subject to changes in its tax rates, the adoption of new U.S., or foreign tax legislation or exposure to additional tax liabilities.

The Company is subject to taxes in the U.S. and in foreign jurisdictions where a number of the Company's subsidiaries are organized. The Company's future effective tax rate could be affected by changes in the mix of earnings in countries

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with differing statutory tax rates or future changes in tax laws or their interpretations as to the legality of tax advantages granted under various current and past corporate structures. Although none of the Company's international tax arrangements are currently being challenged or threatened to be challenged, recent developments, such as the European Commission's investigations on illegal state aid as well as the Organization for Economic Cooperation and Development project on base erosion and profit shifting may result in changes to long-standing tax principles or new challenges to our cross-border arrangements, which could materially affect our effective tax rate or require a restructuring of the holding of foreign subsidiaries. If the Company's effective tax rates were to increase, or if any ultimate determination of the Company's taxes owed is for an amount in excess of amounts previously accrued, the Company's operating results, cash flows, and financial condition could be adversely affected.

We face competition from several established competitors and, in our RTL business from tobacco leaf; we have limited market transparency.

Our four largest competitors for our EP business are delfortgroup AG ("delfort"), Julius Glatz GmbH ("Glatz"), Miquel y Costas & Miquel S.A. ("Miquel y Costas") and PT BUKIT Muria Jaya ("BMJ"). All four primarily operate from modern and cost-effective plants in Western Europe and Asia and are capable and long-standing suppliers to the tobacco industry. Further, three such competitors, delfort, Glatz and BMJ, are privately held and the third, Miquel y Costas, is a closely held public company. Thus, their financial results and other business developments and strategies are not disclosed to the same extent as ours, which provides them some advantage in dealing with customers. Given the concentration of most of our competitors in Western Europe, which has seen declining demand for tobacco products and has labor laws that make reducing capacity expensive and slow, excess capacity exists and therefore price competition is acute. We believe that all four competitors have good relationships with the multinational cigarette companies, as does the Company. The multinational cigarette companies have been known to use these close relationships to encourage the development of enhanced competition through supporting competitive products and facilities, especially when confronted with new, high-value technologies such as porous plug wrap in the past and LIP today. We believe our Engineered Paper products compete primarily on product features, price, innovations and customer service. Due to many of the factors described above, we have a limited ability to predict trends in the industry and there may be a time lag before we become aware of developing trends in the industry.

Our AMS segment products compete to some degree against specialty products made by Marshall Manufacturing Company, Johns Manville, a subsidiary of Berkshire Hathaway Inc., Shaoxing Naite Plastics Co. Ltd., 3M Company, Covestro AG, Tenax Corporation, Intermas Group, and Hollingsworth and Vose Company. We believe our AMS products compete primarily on product features, innovations and customer service. Some of these competitors are larger than we are and have more resources, thus the actions of these competitors could have an impact on the results of our AMS segment operations.

As a result of the foregoing, the Company faces significant selling price, sales volume and new product risks from its competitors, especially during periods (often annually) in which the Company's contracts with its major customers are subject to renewal or renegotiation.

Currently, fine papers used to produce cigarettes are only exported on a limited basis from available capacity in China and other Asian locations to western multinational cigarette companies due to government taxes and tariffs, which limit price competitiveness, as well as due to customer preferences. Should conditions change in this regard, capacity that currently is operating in China and elsewhere in Asia would present a risk to our competitive position outside Asia and place further pressure on our legacy paper production platforms. Similarly, we are starting to see increased competition for some of our AMS products from companies in China, which, we believe, may have lower operating costs than us, resulting in a potential price advantage for such companies.

In the RTL end-market segment, demand is a function, among other things, of smoke delivery regulations, the cigarette manufacturer's desire for a uniform and consistent product, the taste profile sought by cigarette

manufacturers and the cost of recycling the tobacco by-product scraps relative to the cost of virgin tobacco products. Thus, our RTL business is also subject to competitive risk from lower cost virgin tobacco leaf or other, cheaper, cigarette fillers. These factors have resulted, and are likely to continue to result, in materially lower sales volumes for our RTL business, resulting in

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downtime of certain production machines and, in some cases, accelerated depreciation or impairment charges for certain equipment as well as employee severance expenses associated with downsizing or restructuring activities.

Further, as a result of excess capacity in the tobacco-related papers industry and increased operating costs, competitive levels of selling prices for certain of the Company's products are not sufficient to cover those costs with a margin that the Company considers reasonable. Such competitive pressures have resulted, and could result in the future, in downtime of certain paper production machines and, in some cases, accelerated depreciation or impairment charges for certain equipment as well as employee severance expenses associated with downsizing or restructuring activities.

We are dependent upon a small number of customers for a significant portion of our sales; the loss of one or more of these customers, or changes in their cigarette blending approaches, could have a material adverse effect on our business.

Four customers, together with their respective affiliates and designated converters, accounted for over 28% of our net sales in 2018. The loss of one or more of these customers, or a significant reduction in their purchases, particularly those that impact our sales of LIP papers or Recon, could have a material adverse effect on our financial condition, results of operations and cash flows. The enhanced capabilities provided by RTL in the area of product design and regulatory compliance are important to our customers. However, future RTL results could be adversely affected by fluctuations in customer inventories, changes in the cigarette tobacco blending approaches by our customers, changes in regulations and tariffs and the price of virgin tobacco leaf.

In addition, significant consolidation has occurred among our tobacco customers and may continue to occur, thereby increasing our dependence upon a fewer number of tobacco industry customers and increasing the negotiating leverage of those customers that remain. If any of our customers were to change suppliers, in-source production of Recon or cigarette papers (including those used to produce LIP cigarettes), institute significant cost-cutting measures or experience financial difficulty, then these customers may substantially reduce their purchases from us, which could adversely impact our financial condition, results of operations and cash flows. In addition, adverse results in the negotiation of any of our significant customer contracts, the terms of which are typically negotiated every one to three years, could significantly impact our financial condition, results of operations and cash flows.

We are dependent upon the availability of credit, and changes in interest rates can impact our business.

We supplement operating cash flow with bank borrowings under a secured credit agreement with a syndicate of banks. Borrowings under this agreement will mature in September 2023 and September 2025. To date, we have been able to access credit when needed and on commercially reasonable terms. However, deterioration of credit markets, including an economic crisis in the U.S. or elsewhere, whether or not caused by the U.S. or European debt ceiling, deficits and budget issues, could have an adverse impact on our ability to negotiate new credit facilities or access or renew our existing one. Constraints on the availability of credit, or the unavailability of credit at reasonable interest rates, would negatively impact our business, including potentially impairing our ability to declare dividends, conduct share buy-backs and make acquisitions.

Our secured credit facility contains certain financial covenants. In the event of material unforeseen events that impact our financial performance, particularly during a time when we have material amounts of debt, a situation could arise where we are unable to fully draw from our existing credit facility notwithstanding that there is otherwise available capacity.

Our credit facilities are secured by substantially all of the personal property of the Company and its domestic subsidiaries. In the event of a default on these agreements, substantially all of the assets of the Company could be subject to foreclosure or liquidation by the secured creditors.

We may utilize a combination of variable and fixed-rate debt consisting of short-term and long-term instruments. We selectively hedge our exposure to interest rate increases on our variable rate long-term debt when we believe that it is practical to do so. We have utilized various forms of interest rate hedge agreements, including interest rate swap agreements, forward rate agreements and cross currency swaps. There are inherent risks associated with interest rate

hedges, including those associated with the movement of interest rates, counterparty risk and unexpected need to refinance debt, thus there can be no certainty that our hedging activities will be successful or fully protect us from interest rate exposure. As of December 31, 2018, the percentage of the Company's fixed and floating interest rate debt was 56% and 44%, respectively. The Company has entered into a number of interest rate hedge transactions to convert floating rate debt to fixed. Including the impact of these transactions, as of December 31, 2018, the percentage of the Company's debt subject to fixed and floating rates of interest was 85% and 15%, respectively.

Our use of interest rate hedge agreements to manage risk associated with interest rate volatility may expose us to additional risks, including the risk that a counterparty to a hedge agreement may fail to honor its obligations. Developing an effective interest rate risk strategy is complex and no strategy can completely insulate us from risks associated with interest rate fluctuations. There can be no assurance that our hedging activities will have the desired beneficial impact on our results of operations or financial condition. Termination of interest rate hedge agreements typically involves costs, such as transaction fees or breakage costs.

Changes in the method pursuant to which LIBOR rates are determined and potential phasing out of LIBOR after 2021 may adversely affect our results of operations.

LIBOR and certain other "benchmarks" are the subject of recent national, international and other regulatory guidance and proposals for reform. These reforms may cause such benchmarks to perform differently than in the past or have other consequences which cannot be predicted. In particular, on July 27, 2017, the United Kingdom's Financial Conduct Authority, which regulates LIBOR, publicly announced that it intends to stop persuading or compelling banks to submit LIBOR rates after 2021. It is unclear whether, at that time, LIBOR will cease to exist or if new methods of calculating LIBOR will be established. Any uncertainty regarding the continued use and reliability of LIBOR as a benchmark interest rate could adversely affect the performance of LIBOR relative to its historic values. If the methods of calculating LIBOR change from current methods for any reason, or if LIBOR ceases to perform as it has historically, our interest expense associated with the unhedged portion of our outstanding indebtedness or any future indebtedness we incur may increase. Further, if LIBOR ceases to exist, we may be forced to substitute an alternative reference rate, such as a different benchmark interest rate or base rate borrowings, in lieu of LIBOR under our current and future indebtedness and interest rate swaps. At this point, it is not clear what, if any, alternative reference rate may be adopted to replace LIBOR, however, any such alternative reference rate may be calculated differently than LIBOR and may increase the interest expense associated with our existing or future indebtedness.

Finally, the replacement or disappearance of LIBOR may adversely affect the value of and return on our LIBOR-based obligations and the availability, pricing and terms of LIBOR-based interest rate swaps we use to hedge our interest rate risk. Alternative reference rates or modifications to LIBOR may not align for our assets, liabilities, and hedging instruments, which could reduce the effectiveness of certain of our interest rate hedges, and could cause increased volatility in our earnings. We may also incur expenses to amend and adjust our indebtedness and swaps to eliminate any differences between any alternative reference rates used by our interest rate hedges and our outstanding indebtedness.

Any of these occurrences could materially and adversely affect our borrowing costs, business and results of operations.

Our internal and external expansion plans and asset dispositions entail different and additional risks relative to the rest of our business.

From time to time, we consider acquisitions either within the tobacco industry or outside the industry in connection with our diversification initiatives, such as our acquisitions of DelStar Technologies, Inc., Argotec LLC and Conwed Plastics LLC. This acquisition activity could involve confidential negotiations that are not publicly announced unless and until those negotiations result in a definitive agreement. It is possible that an acquisition could adversely impact

our results, credit ratings or the outlook of our business, due to, among other things, integration and employee retention challenges, contrasting company cultures and different information technology and reporting systems. Also, acquisition opportunities are limited and present risks of failing to achieve strategic objectives, smooth integrations or anticipated synergies or returns. There can be no assurance that we will be able to acquire attractive businesses on favorable terms, that we will realize the anticipated benefits or profits through acquisitions or that acquisitions will be accretive to our earnings. Changes in our portfolio of businesses, assets and products, whether through acquisition (such as our

acquisitions of DelStar, Argotec and Conwed), disposition or internal growth, present additional risks, including causing us to incur unknown or new types of liabilities, subjecting us to new regulatory frameworks and new market risks, and acquiring operations in new geographic regions with challenging labor, regulatory and tax regimes. The potential future expansion of our AMS business unit or other operations could cause these operations to face additional competition from larger and more established competitors than is currently the case.

Our ability to dispose of idled assets and the value that may be obtained relative to their book value can result in significant impairment charges. Building a new plant or other facility or relocating, rebuilding or otherwise modifying existing production machinery is a major undertaking and entails a number of risks, including the possibility that the contractors and sub-contractors who are expected to build the facility or rebuild the machine and supply the necessary equipment do not perform as expected, the possibility of cost overruns and delays, or that design defects or omissions cause the facility or machine to perform at less than projected efficiency or at less than projected capacity. In addition, commencement of production at a new site or at a rebuilt or relocated machine is time consuming and requires testing and acceptance by customers and potentially by regulators, of the facility and the products that are produced. Also, while we anticipate sufficient demand for the facility's or machine's output, there can be no assurances that the expected demand will materialize. For more information on our expansion plans, see Part II, Item 7. "Management's Discussion and Analysis of Financial Condition and Results of Operation" of this report.

We also expect to continue to expend resources to diversify and expand our product portfolio. Research and development and product diversification have inherent risks, including technical success, market acceptance, new regulations and potential liabilities. We cannot guarantee that such efforts will succeed, that we will not incur new or different liabilities or that we will achieve a satisfactory return on such expenditures.

We may not successfully integrate acquisitions or integrate other SWM operations into AMS and we may be unable to achieve anticipated cost savings or other synergies.

The integration of the operations of acquired companies involves a number of risks and presents financial, managerial, reporting, legal and operational challenges. We may have difficulty, and may incur unanticipated expenses related to, integrating information systems, financial reporting activities, employee retention and integrating and retaining management and personnel from acquired companies. Among these risks are potential loss of consumer awareness and demand for the acquired companies' products based on the rebranding of those products under the Company's legacy brand names. Additionally with respect to the acquisition of Conwed in early 2017, we may not be able to achieve anticipated cost savings or commercial or growth synergies, for a number of reasons, including contractual constraints and obligations or an inability to take advantage of expected commercial opportunities, inability to achieve increased operating efficiencies or commercial expansion of key technologies. In the second half of 2015, we formed our AMS business unit comprised of these operations and certain other SWM resources. The future success of AMS depends, in part, on our ability to attract additional management, retain key employees, integrate new personnel, operating and reporting systems as well as execute AMS' growth strategy. Failure to successfully integrate acquired companies into AMS may have an adverse effect on our business, financial condition, results of operations, and cash flows.

Our restructuring activities are time-consuming and expensive and could significantly disrupt our business. We have initiated significant restructuring activities in recent years, including restructurings in 2014, 2015, 2016 and 2017 in France and the U.S., during 2014 in Brazil and during 2012 in the Philippines, that have become part of an overall effort to improve an imbalance between demand for our products and our production capacity as well as improve our profitability and the quality of our products. We expect to continue these restructuring efforts from time to time. Restructuring of our existing operations, or as a result of acquisitions, involves issues that are complex, time-consuming and expensive and could significantly disrupt our business as well as garner review from regulatory authorities which could result in financial impacts to the Company. The challenges involved in executing the actions that are part of our ongoing and, potentially future, restructuring plans include:

- demonstrating to customers that the restructuring activities will not result in adverse changes in service standards or business focus;

- consolidating administrative infrastructure and manufacturing operations while maintaining adequate controls throughout the execution of the restructuring;

- preserving distribution, sales and other important relationships and resolving potential conflicts that may arise;

- estimating, managing and minimizing the cost of the restructuring activities;

- minimizing the diversion of management attention from ongoing business activities;

- maintaining employee morale, retaining key employees, maintaining reasonable collective bargaining agreements and avoiding strikes, work stoppages or other forms of labor unrest while implementing restructuring programs that often include reductions in the workforce;

- securing government approval of such plans, where necessary, and managing the litigation and associated liabilities that often are associated with restructuring actions;

- incurring costs associated with delays in restructuring activities caused by labor negotiations and/or governmental approvals;

- coordinating and combining operations, which may be subject to additional constraints imposed by collective bargaining agreements and local laws and regulations; and

- achieving the anticipated levels of net cost savings and efficiency as a result of the restructuring activities.

If we do not achieve future and continued expected benefits as a result of our legal entity realignment, the ability to achieve our financial guidance for operating results and our financial condition, results of operations and cash-flow could be adversely affected.

In 2014, 2016 and again in 2017, we re-examined and re-aligned certain internal business operations and our legal entity structure in order to improve our cash-flows, have easier access to our foreign cash, centralize, enhance the management of our intellectual property and streamline certain internal business activities. Steps to accomplish these objectives have been taken and additional steps may be taken later as we continue to grow certain of our operations, diversify our business and continue our business analyses. We anticipate that there could be further realignment activities in the future.

Realignments can present significant risks of events occurring that could delay, halt or adversely affect the success of a project, including delays encountered in finalizing the scope of, and implementing, the realignment, the failure to

achieve targeted benefits or savings, the failure to follow appropriate regulatory requirements or internal processes and procedures and a potential decrease in employee morale. Further, there can be no assurance that the taxing authorities of the jurisdictions in which we operate, or to which we are otherwise deemed to have sufficient tax activity, will not

challenge our interpretation of tax laws and regulations or the tax benefits that we expect to realize as a result of the realignment. Any such challenges (including our response thereto) can be time consuming or expensive with potentially uncertain outcomes, including as to additional interest, penalties or increase in back taxes that could be payable by us. In addition, changes to U.S. or non-U.S. tax laws and regulations may materially impact the anticipated benefits of our legal entity structure and any potential future realignments. Any future impact to our effective tax rate will also depend on our ability to operate our business in a manner consistent with the regulatory requirements for such a realignment including applicable taxing provisions and realization of our anticipated profits as well as the countries in which such profits are realized. Further, we have incurred certain costs in connection with the realignment and we may incur additional costs, including ones that are not currently expected to be incurred. There also can be significant costs and complexities around meeting the necessary tax accounting rules as required by our realignment structure and regulations applicable to us and it is possible that the authorities might disagree with our accounting treatment or that there may be a disagreement or dispute regarding our calculations. It is also possible that the authorities might change, either prospectively or retrospectively, certain complex tax rulings that would have potentially significant impacts to our financial results. Additionally, due to the complex nature of some of the accounting and taxation calculations, the Company may incur significant costs in defending its interpretation of positions in regards to certain tax legislation, rulings and inquiries.

To the extent these risks or circumstances occur, we may fail to achieve the future financial and business benefits that we anticipate as a result of the realignments, our tax rate may increase and our future operating results, financial condition and cash flows may be negatively impacted. Thus, there can also be no assurance that we will realize the expected future benefits of the realignments.

Our financial performance can be significantly impacted by the cost and availability of raw materials and energy and we may have limited ability to pass through increases in costs to our customers.

Raw materials are a significant component of the cost of the products that we manufacture. The cost of wood pulp, which is the largest component of the raw materials that we use in our EP segment, and some resins used by our AMS segment are highly cyclical and can be more volatile than general consumer or producer inflationary changes in the general economy. For instance, during the period from January 2013 through December 2018, the U.S. list price of northern bleached softwood kraft pulp ("NBSK") a representative pulp grade that we purchase, increased by 61%. Also, in that same time period, the cost of polypropylene has fluctuated significantly based on a number of factors, including changes in global oil markets. As we periodically enter into agreements with customers under which we agree to supply products at fixed prices, unanticipated increases in the costs of raw materials, or the lack of availability of such raw materials (due to force majeure or other reasons), can significantly impact our financial performance. Even where we do not have fixed-price agreements, we generally cannot pass through increases in raw material costs in a timely manner and in many instances are not able to pass through the entire increase to our customers. Further, some of the resins we use in our AMS segment are only available from a single supplier, or a limited number of suppliers. Consequently, such supplier(s) can control the availability and thus the cost of the resins we use, notwithstanding any changes in the cost of oil. It can be time consuming and costly, and occasionally impractical, to find replacement resins where such suppliers limit the availability or increase the cost of resins we use.

Paper manufacturing is energy-intensive. In France, Poland, China and in the U.S., availability of energy generally is reliable, although prices can fluctuate significantly based on variations in overall demand. Western Europe is becoming significantly dependent on energy supplies from the Commonwealth of Independent States, which in the past has demonstrated a willingness to restrict or cut off supplies of energy to certain customers. The volume of oil or gas flowing through pipeline systems that ultimately connect to Western Europe also has been cut off or restricted in the past, and such actions can adversely impact the supply of energy to Western Europe and, consequently, the cost and availability of electricity to our European operations. In Brazil, because production of electricity is heavily reliant upon hydroelectric plants, availability of electricity can be, and has been in the past, affected by rain variations. Electricity in Brazil is also heavily taxed. Due to the competitive pricing for most of our products, we typically are

unable to fully pass through higher energy costs to our customers. Periodically, when we believe it is advantageous to do so, we enter into agreements to procure a portion of our energy for future periods in order to reduce the uncertainty of future energy costs. However, in recent years this has only marginally slowed the increase in energy costs due to the volatile changes in energy prices we have experienced.

A failure of, or a security breach in, a key information technology system or process or other unusual events could compromise our information and expose us to liability, which could adversely affect our business; IT project delays and overruns are possible.

We rely extensively on information technology systems, some of which are managed by third-party service providers, to analyze, process and manage transactions and sensitive data, including intellectual property, our proprietary business information and that of our customers, suppliers and business partners, and personally identifiable information of our employees. The secure processing and maintenance of this information is critical to our operations and business strategy and we rely heavily on the integrity of this data in managing our business. Insider or employee cyber and security threats are increasingly a concern for all companies, including ours. In addition, social engineering and phishing are a particular concern. We are continuously working to install new, and to upgrade our existing, information technology systems and to provide employee awareness training around phishing, malware and other cyber risks to ensure that we are protected, to the greatest extent possible, against cyber risks and security breaches.

Despite our security measures, our information technology and infrastructure may be vulnerable to attacks by hackers or be breached due to employee or third party error, malfeasance or other disruptions. To date, we have not had a significant cyber breach or attack that has had a material impact on our business. However, any such breach could compromise our networks and the information stored there could be accessed, publicly disclosed, lost or stolen. Any such access, disclosure or other loss of information could result in legal claims, proceedings, or regulatory penalties, including penalties under EU privacy laws, and could disrupt our operations.

There are further risks associated with the information systems of companies we acquire, both in terms of systems compatibility, level of security and functionality. It may cost us significant money and resources to address these risks and we may fail to address them successfully, adversely impacting our financial condition, results of operations and cash flows.

From time to time, we undertake significant information technology systems projects, including enterprise resource planning updates, modifications and roll-outs. These projects are subject to cost overruns and delays. Not only could these cost overruns and delays impact our financial statements but a delay in the completion of a needed IT project could adversely impact our ability to run our business and make fully informed decisions.

We rely on a limited number of key employees, have had significant personnel turnover and have had difficulty in attracting and hiring qualified new personnel in some areas of our business.

The loss of any of our key employees, including our CEO and his direct reports, due to retirement, difference in culture with acquired businesses, the demands of our business, our tobacco-related operations or otherwise could adversely affect our business and thus our financial condition, results of operations and cash flows. Because a large part of our business is tied to the tobacco industry, we may also experience difficulty in retaining and hiring qualified executives and other personnel in our AMS segment, at corporate and/or in EP. This may be caused by the health and social issues associated with the tobacco industry. We not only compete for talent with consumer products and other companies that enjoy greater social acceptance but also with larger, more established companies within the tobacco industry.

As we diversify through acquisitions outside our tobacco-related operations, we run the risk of turnover of key personnel within the businesses we acquire as well as difficulty in finding and attracting first class talent in industry segments that are new to us. This could slow the growth of these businesses and impede our ability to find and complete synergistic acquisitions.

Our business is subject to seasonal or cyclical market and industry fluctuations which may result in reduced net sales and operating profits during certain periods.

Sales of our EP products in the U.S., Europe, China and Brazil are subject to seasonal fluctuations. In the U.S. and Europe, customer shutdowns typically occur in August and December and historically have resulted in reduced net sales and operating profit during those two months. Likewise, the production of cigarettes in China for the Chinese market slows significantly before and during Chinese New Year, with a corresponding reduction in demand for our EP products. Additionally, our facilities occasionally shut down equipment to perform additional maintenance during these months or as a result of slow demand, resulting in higher product costs, higher maintenance expenses and reduced operating profit. In Brazil, customer orders are typically lower in December due to a holiday season during much of January and February. The oil & gas, mining and automotive industries are important to sales in our AMS segment and these and other industries tend to be cyclical, which could adversely impact our business, financial condition, results of operations and cash flows during the duration of their down cycles.

Our business depends upon good relations with our employees; work stoppages, slowdowns or legal action by our unionized employees may have a material adverse effect on our business, financial condition, results of operations and cash flows.

We employ approximately 3,500 employees, including manufacturing employees represented by unions. Although we believe that employee and union relations are generally positive, there is no assurance that this will continue in the future. We may experience difficulties in maintaining appropriate relations with unions and employees in certain locations. Problems or changes affecting employees in certain locations may affect relations with our employees at other locations. The risk of labor disputes, work stoppages or other disruptions in production could adversely affect us, especially in conjunction with potential restructuring activities. If we cannot successfully negotiate or renegotiate collective bargaining agreements, or if negotiations take an excessive amount of time, there may be a heightened risk of work stoppages and we may be unable to achieve planned operational efficiencies. Work stoppages may be caused by the inability of national unions and the governments of countries in which we operate from reaching agreement, and are outside of our control. Any work stoppage or failure to reach agreements with our unions could have a material adverse effect on our customer relations, our productivity, the profitability of a manufacturing facility, our ability to develop new products and on our operations as a whole, resulting in an adverse impact on our business, financial condition, results of operations and cash flows.

Our business is subject to various environmental laws, regulations and related litigation that could impose substantial costs or other liabilities on us.

Our facilities are subject to significant federal, state, local and foreign environmental protection laws with respect to air, water and emissions as well as the disposal of solid waste. We believe that we are operating in substantial compliance with these laws and regularly incur capital and operating expenditures in order to achieve future compliance. However, these laws may change, which could require changes in our practices, additional capital expenditures or loss of carbon credits, and we may discover aspects of our business that are not in compliance. Violation of these laws can result in the imposition of significant fines and remediation costs. In France, we presently have sufficient authorized capacity for our emissions of carbon dioxide through 2020. However, this authorization must be renewed periodically. We cannot predict whether we will have sufficient authorized capacity to conduct our operations in France as presently conducted or to do so without having to make substantial capital expenditures in future years.

We are a member of a potentially responsible party group ("Global PRP Group") that entered into a settlement with the State of New Jersey in 1993 concerning the remediation of a landfill site in Middlesex County, New Jersey. The landfill remediation has been completed. We have established a reserve of approximately \$0.4 million that we believe is adequate to cover our ongoing liability, but we remain exposed to post-closure operating costs over an extended period of years that cannot be fully known or estimated at this time.

Additionally, in recent years, assessments of the potential impacts of climate change have begun to influence governmental authorities, consumer behavior patterns and the general business environment of the European Union

and the United States. The implementation of these policies may require us to invest additional capital in our properties or it may restrict the availability of land we are able to develop. These changes, or other changes in other environmental laws or the interpretation thereof, new enforcement of laws, the identification of new facts or the failure of other parties to perform remediation at our current or former facilities could lead to new or greater liabilities that could materially adversely affect our business, results of operations, cash flows or financial condition.

Although we are not aware of any environmental conditions at any of our facilities that could have a material adverse effect on our financial condition, results of operations and cash flows, we own facilities in France, the U.S. and elsewhere that have been operated over the course of many decades. Should the Company make material changes in the operations at a facility it is possible such changes could generate environmental obligations that might require remediation or other action, the nature, extent and cost of which are not presently known. We may also face higher disposal and clean-up costs to replace equipment or facilities containing materials that were compliant when installed, but are now considered contaminants. Additionally, as we sell closed or other facilities or materially alter operations at a facility, we may be required to perform additional environmental evaluations that could identify items that might require remediation or other action, the nature, extent and cost of which are not presently known. We may also incur environmental liabilities in connection with assets or businesses we may purchase in the future.

Increases in costs of pension benefits may reduce our profitability.

Our results of operations may be negatively affected by expenses we record for our defined benefit pension plans. Generally accepted accounting principles in the U.S., ("GAAP"), require that we calculate income or expense for the plans using actuarial valuations. These valuations reflect assumptions about financial markets, longevity of our current and former employees and other economic conditions, which may change based on changes in key economic indicators and mortality tables. We are required to make an annual measurement of plan assets and liabilities, which may result in increased funding obligations or negative changes in our stockholder equity. At the end of 2018, the combined projected benefit obligation of our U.S. and French pension and other postretirement healthcare plans had a net underfunding of \$27.8 million. For a discussion regarding our pension obligations, see Note 18. Postretirement and Other Benefits of the Notes to Consolidated Financial Statements in Part II, Item 8 and "Other Factors Affecting Liquidity and Capital Resources" in Part II, Item 7. Although expense and pension funding contributions are not directly related, key economic factors that affect expense would also likely affect the amount of cash we would contribute to pension plans as required under the Employee Retirement Income Security Act ("ERISA") for U.S. plans. Failure to achieve expected returns on plan assets driven by various factors, which could include a continued environment of low interest rates or sustained market volatility, could also result in an increase to the amount of cash we would be required to contribute to pension plans.

We are subject to various legal actions and other claims.

We regularly are involved in legal actions and other claims arising in the ordinary course of business and otherwise. We are also subject to many laws and regulations around the world. Despite our efforts, we cannot guarantee that we are in compliance with every such law or regulation. Because of the complexity of Brazilian tax laws and court systems, legal actions are a particular risk that affects our Brazilian operations. Although we believe that our positions in pending disputes about state and federal taxes are correct and will ultimately be upheld by Brazilian courts, the outcome of legal proceedings is difficult to predict. An adverse result in one or more of these tax disputes could have a material adverse impact on our financial condition, results of operations and cash flows. We are also subject to other litigation in Brazil, including labor and workplace safety claims. Although we do not believe that any of the currently pending actions or claims against us will have a material adverse impact on our financial condition, results of operations and cash flows, we cannot provide any assurances in this regard. Information concerning some of these actions that currently are pending is contained in Note 20. Commitments and Contingencies, of the Notes to Consolidated Financial Statements and in Part I, Item 3, "Legal Proceedings" of this report. We also cannot give any assurances as to any litigation that might be filed against us in the future, including any claims relating to the alleged harmful effect of tobacco use on human health.

Significant impairment charges could result from our evaluation of the Philippines RTL manufacturing site.

We suspended construction of our Philippines RTL manufacturing site during 2011. During 2015, as a result of management's intent and ability to dispose of these assets, the amounts were reclassified from property, plant and equipment to assets held for sale in our balance sheet. The carrying value of these assets is based on estimated fair value less cost to sell. During 2017, we compared the estimated fair value less cost to sell to the net book value of the assets which resulted in our recording of an impairment charge of \$4.0 million.

In years prior to 2015, the carrying value of the assets was evaluated for impairment at each reporting period by assessing the recoverability of the costs based on the undiscounted cash flows of the operation, the likelihood of its reactivation and any alternative uses for the equipment. This evaluation, along with declines in our RTL volumes, resulted in 2013 in an impairment of \$37.2 million. Further declines in the estimated fair value of these assets could result in a decision to record a further impairment of some or a substantial portion of the remaining outstanding balance of these assets, which was \$12.0 million at December 31, 2018.

One portion of our business is dependent upon a single plant; further, we have limited cross redundancy across our facilities.

Sales of RTL products represent a substantial portion of our revenues and profits. We presently produce RTL at only one facility located in France and wrapper and binder products at only one facility located in Ancram, New York. In our AMS business, in order to enhance the protection of our trade secrets, critical proprietary dies used in a significant portion of our extruding operations are made with very limited personnel trained to manufacture them and very strict access to the equipment. Further, in order to achieve operational efficiencies, among other reasons, we have limited ability to shift production across our various facilities, thus the loss of production at one facility may not be able to be mitigated by increased production at another. Consequently, natural disasters, pandemics and other unusual events could cause the loss of, or interruption of operations for a significant length of time at, one or more of our facilities in six different countries, which could have a material adverse effect on our financial condition, results of operations and cash flows.

Any loss or interruption of the operations of our facilities may harm our operating performance.

Our revenues depend on the effective operation of our manufacturing facilities. The operation of our facilities involves risks, including the breakdown, failure, or substandard performance of equipment, power outages, the improper installation or operation of equipment, explosions, fires, natural disasters, failure to achieve or maintain safety or quality standards, work stoppages, supply or logistical outages, and the need to comply with environmental and other directives of governmental agencies. The occurrence of material operational problems, including, but not limited to, the above events, could cause the loss of, or interruption of, operations for a significant length of time, which could have a material adverse effect on our financial condition, results of operations and cash flows.

Fluctuations in construction and infrastructure spending can impact demand for certain of our products.

Demand for certain of our products depends on spending in the construction industry, both residential and non-residential, as well as infrastructure sectors. Spending in those sectors is impacted by numerous circumstances beyond our control including, but not limited to, interest rates, availability of financing, housing inventory, capital spending, corporate investment, local, federal and state regulations, as well as availability and commitment of public funds for municipal spending, capacity utilization and general economic conditions. Decreased spending in any of these sectors could have an adverse impact on our financial condition, results of operations, and cash flows during the duration of their down cycle.

Historically, we have experienced significant cost savings and productivity benefits relating to our ongoing operational excellence program; however, these benefits may not continue indefinitely or at the same levels.

Historically, we have experienced significant cost savings and productivity benefits relating to our ongoing operational excellence program as it relates to our tobacco operations that have supported our margins during periods of significant

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attrition in the tobacco industry. We expect to continue to achieve significant savings and benefits from this program; however, in light of continued industry attrition, execution risks and other factors, we may be unable to continue in the future to obtain savings and benefits in line with historical achievements, and our profitability and financial results could be adversely affected.

Similarly, though we have initiated implementation of this program in our AMS business operations in order to achieve margin improvements, due to the different company cultures of the acquisitions that make up a significant part of AMS and our continuing integration of these acquisitions, we may not be able to achieve the desired margin improvements through our operational excellence program at AMS.

Item 1B. Unresolved Staff Comments

None.

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Item 2. Properties

As of December 31, 2018, we operated a total of 22 production facilities on four continents and owned one non-production facility which is marketed for sale.

The following are the locations of our principal production facilities as of December 31, 2018. Except as otherwise noted, we own the facilities listed below:

Advanced Materials & Structures Segment Production Locations	Approximate Square Footage of Buildings	Engineered Papers Segment Production Locations	Approximate Square Footage of Buildings
Middletown Manufacturing Site Middletown, Delaware	142,000	Spotswood Plant Spotswood, New Jersey	399,000
Tubing Operations* Richland, Pennsylvania	35,000	Papeteries de Saint-Girons Plant Saint-Girons, France	214,000
Tubing Operations* El Cajon, California	22,000	PDM Industries Plant Quimperlé, France	592,000
Suzhou Manufacturing Site* Suzhou, China	108,000	Pirahy Plant Piraí, Brazil	1,098,000
Poland Manufacturing Site* Strykow, Poland	42,000	Poland Plant* Strykow, Poland	125,000
Gilberdyke Manufacturing Site Gilberdyke, United Kingdom	67,000	Newberry Operation Prosperity, South Carolina	50,000
Wilson Manufacturing Site* Wilson, North Carolina	108,000	Fiber Operation Manitoba, Canada	16,000
Argotec Manufacturing Operations* Greenfield, Massachusetts	182,000	LTR Industries Plant Spay, France	736,000
Minneapolis Manufacturing Site* Minneapolis, Minnesota	144,000	Ancram Plant Ancram, New York	116,000
Athens Manufacturing Site Athens, Georgia	200,000	RTL Philippines Plant (currently marketed for sale) Sto. Tomas, Philippines	283,000
Roanoke Manufacturing Site Roanoke, Virginia	40,000		
Chicago Manufacturing Site* Chicago, Illinois	66,000		
European Manufacturing Site Genk, Belgium	90,000		

* Leased properties

During 2017 we acquired five production locations in conjunction with our acquisition of Conwed.

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As of December 31, 2018, AMS product manufacturing lines operated at approximately 58% capacity compared to 63% capacity as of December 31, 2017. We had approximately 188,000 metric tons of annual paper production capacity, dependent upon the production mix. Capacity utilization decreased in 2018 to 80% for EP products compared with 82% in 2017. We also operate flax fiber processing operations in Canada and printing operations in France, Poland and the U.S.

We maintain administrative and/or sales offices in Alpharetta, Georgia; Quimperlé, France; Spay, France; Shanghai, China; Piraí, Brazil; Moscow, Russia; Strykow, Poland; Middletown, Delaware; Greenfield, Massachusetts; Luxembourg City, Luxembourg; and Minneapolis, Minnesota. Our world headquarters are located in Alpharetta, Georgia. All of these offices are owned except for those located in Alpharetta, Shanghai, Moscow, Strykow, Greenfield, Minneapolis, and Luxembourg City which are leased.

We consider all of our facilities to be well-maintained, suitable for conducting our operations and business, and adequately insured. Our RTL Philippines facility in Sto. Tomas, Philippines, is currently being marketed for sale. This property is classified as Assets held for sale in the Company's Consolidated Balance Sheets as of December 31, 2018 and 2017.

Item 3. Legal Proceedings

General

We are involved in various legal proceedings relating to contracts, commercial disputes, taxes, environmental issues, employment and workers' compensation claims, product liability and other matters. We periodically review the status of these proceedings with both inside and outside counsel. We believe that the ultimate disposition of these matters will not have a material effect on the results of operations in a given quarter or year, but no assurances can be given in this regard. Below is a summary of major outstanding litigation.

Litigation

Brazil

Imposto sobre Circulação de Mercadorias e Serviços ("ICMS") a form of value-added tax in Brazil, was assessed to our Brazilian subsidiary, Schweitzer-Mauduit do Brasil Indústria e Comércio de Papel Ltda. ("SWM-B"), in December of 2000. SWM-B received two assessments from the tax authorities of the State of Rio de Janeiro (the "State") for unpaid ICMS taxes on certain raw materials from January 1995 through November 2000 (collectively, the "Raw Materials Assessments").

The Raw Materials Assessments concerned the accrual and use by SWM-B of ICMS tax credits generated from the production and sale of certain non-tobacco related grades of paper sold domestically. SWM-B has contested the Raw Materials Assessments based on Article 150, VI of the Brazilian Federal Constitution of 1988, which grants immunity from ICMS taxes to papers intended for printing books, newspapers and periodicals, or immune papers, and thus to the raw material inputs used to produce immune papers. The Federal Supreme Court decided the first Raw Materials Assessment in favor of SWM-B. SWM-B's appeal on the merits concerning Assessment 2 in the amount of approximately \$11 million was denied by a single justice in a different chamber of the Federal Supreme Court of Brazil on April 9, 2018, and SWM-B appealed his decision to the full chamber of the Federal Supreme Court on May 11, 2018.

SWM-B received assessments from the tax authorities of the State for unpaid ICMS and Fundo Estadual de Combate à Pobreza ("FECP," a value-added tax similar to ICMS) taxes on interstate purchases of electricity. The state issued

four sets of assessments against SWM-B, one for May 2006 - November 2007, a second for January 2008 - December 2010, a third for September 2011 - September 2013, which was replaced by a smaller assessment for January - June 2013, and a fourth for July 2013 - December 2017 (collectively the "Electricity Assessments"). SWM-B challenged all Electricity Assessments in administrative proceedings before the State tax council (in the first-level court Junta de

Revisão Fiscal and the appellate court (the "Conselho de Contribuintes")) based on Resolution 1.610/89, which defers these taxes on electricity purchased by an "electricity-intensive consumer." In 2014, a majority of the Conselho de Contribuintes sitting en banc ruled against SWM-B in each of the first and second electricity assessments (\$5 million and \$8 million, respectively, based on the foreign currency exchange rate at December 31, 2018), and SWM-B is now pursuing challenges to these assessments in the State judicial system. Different chambers of the judicial court granted SWM-B preliminary injunctions against enforcement of these two assessments in the State judicial system. The Conselho de Contribuintes unanimously upheld SWMB's challenge to the third Electricity Assessment and dismissed this Electricity Assessment on technical grounds after the State admitted the tax did not apply as it had asserted. Instead, in August 2018, the State filed a revised Electricity Assessment in the amount of \$1 million for ICMS on electricity purchased during part of 2013. In August 2018, the State filed a fourth Electricity Assessment in the amount of \$9 million pertaining to ICMS and FECP on electricity purchased from July 2013 to December 2017. SWM-B filed challenges to these recent assessments in the first-level administrative court on the same grounds as the older cases. On December 19, 2018, the Junta de Revisão Fiscal ruled against SWM-B in the last two Electricity Assessments. SWM-B will appeal these rulings to the Conselho de Contribuintes. The State issued a new regulation effective January 1, 2018 that only specific industries are "electricity-intensive consumers," a list that excludes paper manufacturers. SWM-B contends this regulation shows that paper manufacturers were electricity-intensive consumers eligible to defer ICMS before 2018.

SWM-B believes that both the remaining Raw Materials Assessment and the Electricity Assessments will ultimately be resolved in its favor. No liability has been recorded in our consolidated financial statements for these assessments based on our evaluation of these matters under the facts and law as presently understood. The Company can give no assurance as to the ultimate outcome of such proceedings.

France

In December 2016, the Conseil de Prud'hommes d'Orange (a French court dealing with labor matters) rendered a decision by which the Company's wholly owned subsidiary, Schweitzer Mauduit France ("SWM France"), was ordered to pay approximately €1.3 million to 18 former employees of Malaucène Industries, another wholly owned subsidiary, on the grounds, among other things, that SWM France was a "co-employer" of the plaintiffs, and, as a result, liable for certain obligations of Malaucène Industries with respect to such employees. Malaucène Industries stopped production in 2009. The Company believes that SWM France, which is a corporate holding company and indirect corporate parent of Malaucène Industries, is not a "co-employer" of any person and that the other claims are also without merit. The Company has no liability recorded in the consolidated financial statements for this matter, believing that the chances of SWM France to reverse the decision on appeal are sufficient that no such reserve is warranted. There can be no assurance, however, that the court of appeals will decide in favor of SWM France on any of the questions pending before the court.

Germany

In January 2015, the Company initiated patent infringement proceedings in Germany against Glatz under multiple LIP-related patents. In December, 2017, the Dusseldorf Appeal Court affirmed the German District Court judgment on infringement of EP 1482815 against Glatz. Glatz has filed an action in the German Patent Court to invalidate the German part of EP1482815. The trial on this invalidity action has not yet been scheduled. The cost, timing and outcome of intellectual property litigation can be unpredictable and thus no assurances can be given as to the outcome or impact on us of such litigation.

Environmental Matters

Our operations are subject to various federal, state and local laws, regulations and ordinances in various nations relating to environmental matters. The nature of our operations exposes us to the risk of claims with respect to various

environmental matters, and there can be no assurance that material costs or liabilities will not be incurred in connection with such claims. While we have incurred in the past several years, and will continue to incur, capital and operating expenditures in order to comply with environmental laws and regulations, we believe that the future cost of compliance with environmental laws, regulations and ordinances, our exposure to liability for environmental claims, and our

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obligation to participate in the remediation and monitoring of certain hazardous waste disposal sites, will not have a material effect on our financial condition or results of operations. However, future events, such as changes in existing laws and regulations, or unknown contamination or costs of remediation of sites owned, operated or used for waste disposal by us (including contamination caused by prior owners and operators of such sites or other waste generators) may give rise to additional costs which could have a material effect on our financial condition or results of operations.

The Company incurs spending necessary to meet legal requirements and otherwise relating to the protection of the environment at its facilities in the U.S., France, Poland, Brazil, China, the United Kingdom and Canada. For these purposes, the Company incurred total capital expenditures of \$1.0 million in 2018, and expects to incur less than \$1.0 million in each of 2019 and 2020, of which no material amount is the result of environmental fines or settlements. Should the Company make material changes in the operations at a facility it is possible such changes could generate environmental obligations that might require remediation or other action, the nature, extent and cost of which are not presently known. The foregoing capital expenditures are not expected to reduce the Company's ability to invest in other appropriate and necessary capital projects and are not expected to have a material adverse effect on its financial condition or results of operations.

Indemnification Matters

In connection with our spin-off from Kimberly-Clark in 1995, we undertook to indemnify and hold Kimberly-Clark harmless from claims and liabilities related to the businesses transferred to us that were not identified as excluded liabilities in the related agreements. As of December 31, 2018, there are no material claims pending under this indemnification.

Item 4. Mine Safety Disclosures

Not applicable.

PART II.

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

Market Information. Since November 30, 1995, our common stock, \$0.10 par value per share ("Common Stock") has been listed on the New York Stock Exchange, trading under the symbol "SWM." On February 28, 2019, our stock closed at \$38.56 per share.

Performance Graph. The following graph compares the total cumulative stockholder return on our Common Stock during the period from December 31, 2013 through December 31, 2018, with the comparable cumulative total returns of the Russell 2000 Index and the S&P SmallCap 600 Capped Materials Index, both of which we consider to be reflective of the performance of the industries in which we operate.

The graph assumes that the value of the investments in the Common Stock and each index were \$100 on December 31, 2013 and that all dividends were reinvested. The stock price performance shown on the graph below is not necessarily indicative of future price performance.

Comparison of Cumulative Five Year Return

Holder. As of March 1, 2019, there were 1,684 stockholders of record.

Dividends. We have declared and paid cash dividends on our Common Stock every fiscal quarter since the second quarter of 1996. In 2018, 2017 and 2016, we declared and paid cash dividends totaling \$1.73 per share, \$1.69 per share and \$1.62 per share, respectively. On February 21, 2019, we announced a cash dividend of \$0.44 per share payable on March 22, 2019 to stockholders of record as of the close of business on March 4, 2019. Our credit agreement covenants require that we maintain certain financial ratios, as disclosed in Note 14. Debt, of the Notes to Consolidated Financial Statements, none of which under normal business conditions materially limit our ability to pay such dividends. We will continue to assess our dividend policy in light of our overall strategy, cash generation, debt levels and ongoing requirements for cash to fund operations and to pursue possible strategic opportunities.

Recent Sales of Unregistered Securities. We had no unregistered sales of equity securities during the fiscal year ended December 31, 2018.

Repurchases of Equity Securities. The following table indicates the cost of and number of shares of our Common Stock we have repurchased during 2018 and the remaining amount of share repurchases currently authorized by our Board of Directors as of December 31, 2018:

Issuer Purchases of Equity Securities

Period	Total Number of Shares Purchased	Average Price Paid per Share	Total Number of Shares Purchased as Part of Publicly Announced Programs	Approximate Dollar Value of Shares that May Yet be Purchased Under the Programs
			(# shares)	(\$ in millions)
January 1-March 31, 2018	62,634	\$ 40.57	—	—
April 1-June 30, 2018	4,703	40.27	—	—
July 1-September 30, 2018	2,421	40.73	—	—
October 1-October 31, 2018	1,609	36.53	—	—
November 1-November 30, 2018	1,771	33.23	—	—
December 1-December 31, 2017	2,257	25.83	—	—
Total 2018	75,395	\$ 39.86	—	—

We sometimes use corporate 10b5-1 plans to allow for share repurchases to be made at predetermined stock price levels, without restricting such repurchases to specific windows of time. Any future common stock repurchases will be dependent upon various factors, including the stock price of our Common Stock, strategic opportunities, strategic outlook and cash availability. From time-to-time, certain of our officers and directors may sell shares pursuant to personal 10b5-1 plans.

Item 6. Selected Financial Data

The following selected financial data 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 within this Annual Report on Form 10-K. The results of our San Pedro, Philippines and Medan, Indonesia plants have been retrospectively presented as discontinued operations for all periods, both of which were sold in 2013. The results for 2017 and 2015 include results of operations of Conwed and Argotec from the date of their acquisitions of January 20, 2017 and October 28, 2015, respectively. All dollar amounts are in millions except per share amounts, statistical data and ratios.

	For the Years Ended December 31,					
	2018	2017 ⁽¹⁾	2016 ⁽¹⁾	2015 ⁽¹⁾	2014 ⁽¹⁾	
Results of Operations						
Net sales	\$1,041.3	\$982.1	\$839.9	\$764.1	\$794.3	
Cost of products sold	762.8	698.7	582.0	538.3	575.3	
Gross profit	278.5	283.4	257.9	225.8	219.0	
Nonmanufacturing expenses	141.8	147.0	122.3	104.8	99.3	
Restructuring & impairment expense	1.7	8.1	25.6	14.6	13.1	
Operating profit	135.0	128.3	110.0	106.4	106.6	
Income from continuing operations	94.8	34.4	82.8	90.5	89.7	
Income (loss) from discontinued operations	(0.3)	0.1	—	(0.8)	—	
Net income	\$94.5	\$34.5	\$82.8	\$89.7	\$89.7	
Net income (loss) per share - basic:						
Income from continuing operations	\$3.08	\$1.12	\$2.71	\$2.97	\$2.94	
(Loss) income from discontinued operations	(0.01)	—	—	(0.02)	—	
Net income per share - basic	\$3.07	\$1.12	\$2.71	\$2.95	\$2.94	
Net income (loss) per share - diluted:						
Income from continuing operations	\$3.07	\$1.12	\$2.70	\$2.96	\$2.93	
(Loss) income from discontinued operations	(0.01)	—	—	(0.02)	—	
Net income per share - diluted	\$3.06	\$1.12	\$2.70	\$2.94	\$2.93	
Cash dividends declared and paid per share	\$1.73	\$1.69	\$1.62	\$1.54	\$1.46	
EBITDA from continuing operations ⁽²⁾	\$193.9	\$192.4	\$157.6	\$162.8	\$162.5	
Adjusted EBITDA from continuing operations ⁽²⁾	\$196.9	\$197.9	\$178.4	\$162.0	\$164.8	
Percent of Net Sales						
Gross profit	26.7	% 28.9	% 30.7	% 29.6	% 27.6	%
Nonmanufacturing expenses	13.6	% 15.0	% 14.6	% 13.7	% 12.5	%
Financial Position						
Capital spending	\$27.0	\$37.2	\$27.8	\$24.2	\$35.1	
Depreciation and amortization	61.6	59.5	44.5	41.0	45.1	
Total assets	1,466.5	1,542.5	1,173.7	1,290.0	1,185.0	
Total debt	622.1	684.2	440.4	571.5	437.9	
Total debt to capital ratio	52.7	% 55.6	% 46.4	% 55.0	% 47.2	%

(1) In March 2017, the FASB issued ASU 2017-07, "Compensation - Retirement Benefits (Topic 715): Improving the Presentation of Net Periodic Pension Cost and Net Periodic Postretirement Benefit Cost." The amendment

requires an employer to report the service cost component in the same line item or line items as other compensation costs arising from services rendered by the pertinent employees during the period. The other components of net benefit cost are required to be presented in the income statement separately from the service cost component and outside a subtotal from operations. The Company adopted this ASU effective January 1, 2018, utilizing the retrospective transition approach upon adoption. The adoption of this guidance resulted in a reclassification of the components of net periodic pension cost, other than service cost, from Cost of products sold and General expense to Other income (expense), net, in the Consolidated Statements of Income. The reclassification of these costs affects only the EP segment, as there are no pension costs associated with the AMS segment. For the years ended December 31, 2017, 2016, 2015 and 2014, respectively, \$3.6 million, \$3.9 million, \$3.4 million and \$0.5 million in pension expense were reclassified from Operating profit to Other expense in the condensed consolidated statement of income for the 2017, 2016, 2015 and 2014 comparative periods. The adoption of this guidance had no effect on Net income in the Consolidated Statements of Income and no effect on the other consolidated financial statements.

Earnings before interest, taxes, depreciation and amortization ("EBITDA") from Continuing Operations is a non-GAAP financial measure that is calculated by adding interest expense, income tax provision and depreciation and amortization expense to income from continuing operations. Adjusted EBITDA from Continuing Operations is a non-GAAP financial measure that is calculated by adding restructuring and impairment expense, Loss (income) from equity affiliates and Other (income) expense, net to EBITDA from continuing operations. We caution investors that amounts presented in accordance with our definitions of EBITDA from Continuing Operations and (2) Adjusted EBITDA from Continuing Operations may not be comparable to similar measures disclosed by our competitors, because not all companies and analysts calculate EBITDA from Continuing Operations and Adjusted EBITDA from Continuing Operations in the same manner. We present EBITDA from Continuing Operations and Adjusted EBITDA from Continuing Operations because we consider them to be important supplemental measures of our performance and believe they are frequently used by securities analysts, investors and other interested parties in the evaluation of companies in our industry. Reconciliations to income from continuing operations are as follows (\$ in millions):

	For the Years Ended December 31,				
	2018	2017	2016	2015	2014
Income from continuing operations	\$94.8	\$34.4	\$82.8	\$90.5	\$89.7
Plus: Interest expense	28.2	26.9	16.6	9.7	7.2
Plus: Income tax provision	10.7	69.6	15.4	21.6	20.5
Plus: Depreciation and amortization	60.2	61.5	42.8	41.0	45.1
EBITDA from continuing operations	193.9	192.4	157.6	162.8	162.5
Plus: Restructuring and impairment expense	1.7	8.1	25.6	14.6	13.1
Plus: Loss (income) from equity affiliates	11.3	(2.5)	(4.8)	(6.6)	(2.0)
Plus: Other (income) expense, net	(10.0)	(0.1)	—	(8.8)	(8.8)
Adjusted EBITDA from continuing operations	\$196.9	\$197.9	\$178.4	\$162.0	\$164.8

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

The following is a discussion of our financial condition and results of operations. This discussion should be read in conjunction with our consolidated financial statements and related notes included elsewhere in this Annual Report on Form 10-K and the selected financial data included in Part II, Item 6, "Selected Financial Data" of this Annual Report on Form 10-K. The discussion of our financial condition and results of operations includes various forward-looking statements about our markets, the demand for our products and our future prospects. These statements are based on certain assumptions that we consider reasonable. For information about risks and exposures relating to us and our business, you should read the sections entitled "Factors That May Affect Future Results," in Part I, Item 1A of this Annual Report on Form 10-K and "Forward Looking Statements" at the end of this Item 7. Unless the context indicates otherwise, references to "SWM," the "Company," "we," "us," "our," or similar terms include Schweitzer-Mauduit International, Inc. and our consolidated subsidiaries.

This Management's Discussion and Analysis of Financial Condition and Results of Operations is designed to provide a reader of our financial statements with an understanding of our recent performance, our financial condition and our prospects. The following will be discussed and analyzed:

- SUMMARY;
- CRITICAL ACCOUNTING POLICIES AND ESTIMATES;
- RECENT ACCOUNTING PRONOUNCEMENTS;
- RESULTS OF OPERATIONS;
- LIQUIDITY AND CAPITAL RESOURCES;
- OTHER FACTORS AFFECTING LIQUIDITY AND CAPITAL RESOURCES;
- OUTLOOK; and
- FORWARD-LOOKING STATEMENTS.

SUMMARY

In 2018, SWM reported net income of \$94.5 million on total net sales of \$1,041.3 million. Compared to the prior year, net sales increased \$59.2 million due primarily to an increase in organic sales in both AMS and EP as well as incremental net sales from the acquired Conwed business and favorable net foreign currency impacts.

Net income increased to \$94.5 million in 2018 compared to \$34.5 million in 2017. Outside of typical business drivers, several large one-time items affect the year-over-year comparison. In 2018, these items included a \$15.0 million (after-tax) impairment of the Company's interest in one of its joint ventures in China, a \$7.7 million (after-tax) favorable revaluation of a contingent consideration liability related to the Conwed acquisition, and a favorable \$13.0 million tax adjustment related to the Tax Act. 2017 Net income included net expenses of \$39.6 million related to the Tax Act and other tax valuation allowances and one-time expenses. Business trends that were key drivers of year-over-year financial performance included sales growth in both segments, which was offset by higher raw material costs for both wood pulp for EP and resin for AMS, as well as manufacturing inefficiencies and expenses associated with an AMS site closure.

Cash provided by operations was \$139.1 million in 2018 compared to \$131.0 million in 2017. Uses of cash during 2018 included \$61.1 million in net debt repayments, \$53.2 million in cash dividends paid to SWM stockholders and \$27.0 million of capital spending.

CRITICAL ACCOUNTING POLICIES AND ESTIMATES

We disclose those accounting policies that we consider to be significant in determining the amounts to be utilized for communicating our consolidated financial position, results of operations and cash flows in the first note to our consolidated financial statements included elsewhere herein. Our discussion and analysis of our financial condition and results of operations are based on our consolidated financial statements. Our consolidated financial statements are prepared in conformity with accounting principles generally accepted in the U.S., which require management to make estimates that affect the amounts of revenues, expenses, assets and liabilities reported and disclosure of contingencies. Changes in these estimates could have a significant impact on our financial position, results of operations, and cash flows. We discussed with the Audit Committee of the Board of Directors the estimates and judgments made for each of the following items and our accounting for and presentation of these items in the accompanying financial statements:

Accounting for Income Taxes

Our income tax expense, deferred tax assets and liabilities, and liabilities for unrecognized tax benefits reflect management's best estimate of current and future taxes to be paid. We are subject to income taxes in the U.S. and numerous foreign jurisdictions. Significant judgments and estimates are required in the determination of the consolidated income tax expense.

Deferred income taxes arise from temporary differences between the tax basis of assets and liabilities and their reported amounts in the financial statements, which will result in taxable or deductible amounts in the future. In evaluating our ability to recover our deferred tax assets in the jurisdiction from which they arise, we consider all available positive and negative evidence, including scheduled reversals of deferred tax liabilities, projected future taxable income, tax-planning strategies, and results of recent operations. In projecting future taxable income, we begin with historical results adjusted for the results of discontinued operations and incorporate assumptions about the amount of future state, federal, and foreign pretax operating income adjusted for items that do not have tax consequences. The assumptions about future taxable income require the use of significant judgment and are consistent with the plans and estimates we are using to manage the underlying businesses. In evaluating the objective evidence that historical results provide, we consider three years of cumulative operating income (loss).

The calculation of our tax liabilities involves dealing with uncertainties in the application of complex tax laws and regulations in a multitude of jurisdictions across our global operations. Accounting Standards Codification Topic No. 740, Income Taxes ("ASC 740"), states that a tax benefit from an uncertain tax position may be recognized when it is more likely than not that the position will be sustained upon examination, including resolutions of any related appeals or litigation processes, on the basis of the technical merits. We (1) record unrecognized tax benefits as liabilities in accordance with ASC 740 and (2) adjust these liabilities when our judgment changes as a result of the evaluation of new information not previously available. Because of the complexity of some of these uncertainties, the ultimate resolution may result in a payment that is materially different from our current estimate of the unrecognized tax benefit liabilities. These differences will be reflected as increases or decreases to income tax expense in the period in which new information is available.

On December 22, 2017, the Tax Cut and Jobs Act (the "Tax Act") was enacted into law effective January 1, 2018. The new legislation contains several key tax provisions that affected the Company, and include but are not limited to a one-time deemed repatriation tax on post-1986 accumulated earnings and profits of the foreign subsidiary undistributed earnings ("transition tax"), a reduction of the federal corporate income tax rate from 35% to 21%, and a new provision designed to tax Global Intangible Low Taxed Income ("GILTI") of foreign subsidiaries effective January 1, 2018. As a result of the GILTI provision, the FASB issued Staff Q&A Topic 740, No. 5 "Accounting for Global Intangible Low-Taxed Income" requiring an entity to make an accounting policy election to either recognize deferred taxes for temporary basis differences expected to reverse as GILTI in future years or to provide for the tax expense

related to GILTI in the year the tax is incurred as a period expense only. We have elected to account for GILTI as a current period expense when incurred.

In December 2017, the SEC staff issued Staff Accounting Bulletin No. 118, Income Tax Accounting Implications of the Tax Cuts and Jobs Act (“SAB 118”), which allowed us to record provisional amounts during the measurement

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period, not to extend beyond one year of the enactment date. We recognized the effect of the tax law changes in the period of enactment; reported the transition tax, re-measured the U.S. deferred tax assets and liabilities and reassessed the ability to realize our net deferred tax assets and liabilities. As of December 31, 2018, we have completed our accounting for the tax effects of the Tax Act.

Revenue Recognition

We have two main sources of revenue: product sales and materials conversion. We recognize product sales revenues when control of a product is transferred to the customer. For the majority of product sales, transfer of control occurs when the products are shipped from one of our manufacturing facilities to the customer. The cost of delivering finished goods to our customers is recorded as a component of cost of products sold. Those costs include the amounts paid to a third party to deliver the finished goods. Any freight costs billed to and paid by a customer are included in net sales. We also provide services to customers through the conversion of customer-owned raw materials into processed finished goods. In these transactions, we generally recognize revenue as processing is completed.

Revenue is recognized when performance obligations under the terms of a contract with a customer are satisfied, which generally occurs when control of the promised goods or services is transferred to the customer, in an amount that reflects the consideration we expect to be entitled to in exchange for those goods or services. Generally, we consider collectability of amounts due under a contract to be probable upon inception of a sale based on an evaluation of the credit worthiness of each customer. If collectability is not considered to be probable, we defer recognition of revenue on satisfied performance obligations until the uncertainty is resolved. Any variable consideration, such as discounts or price concessions, is set forth in the terms of the contract at inception, and is included in the assessment of the transaction price at the outset of the arrangement. The transaction price is allocated to the individual performance obligations due under the contract based on the relative stand-alone fair value of the performance obligations identified in the contract. We typically use an observable price to determine the stand-alone selling price for separate performance obligations.

We do not typically include extended payment terms or significant financing components in our contracts with customers. Certain product sales contracts may include cash-based incentives (volume rebates or credits), which are accounted for as variable consideration. We estimate these amounts at least quarterly based on the expected forecast quantities to be provided to customers and reduce revenues recognized accordingly. Incidental items that are immaterial in the context of the contract are recognized as expense in the period incurred. We generally expense sales commissions when incurred because the amortization period is one year or less. These costs are recorded within sales and marketing expenses. We do not disclose the value of unsatisfied performance obligations for (i) contracts with an original expected length of one year or less and (ii) contracts for which we recognize revenue at the amount to which we have the right to invoice for services performed. As a practical expedient, we treat shipping and handling activities that occur after control of the good transfers as fulfillment activities, and therefore, does not account for shipping and handling costs as a separate performance obligation.

Accounting for Contingencies

We accrue an estimated loss by taking a charge to income when the likelihood that a future event, such as a legal proceeding, will result in a loss or the incurrence of a liability is probable and the amount of loss can be reasonably estimated. We disclose material contingencies if there is at least a reasonable possibility that a loss has been incurred. In determining whether a loss should be accrued, we evaluate, among other factors, the degree of probability of an unfavorable outcome and the ability to make a reasonable estimate of the amount of loss. Changes in these factors could materially impact our financial condition, results of operations, and our cash flows.

For further information, please see "Litigation" in Part I, Item 3, "Legal Proceedings" and Note 20. Commitments and Contingencies, of the Notes to Consolidated Financial Statements.

Property, Plant and Equipment Valuation

Our manufacturing processes are capital intensive; as a result, we make substantial investments in property, plant and equipment which are recorded at cost. Net property, plant and equipment comprised 23% of our total assets as of December 31, 2018. Property, plant and equipment is depreciated on the straight-line method over the estimated useful lives of the assets. Production machines and related equipment are not subject to substantial technological changes rendering them obsolete and are generally depreciated over estimated useful lives of 10 to 20 years. When indications of impairment exist, we assess the likelihood of recovering the cost of long-lived assets based on our expectation of future profitability and undiscounted cash flow of the related asset group. These factors, along with management's plans with respect to the operations, are considered in assessing the recoverability of property, plant and equipment. Changes in management's estimates and plans could significantly impact our financial condition, results of operations and cash flows.

As a result of excess capacity in the tobacco-related papers industry and increased purchased material and operating costs experienced in the last several years, competitive selling prices for certain of our products are not sufficient to cover our costs with a reasonable margin. Such competitive pressures have resulted in downtime of certain paper machines and, in some cases, accelerated depreciation or impairment of certain equipment. We have also incurred restructuring costs in our AMS segment in pursuit of synergies from integrating our acquisitions. Over the past six years, we have restructured our operations to improve our competitiveness and profitability. As a result, we incurred significant charges related to asset impairments, accelerated depreciation and employee severances.

In 2011, the Company revised its plans for RTL expansion in Asia and suspended the construction of the Philippine greenfield site. In 2015, the Company made the decision to dispose of the facility and related equipment. Based on an updated estimate of the fair value of the equipment in 2015, the Company recorded an additional impairment charge of \$5.2 million. During 2015, the net book value of the RTL Philippines property, plant and equipment was reclassified as Assets held for sale in the Company's Consolidated Balance Sheets. The Company reviews these assets at each reporting period and would recognize an impairment charge for the excess of carrying value of the assets over the fair value less any costs to sell. The Company did not record any additional impairment charges during 2016. During 2017, the Company recognized additional impairment charges of \$4.0 million related to the RTL Philippines assets. The Company did not record any additional impairment charges during 2018. The net book value of the RTL Philippines property, plant and equipment was \$12.0 million as of December 31, 2018.

Management continues to evaluate how to operate our production facilities more effectively. Further restructuring actions are possible that might require additional impairments or accelerated depreciation of some equipment.

Business Combinations

Accounting for business combinations requires us to recognize, separately from goodwill, the assets acquired and the liabilities assumed ("net assets") at their acquisition date fair values. Goodwill is measured as the excess of consideration transferred over the net assets acquired at their respective fair values as of the acquisition date. The estimated fair values are based upon quoted market prices and widely accepted valuation techniques, which require significant estimates and assumptions including, but not limited to, estimating future cash flows and developing appropriate discount rates. While we use our best estimates and assumptions to accurately value assets acquired and liabilities assumed at the acquisition date, our estimates are inherently uncertain and subject to refinement. As a result, during the measurement period, which may be up to one year from the acquisition date, we may record adjustments to the assets acquired and liabilities assumed with the corresponding adjustment to goodwill, based on new information obtained about the facts and circumstances that existed as of the acquisition date. Upon the conclusion of the measurement period or final determination of the values of net assets acquired, whichever comes first, any subsequent adjustments are recorded to our consolidated financial statements. See Note 4. Business Acquisitions, of the Notes to Consolidated Financial Statements for additional information.

Investments in Equity Affiliates

Investments in companies which we do not control but over which we have the ability to exercise significant influence and that, in general, are at least 20 percent-owned by us, are stated at cost plus equity in undistributed net income. These investments are evaluated for impairment when warranted. An impairment loss would be recorded whenever a decline in value of an equity investment below its carrying amount is determined to be other than temporary. In judging "other than temporary," we would consider the length of time and extent to which the fair value of the equity company investment has been less than the carrying amount, the near-term and longer-term operating and financial prospects of the equity company, and our longer-term intent of retaining the investment in the equity company. See Note 9. Joint Ventures, of the Notes to Consolidated Financial Statements for additional information.

Goodwill and Unamortized Intangible Assets

Goodwill is not subject to amortization and is tested for impairment annually, or more frequently if events or changes in circumstances indicate that the asset may be impaired. Goodwill is measured as the excess of consideration transferred over the net assets acquired at their respective fair values as of the acquisition date. Goodwill is tested for impairment at the reporting unit level. Fair value of a reporting unit is typically based upon estimated future cash flows discounted at a rate commensurate with the risk involved or market-based comparables. If the carrying amount of the reporting unit's net assets exceeds its fair value, then an analysis will be performed to compare the implied fair value of goodwill with the carrying amount of goodwill. An impairment loss will be recognized in an amount equal to the excess of the carrying amount over its implied fair value. After an impairment loss is recognized, the adjusted carrying amount of goodwill is its new accounting basis. The annual impairment tests performed on October 1, 2018 and 2017 did not indicate any impairment of goodwill.

Intangible assets with finite lives are amortized over their estimated useful lives and are reviewed for impairment whenever events or changes in circumstances indicate that their carrying amount may not be recoverable. An impairment loss would be indicated when estimated undiscounted future cash flows from the use of the asset are less than its carrying amount. An impairment loss would be measured as the difference between the fair value (based on discounted future cash flows) and the carrying amount of the asset. Estimated useful lives range from 10 to 23 years for customer relationships and 4 to 20 years for developed technology, patents and other intangible assets. Certain trade names are estimated to have indefinite useful lives and as such are not amortized. Intangible assets with indefinite lives are reviewed for impairment following a method similar to the impairment testing for Goodwill. Testing of these assets is performed annually and whenever events and circumstances indicate that impairment may have occurred.

RECENT ACCOUNTING PRONOUNCEMENTS

For a discussion regarding recent accounting pronouncements, see "Recent Accounting Pronouncements" included in Note 2. Summary of Significant Accounting Policies, of the Notes to Consolidated Financial Statements.

RESULTS OF OPERATIONS

	For the Years Ended December 31,		
	2018	2017 ⁽¹⁾	2016
	(\$ in millions, except per share amounts)		
Net sales	\$1,041.3	\$982.1	\$839.9
Cost of products sold	762.8	698.7	582.0
Gross profit	278.5	283.4	257.9
Selling expense	35.7	33.3	25.3
Research expense	15.2	17.8	17.5
General expense	90.9	95.9	79.5
Total nonmanufacturing expenses	141.8	147.0	122.3
Restructuring and impairment expense	1.7	8.1	25.6
Operating profit	135.0	128.3	110.0
Interest expense	28.2	26.9	16.6
Other income, net	10.0	0.1	—
Income from continuing operations before income taxes and income from equity affiliates	116.8	101.5	93.4
Provision for income taxes	10.7	69.6	15.4
(Loss) income from equity affiliates, net of income taxes	(11.3) 2.5	4.8
Income from continuing operations	94.8	34.4	82.8
(Loss) gain from discontinued operations	(0.3) 0.1	—
Net income	\$94.5	\$34.5	\$82.8
Net income (loss) per share - basic:			
Income per share from continuing operations	\$3.08	\$1.12	\$2.71
Loss per share from discontinued operations	(0.01) —	—
Net income per share - basic	\$3.07	\$1.12	\$2.71
Net income (loss) per share - diluted:			
Income per share from continuing operations	\$3.07	\$1.12	\$2.70
Loss per share from discontinued operations	(0.01) —	—
Net income per share - diluted	\$3.06	\$1.12	\$2.70

⁽¹⁾ Results during the year ended December 31, 2017 include Conwed from the January 20, 2017 acquisition date to December 31, 2017.

Year Ended December 31, 2018 Compared with the Year Ended December 31, 2017

Net Sales

(dollars in millions)

	2018	2017	Change	Percent Change
Advanced Materials & Structures	\$467.9	\$433.2	\$ 34.7	8.0 %
Engineered Papers	573.4	548.9	24.5	4.5
Total	\$1,041.3	\$982.1	\$ 59.2	6.0 %

Net sales were \$1,041.3 million in 2018 compared with \$982.1 million in 2017. The increase in net sales consisted of the following (dollars in millions):

	Amount	Percent
Changes in product mix, selling prices and sales volumes	\$ 41.7	4.2 %
Changes in currency exchange rates	17.6	1.8
Changes in royalties	(0.1)	—
Total	\$ 59.2	6.0 %

AMS segment net sales were \$467.9 million for 2018 compared to \$433.2 million during 2017. The increase of \$34.7 million or 8.0% was due primarily to an increase in organic sales of \$27.0 million (or 6.2%), led by strong growth in filtration, particularly for RO water filtration products. The Company's sales in transportation, driven by surface protection films, and medical were also key growth drivers. Infrastructure and construction and industrial sales were generally flat with prior year. The Company had a \$7.7 million partial period benefit from net sales generated by the operations of our Conwed business.

The EP segment net sales during the year ended December 31, 2018 of \$573.4 million increased by \$24.5 million, or 4.5%, versus net sales of \$548.9 million in the prior year. The increase in net sales was primarily the result of the favorable net foreign currency impacts of \$14.9 million, mainly from a stronger euro and the \$9.9 million combined net favorable impact of changes in volumes, mix of products sold and average selling prices, in each case compared to the prior year. The company benefited from a more favorable mix of products sold as a result strong performance of LIP and other cigarette papers as well as specialty battery papers, and de-emphasizing and/or exiting significant volumes of certain low-margin non-tobacco papers.

Gross Profit

(dollars in millions)

	2018	2017	Change	Percent Change	Percent of Net Sales	
					2018	2017
Net sales	\$1,041.3	\$982.1	\$ 59.2	6.0 %	100.0%	100.0%
Cost of products sold	762.8	698.7	64.1	9.2	73.3	71.1
Gross profit	\$278.5	\$283.4	\$(4.9)	(1.7)%	26.7 %	28.9 %

Gross profit for the year ended December 31, 2018 decreased by \$4.9 million, or 1.7%, to \$278.5 million from \$283.4 million in the prior year. AMS gross profit decreased by \$1.1 million, primarily due higher input costs, particularly resin, and manufacturing inefficiencies and expenses associated with the closure of one site and the transition of those volumes to the Company's other facilities, which combined to offset sales growth. In the EP segment, gross profit decreased by \$3.8 million, primarily due to higher raw materials costs, particularly wood pulp and energy, which offset

sales growth, improved manufacturing efficiencies compared to the prior year period, and favorable currency movements.

Nonmanufacturing Expenses
(dollars in millions)

	2018	2017	Change	Percent Change	Percent of Net Sales	
					2018	2017
Selling expense	\$35.7	\$33.3	\$ 2.4	7.2 %	3.4 %	3.4 %
Research expense	15.2	17.8	(2.6)	(14.6)	1.5	1.8
General expense	90.9	95.9	(5.0)	(5.2)	8.7	9.8
Nonmanufacturing expenses	\$141.8	\$147.0	\$ (5.2)	(3.5)%	13.6%	15.0%

Nonmanufacturing expenses in the year ended December 31, 2018 decreased by \$5.2 million, or 3.5%, to \$141.8 million from \$147.0 million in the prior year due primarily to lower professional service fees and certain general expenses.

Restructuring and Impairment Expense
(dollars in millions)

	2018	2017	Change	Percent Change	Percent of Net Sales	
					2018	2017
Advanced Materials & Structures	\$1.5	\$2.7	\$(1.2)	(44.4)%	0.3%	0.6%
Engineered Papers	0.2	5.3	(5.1)	(96.2)	—	1.0
Unallocated expenses	—	0.1	(0.1)	(100.0)		
Total	\$1.7	\$8.1	\$(6.4)	(79.0)%	0.2%	0.8%

The Company incurred total restructuring and impairment expense of \$1.7 million in the year ended December 31, 2018, compared to \$8.1 million in the year ended December 31, 2017, a decrease of \$6.4 million or 79.0%. In the year ended December 31, 2018, restructuring and impairment expenses consisted of \$1.3 million in severance accruals for employees at our U.S. and French manufacturing operations, as well as \$0.4 million in impairment charges at our U.S. manufacturing facilities.

In the year ended December 31, 2017, restructuring and impairment expenses consisted of \$3.5 million related to severance expenses in the French, Belgian and U.S. operations for ongoing accruals over the remaining service lives of affected employees related to previously announced actions as well as \$4.0 million of impairment charges to certain of our RTL Philippines physical assets and \$0.6 million in impairment charges for manufacturing equipment at our French and U.S. manufacturing facilities.

Operating Profit
(dollars in millions)

	2018	2017	Change	Percent Change		Return on Net Sales	
						2018	2017
Advanced Materials & Structures	\$49.5	\$48.5	\$ 1.0	2.1	%	10.6%	11.2%
Engineered Papers	121.8	119.7	2.1	1.8		21.2	21.8
Unallocated expenses	(36.3)	(39.9)	3.6	9.0			
Total	\$135.0	\$128.3	\$ 6.7	5.2	%	13.0%	13.1%

Operating profit was \$135.0 million in the year ended December 31, 2018 compared with \$128.3 million during the prior year.

The AMS segment's operating profit in the year ended December 31, 2018 was \$49.5 million compared to \$48.5 million in the prior year period. The increase of \$1.0 million in the AMS segment's operating profit during the year ended December 31, 2018 compared to the prior-year period was positively impacted by sales growth, \$1.2 million of lower restructuring and impairment expenses and SG&A cost reductions, partially offset by lower gross profits due to higher input costs and certain manufacturing inefficiencies.

The EP segment's operating profit in the year ended December 31, 2018 was \$121.8 million, an increase of \$2.1 million, or 1.8%, from \$119.7 million in the prior year. The increase was primarily due to sales growth, positive currency movements and \$5.1 million of lower restructuring and impairment expenses, partially offset by higher input costs.

Unallocated expenses in the year ended December 31, 2018 were \$36.3 million, down \$3.6 million, or 9.0%, from the \$39.9 million in the prior year period. The decrease was primarily due to lower professional service fees and deferred compensation expense, which decreased due to stock price volatility during the fourth quarter of 2018.

Non-Operating Expenses, Net

Interest expense was \$28.2 million in the year ended December 31, 2018, an increase of \$1.3 million from \$26.9 million in the year ended December 31, 2017. The increase in interest expense is primarily due to a higher average interest rate compared to the prior year as a result of increases in market rates and the addition of the senior secured notes, partially offset by a lower total debt balance as of December 31, 2018 compared to the prior year. The weighted average effective interest rate on our debt facilities was approximately 4.20% and 3.45% for the years ended December 31, 2018 and 2017, respectively.

Other income, net was \$10.0 million during the year ended December 31, 2018 compared to \$0.1 million during the year ended December 31, 2017. The \$9.9 million increase in other income, net, was due primarily to the \$10.2 million decrease in the fair value of the contingent consideration liability related to the Conwed acquisition, as discussed in Note 4. Business Acquisitions.

Income Taxes

A \$10.7 million and \$69.6 million provision for income taxes in the years ended December 31, 2018 and 2017, respectively, resulted in an effective tax rate of 9.2% compared with 68.6% in the prior year. The Company's effective tax rates differ from the statutory federal income tax rate of 21% due to varying tax rates in foreign jurisdictions, the relative amounts of income we earn in those jurisdictions and year over year adjustments due to U.S. tax reform, including a \$13 million reduction to the one-time transition tax netted against discrete tax adjustments and the revaluation of the deferred taxes to reflect lower federal corporate tax rates.

(Loss) Income from Equity Affiliates

Loss from equity affiliates, net of income taxes, was \$11.3 million in the year ended December 31, 2018 compared with income of \$2.5 million during the prior year and reflected the results of operations of CTM and CTS. The decrease in earnings was driven primarily by the \$15.0 million impairment of the CTS equity method investment, as discussed further in Note 9. Joint Ventures.

Discontinued Operations

Because we closed our Philippines plant as previously reported, the results of this plant were reported as discontinued operations for all periods presented. Consequently, this plant's results have been removed from each line of the statements of income and the operating activities section of the statements of cash flow. In each case, a separate line has been added for the net results of the discontinued operation. Loss from discontinued operations was \$0.3 million versus income of \$0.1 million for the years ended December 31, 2018 and 2017, respectively. These amounts are primarily the result of the Company's efforts to dispose of the remaining assets and liabilities of the discontinued operations.

Net Income and Income per Share

Net income in the year ended December 31, 2018 was \$94.5 million, or \$3.06 per diluted share, compared with \$34.5 million, or \$1.12 per diluted share, during the prior year period. The increase in net income was primarily due to the benefit of higher organic sales in our AMS segment, a lower income tax provision in 2018, primarily related to the enactment of the Tax Act on December 22, 2017, and higher Other income from the revaluation of a contingent consideration liability related to the Conwed acquisition, partially offset by a loss from equity affiliates due to the impairment of our CTS equity method investment and higher input costs.

Year Ended December 31, 2017 Compared with the Year Ended December 31, 2016

Net Sales

(dollars in millions)

	2017	2016	Change	Percent Change
Advanced Materials & Structures	\$433.2	\$280.6	\$152.6	54.4 %
Engineered Papers	548.9	559.3	(10.4)	(1.9)
Total	\$982.1	\$839.9	\$142.2	16.9 %

Net sales were \$982.1 million in 2017 compared with \$839.9 million in 2016. The increase in net sales consisted of the following (dollars in millions):

	Amount	Percent
Incremental AMS segment revenue from acquisitions	\$141.3	16.8 %
Changes in currency exchange rates	8.6	1.0
Changes in royalties	(4.6)	(0.5)
Changes in product mix, selling prices and sales volumes	(3.1)	(0.4)
Total	\$142.2	16.9 %

AMS segment net sales were \$433.2 million for 2017 compared to \$280.6 million during 2016. The increase of \$152.6 million or 54.4% was due primarily to \$141.3 million in incremental net sales generated by the operations of our Conwed business and an increase in organic sales of \$11.4 million, led by strong growth in transportation, mainly from surface protection films, as well as gains in industrial and medical sales; this growth was partially offset by softness in filtration sales.

The EP segment net sales during the year ended December 31, 2017 of \$548.9 million decreased by \$10.4 million, or 1.9%, versus net sales of \$559.3 million in the prior year. The decrease in net sales was primarily the result of the \$14.5 million net combined unfavorable impact of changes in volumes, mix of products sold and average selling prices, and \$4.6 million of lower royalty income, partially offset by favorable net foreign currency impacts of \$8.7 million, mainly from a stronger euro, in each case compared to the prior year.

Gross Profit

(dollars in millions)

	2017	2016	Change	Percent Change	Percent of Net Sales	
					2017	2016
Net sales	\$982.1	\$839.9	\$142.2	16.9 %	100.0%	100.0%
Cost of products sold	698.7	582.0	116.7	20.1	71.1	69.3
Gross profit	\$283.4	\$257.9	\$25.5	9.9 %	28.9 %	30.7 %

Gross profit for the year ended December 31, 2017 increased by \$25.5 million, or 9.9% to \$283.4 million from \$257.9 million in the prior year. AMS gross profit increased by \$46.8 million, primarily due to the incremental gross profit associated with the operations of our newly acquired Conwed business, along with organic sales growth and a favorable mix of products sold, partially offset by certain manufacturing inefficiencies and higher input costs. In the EP segment, gross profit decreased by \$21.3 million, primarily due to the unfavorable impact of lower sales combined with the lower sales volume's associated impact on manufacturing efficiencies and overhead absorption compared to the prior-year period.

Nonmanufacturing Expenses
(dollars in millions)

	2017	2016	Change	Percent Change	Percent of Net Sales	
					2017	2016
Selling expense	\$33.3	\$25.3	\$ 8.0	31.6 %	3.4 %	3.0 %
Research expense	17.8	17.5	0.3	1.7	1.8	2.1
General expense	95.9	79.5	16.4	20.6	9.8	9.5
Nonmanufacturing expenses	\$147.0	\$122.3	\$ 24.7	20.2 %	15.0%	14.6%

Nonmanufacturing expenses in the year ended December 31, 2017 increased by \$24.7 million, or 20.2%, to \$147.0 million from \$122.3 million in the prior year due primarily to incremental costs from the operations of our acquired Conwed business.

Restructuring and Impairment Expense
(dollars in millions)

	2017	2016	Change	Percent Change	Percent of Net Sales	
					2017	2016
Advanced Materials & Structures	\$2.7	\$21.3	\$(18.6)	(87.3)%	0.6%	7.6%
Engineered Papers	5.3	4.0	1.3	32.5	1.0	0.7
Unallocated expenses	0.1	0.3	(0.2)	(66.7)		
Total	\$8.1	\$25.6	\$(17.5)	(68.4)%	0.8%	3.0%

The Company incurred total restructuring and impairment expense of \$8.1 million in the year ended December 31, 2017, compared to \$25.6 million in the year ended December 31, 2016, a decrease of \$17.5 million or 68.4%. In the year ended December 31, 2017, restructuring and impairment expenses consisted of \$3.5 million related to severance expenses in the French, Belgian and U.S. operations for ongoing accruals over the remaining service lives of affected employees related to previously announced actions as well as \$4.0 million of impairment charges to certain of our RTL Philippines physical assets and \$0.6 million in impairment charges for manufacturing equipment at our French and U.S. manufacturing facilities.

In the year ended December 31, 2016, restructuring and impairment expenses consisted of \$4.3 million related to severance expenses in the French, Brazilian and U.S. operations for ongoing accruals over the remaining service lives of affected employees related to previously announced actions as well as \$0.6 million of impairment charges to certain of our Polish manufacturing equipment. Additionally, in the fourth quarter of 2016, in line with the Company's rebranding strategy, it was determined that use of the DelStar trade name would be discontinued in 2017. As a result, a \$20.7 million impairment charge was recognized to adjust the carrying value of the DelStar trade name intangible asset to its estimated fair value as of December 31, 2016, based on expected future cash flows to be realized from the use of the trade name. The remaining value of this intangible was amortized in the first six months of 2017.

Operating Profit
(dollars in millions)

	2017	2016	Change	Percent Change	Return on Net Sales	
					2017	2016
Advanced Materials & Structures	\$48.5	\$9.0	\$39.5	N.M.	11.2%	3.2%
Engineered Papers	119.7	141.9	(22.2)	(15.6)	21.8	25.4
Unallocated expenses	(39.9)	(40.9)	1.0	(2.4)		
Total	\$128.3	\$110.0	\$18.3	16.6%	13.1%	13.1%

N.M. - Not Meaningful

Operating profit was \$128.3 million in the year ended December 31, 2017 compared with \$110.0 million during the prior year.

The AMS segment's operating profit in the year ended December 31, 2017 was \$48.5 million compared to \$9.0 million in the prior year period. The increase of \$39.5 million in the AMS segment's operating profit during the year ended December 31, 2017 compared to the prior-year period was positively impacted by \$18.6 million in decreased restructuring and impairment expenses due primarily to the prior-year's tradename impairment and \$19.5 million in incremental operating profit associated with our newly acquired Conwed business and organic net sales growth and associated gross profits.

The EP segment's operating profit in the year ended December 31, 2017 was \$119.7 million, a decrease of \$22.2 million, or 15.6%, from \$141.9 million in the prior year. The decrease was primarily due to overall sales volume decline. Lower RTL and overall cigarette paper volumes were partially offset by growth of non-tobacco paper, and positive currency movements offset anticipated lower LIP royalties.

Unallocated expenses in the year ended December 31, 2017 were \$39.9 million, down \$1.0 million, or 2.4%, from the \$40.9 million in the prior year period. The decrease was primarily due to lower professional fees.

Non-Operating Expenses

Interest expense was \$26.9 million in the year ended December 31, 2017, an increase of \$10.3 million from \$16.6 million in the year ended December 31, 2016. The increase in interest expense is primarily due to higher average debt balances outstanding compared to the prior year in connection with the Conwed acquisition as well as the effect of the higher effective interest rate applied to borrowings under our amended credit agreement executed in January 2017 when compared to our previous credit agreement. The weighted average effective interest rate on our debt facilities was approximately 3.45% and 2.42% for the year ended December 31, 2017 and 2016, respectively.

Other income, net was \$0.1 million during the year ended December 31, 2017 compared to \$0.0 million during the year ended December 31, 2016. The \$0.1 million decrease in other income, net, was due primarily to higher net currency losses in the current year, partially offset by lower transactional taxes incurred in Brazil in 2017 and lower losses incurred on the sale of assets at our Philippines site.

Income Taxes

A \$69.6 million and \$15.4 million provision for income taxes in the years ended December 31, 2017 and 2016, respectively, resulted in an effective tax rate of 68.6% compared with 16.5% in the prior year. The Company's effective tax rates differ from the statutory federal income tax rate of 35% due to varying tax rates in foreign jurisdictions, the relative amounts of income we earn in those jurisdictions, and additional taxes due to earnings intended to be indefinitely reinvested outside the U.S. On December 22, 2017, the Tax Act was enacted into law and

the new legislation contains several key tax provisions that affected the Company, which include, but are not limited to, a one-time mandatory

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transition tax of \$48.7 million on accumulated foreign earnings and a reduction of the corporate income tax rate from 35% to 21% effective January 1, 2018.

Income from Equity Affiliates

Income from equity affiliates, net of income taxes, was \$2.5 million in the year ended December 31, 2017 compared with \$4.8 million during the prior year and reflected the results of operations of CTM and CTS. The decrease in earnings was driven primarily by lower sales volumes at CTS in 2017 compared to the prior-year period.

Discontinued Operations

Because we closed our Philippines plant as previously reported, the results of this plant were reported as discontinued operations for all periods presented. Consequently, this plant's results have been removed from each line of the statements of income and the operating activities section of the statements of cash flow. In each case, a separate line has been added for the net results of the discontinued operation.

Net Income and Income per Share

Net income in the year ended December 31, 2017 was \$34.5 million, or \$1.12 per diluted share, compared with \$82.8 million, or \$2.70 per diluted share, during the prior year period. The decrease in net income was primarily due to the unfavorable impact of the new tax legislation, the unfavorable impact of lower sales and associated gross profits in our EP segment, higher intangible asset amortization in our AMS segment as a result of the Conwed acquisition and higher interest expense. These factors were partially offset by the incremental operating profits from the Conwed acquisition, the favorable impact of higher organic sales and associated gross profits in our AMS segment and lower restructuring and impairment charges in 2017.

LIQUIDITY AND CAPITAL RESOURCES

A major factor in our liquidity and capital resource planning is our generation of cash flow from operations, which is sensitive to changes in the mix of products sold, volume and pricing of our products, as well as changes in our production volumes, costs and working capital. Our liquidity is supplemented by funds available under our revolving credit facility with a syndicate of banks that is used as either operating conditions or strategic opportunities warrant.

As of December 31, 2018, \$49.6 million of our \$93.8 million of cash and cash equivalents was held by foreign subsidiaries. Cash paid for income taxes (net of refunds) was \$23.2 million for the year ended December 31, 2018. On December 22, 2017, the Tax Act was enacted into law. The Tax Act imposes a mandatory transition tax on accumulated foreign earnings and eliminates U.S. taxes on foreign subsidiary distributions. At December 31, 2017, we recorded a provisional tax liability of \$48.7 million relating to the one-time mandatory transition tax on our accumulated foreign earnings, which we intend to pay over an eight-year payment schedule, as prescribed by the Tax Act. In the quarter ended September 30, 2018, we reduced the provisional tax liability by \$13.0 million. We do not expect the payment of the transition taxes over the next eight years to adversely affect our liquidity and resource planning. Additionally, the Tax Act is not expected to adversely impact our debt covenant compliance. We believe that our sources of liquidity and capital, including cash on-hand, cash generated from operations and our existing credit facilities, will be sufficient to finance our continued operations and growth strategy.

Capital spending for 2019 is projected to be approximately \$35.0 million to \$40.0 million. We generally fund our capital projects using cash on-hand, cash generated from operations and our existing credit facilities, including the New Credit Agreement, as defined below in "Debt Instruments and Related Covenants."

Cash Requirements

As of December 31, 2018, we had net operating working capital of \$195.2 million and cash and cash equivalents of \$93.8 million, compared with net operating working capital of \$184.2 million and cash and cash equivalents of \$106.9 million as of December 31, 2017. The 2018 year-over-year increase in net operating working capital is primarily due to increases in Accounts receivable and Income taxes receivable outstanding at December 31, 2018 compared to 2017, and decreases in Accrued expenses and Income taxes payable. These factors were partially offset by a decrease in Inventories and an increase in Accounts payable outstanding at December 31, 2018. Changes in the amounts that make up these balances also reflect the impacts of changes in currency exchange rates which are included in the changes in operating working capital presented on the Consolidated Statements of Cash Flow.

Cash Flows from Operations (\$ in millions)	For the Years Ended		
	December 31,		
	2018	2017	2016
Net income	\$94.5	\$34.5	\$82.8
Less: (Loss) gain from discontinued operations	(0.3)	0.1	—
Income from continuing operations	94.8	34.4	82.8
Non-cash items included in net income:			
Depreciation and amortization	61.6	59.5	44.5
Impairments	0.2	4.6	21.3
Deferred income tax provision (benefit)	7.5	1.6	(13.5)
Pension and other postretirement benefits	2.8	3.8	3.8
Stock-based compensation	4.8	7.1	5.8
Loss (income) from equity affiliates	11.3	(2.5)	(4.8)
Gain on sale of intangible assets	—	—	(1.8)
Gain on sale of assets	—	(4.9)	—
Long-term income tax payable	(12.0)	36.7	—
Change in fair value of contingent consideration	(10.2)	—	—
Excess tax benefits of stock-based awards	—	—	0.2
Cash dividends received from equity affiliates	2.0	1.8	3.0
Other items	0.4	0.7	(0.6)
Net changes in operating working capital	(24.3)	(11.9)	(11.0)
Net cash provided by operating activities of:			
Continuing operations	138.9	130.9	129.7
Discontinued operations	0.2	0.1	—
Cash provided by operations	\$139.1	\$131.0	\$129.7

Net cash provided by operations was \$139.1 million in the year ended December 31, 2018 compared with \$131.0 million in the prior year. Our net cash provided by operations increased primarily due to higher net income from continuing operations of \$20.5 million, adjusted for non-cash items which related primarily to the Loss from equity affiliate, Long-term income tax payable and the Change in fair value of contingent consideration. This was partially offset by a \$12.4 million unfavorable year-over-year impact of net changes in operating working capital.

Net cash provided by operations was \$131.0 million in the year ended December 31, 2017 compared with \$129.7 million in the prior year. Our net cash provided by operations increased primarily due to higher net income from continuing operations of \$2.2 million, adjusted for non-cash items which related primarily to the Long-term income tax payable. This was partially offset by a \$0.9 million unfavorable year-over-year impact of net changes in operating working capital.

Net cash provided by operations was \$129.7 million in the year ended December 31, 2016 compared with \$144.7 million in the prior year. Our net cash provided by operations decreased primarily due to a \$23.8 million unfavorable year-over-year impact of net changes in operating working capital, partially offset by higher net income from continuing operations of \$9.8 million, adjusted for non-cash items which related primarily to Impairment expense.

Operating Working Capital (\$ in millions)	For the Years Ended		
	December 31,		
	2018	2017	2016
Changes in operating working capital			
Accounts receivable	\$(18.3)	\$(0.9)	\$3.1
Inventories	(4.9)	(6.4)	(6.9)
Prepaid expenses	(0.1)	0.8	(0.5)
Accounts payable	8.0	4.7	(3.7)
Accrued expenses	(1.0)	(3.0)	0.8
Accrued income taxes	(8.0)	(7.1)	(3.8)
Net changes in operating working capital	\$(24.3)	\$(11.9)	\$(11.0)

In 2018, net changes in operating working capital decreased cash flow by \$24.3 million compared with an \$11.9 million decrease in cash flow in the prior year. The 2018 reduction in cash flow from the net change in working capital was driven primarily by higher accounts receivables associated with sales growth.

In 2017, net changes in operating working capital decreased cash flow by \$11.9 million compared with an \$11.0 million decrease in cash flow in the prior year.

In 2016, net changes in operating working capital decreased cash flow by \$11.0 million compared with \$12.8 million increase in cash flow in the prior year. The 2016 reduction in cash flow from the net change in working capital was driven by increases in inventory and decreases in accounts payable and accrued income taxes, partially offset by decreases in accounts receivable.

Cash Flows from Investing (\$ in millions)	For the Years Ended		
	December 31,		
	2018	2017	2016
Capital spending	\$(27.0)	\$(37.2)	\$(27.8)
Capitalized software costs	(2.7)	(3.5)	(2.8)
Acquisitions, net of cash acquired	—	(291.7)	—
Proceeds from sale of assets	—	7.0	—
Other	2.2	6.9	8.2
Cash used for investing	\$(27.5)	\$(318.5)	\$(22.4)

Cash used for investing activities during 2018 was \$27.5 million and consisted primarily of cash paid for capital spending.

Cash used for investing activities during 2017 was \$318.5 million and consisted primarily of cash paid for the Conwed acquisition and capital spending, partially offset by \$7.0 million received from the sale of assets.

Cash used for investing activities during 2016 was \$22.4 million and consisted primarily of capital spending, partially offset by proceeds of \$4.6 million received from the sale of assets held for sale and a gain of \$1.8 million on the sale of water right intangible assets at our Spotswood, NJ manufacturing facility.

Capital Spending

Capital spending was \$27.0 million, \$37.2 million and \$27.8 million in 2018, 2017 and 2016, respectively. During 2018, 2017 and 2016, capital spending was primarily related to maintenance capital spending, capacity additions to support growth in transportation and infrastructure end-markets, construction on AMS manufacturing facilities in China and Poland, and the rebuild of certain paper manufacturing lines.

We incur capital spending as necessary to meet legal requirements and otherwise in connection with the protection of the environment at our facilities in the U.S., United Kingdom, France, Belgium, Brazil, Canada, China and Poland. For these purposes, we expect to incur capital expenditures of less than \$1.0 million in each of 2019 and 2020, of which no material amount is expected to be the result of environmental fines or settlements. The foregoing capital expenditures are not expected to reduce our ability to invest in other appropriate and necessary capital projects and are not expected to have a material adverse effect on our financial condition or results of operations.

Cash Flows from Financing (\$ in millions)	For the Years Ended		
	December 31,		
	2018	2017	2016
Cash dividends paid to SWM stockholders	\$(53.2)	\$(51.9)	\$(49.4)
Net (repayments on) proceeds from borrowings	(61.1)	233.2	(135.4)
Payments for debt issuance costs	(3.6)	(0.6)	—
Purchases of common stock	(3.0)	(1.2)	(0.7)
Excess tax benefits of stock-based awards	—	—	(0.2)
Cash (used in) provided by financing	\$(120.9)	\$179.5	\$(185.7)

During 2018, financing activities consisted primarily of net repayments on borrowings of \$61.1 million, cash dividends of \$53.2 million paid to SWM stockholders, cash paid for debt issuance costs of \$3.6 million and share repurchases of \$3.0 million.

During 2017, financing activities consisted primarily of net proceeds from borrowings of \$233.2 million, primarily for the acquisition of Conwed, cash dividends of \$51.9 million paid to SWM stockholders and share repurchases of \$1.2 million.

During 2016, financing activities consisted primarily of net repayments on borrowings of \$135.4 million, cash dividends of \$49.4 million paid to SWM stockholders and share repurchases of \$0.7 million.

Dividend Payments

We have declared and paid cash dividends on our common stock every fiscal quarter since the second quarter of 1996. On February 21, 2019, we announced a cash dividend of \$0.44 per share payable on March 22, 2019 to stockholders of record as of the close of business on March 4, 2019. The covenants contained in our Indenture and New Credit Agreement, each, as defined below in "Debt Instruments and Related Covenants," require that we maintain certain financial ratios, as disclosed in Note 14. Debt, of the Notes to Consolidated Financial Statements, none of which under normal business conditions materially limit our ability to pay such dividends. We will continue to assess our dividend policy in light of our overall strategy, cash generation, debt levels and ongoing requirements for cash to fund operations and to pursue possible strategic opportunities.

Share Repurchases

In 2018, 2017 and 2016, we repurchased 75,395 shares, 25,860 shares, and 20,345 shares, respectively, of our common stock at a cost of \$3.0 million, \$1.2 million and \$0.7 million, respectively, for the value of employees'

stock-based compensation share awards surrendered to satisfy their personal statutory income tax withholding obligations.

Debt Instruments and Related Covenants

Debt Instruments and Related Covenants (\$ in millions)	For the Years Ended		
	December 31,	2017	2016
Changes in short-term debt	\$(1.3)	\$1.5	\$—
Proceeds from issuances of long-term debt	634.2	440.5	35.6
Payments on long-term debt	(694.0)	(208.8)	(171.0)
Net (repayments on) proceeds from borrowings	\$(61.1)	\$233.2	\$(135.4)

Net repayments from borrowings were \$61.1 million during 2018. Absent any substantial acquisition(s) or any share repurchases, the Company does not expect to incur any significant additional borrowings during 2019.

On September 25, 2018, the Company closed a private offering of \$350.0 million of 6.875% senior unsecured notes due 2026 (the “Notes”). The Notes were sold in a private placement in reliance on Rule 144A and Regulation S under the Securities Act of 1933, as amended, pursuant to a purchase agreement between the Company, certain subsidiaries of the Company and J.P. Morgan Securities LLC, as representative of the initial purchasers. The Notes are guaranteed on a senior unsecured basis by each of the Company’s existing and future wholly-owned subsidiaries that is a borrower under or that guarantees obligations under the New Credit Agreement, as defined below, or that guarantees certain other indebtedness, subject to certain exceptions.

The Notes were issued pursuant to an Indenture (the “Indenture”), dated as of September 25, 2018, by and among the Company, the guarantors listed therein and Wilmington Trust, National Association, as trustee. The Indenture provides that interest on the Notes will accrue from September 25, 2018 and is payable semi-annually in arrears on April 1 and October 1 of each year, beginning on April 1, 2019, and the Notes mature on October 1, 2026.

The Company may redeem some or all of the Notes at any time on or after October 1, 2021, at the redemption prices set forth in the Indenture, together with accrued and unpaid interest, if any, to, but excluding, the redemption date. Prior to October 1, 2021, the Company may redeem some or all of the Notes at a price equal to 100% of the principal amount thereof, plus a “make-whole” premium as set forth in the Indenture. The Company may redeem up to 35% of the original aggregate principal amount of the Notes on or prior to October 1, 2021 with the proceeds of certain equity offerings at a redemption price equal to 106.875% of the principal amount of the Notes. If the Company sells certain assets or consummates certain change of control transactions, the Company will be required to make an offer to repurchase the Notes, subject to certain conditions.

On September 25, 2018, the Company entered into a \$700.0 million credit agreement (the “New Credit Agreement”), which replaces the Company’s existing senior secured credit facilities and provides for a five-year \$500.0 million revolving line of credit (the “Revolving Credit Facility”) and a seven-year \$200.0 million bank term loan facility (the “Term Loan Facility”). Subject to certain conditions, including the absence of a default or event of default under the New Credit Agreement, the Company may request incremental loans to be extended under the Revolving Credit Facility or the Term Loan Facility so long as the Company is in pro forma compliance with the financial covenants set forth in the New Credit Agreement and the aggregate of such increases does not exceed \$400.0 million. See Note 14. Debt, of the Notes to Consolidated Financial Statements, for more information.

Borrowings under the Revolving Credit Facility will initially bear interest, at the Company’s option, at either (i) 1.75% in excess of a reserve adjusted London Interbank Offered Rate (“LIBOR”) or (ii) 0.75% in excess of an alternative base rate. Borrowings under the Term Loan Facility will initially bear interest, at the Company’s option, at either (i) 2.00% in excess of a reserve adjusted LIBOR rate or (ii) 1.00% in excess of an alternative base rate. The Term Loan amortizes at the rate of 1.0% per year and will mature on September 25, 2025. Unused borrowing capacity under the New Credit Agreement was \$419.7 million as of December 31, 2018. We also had availability under our bank overdraft facilities and lines of credit of \$6.1 million as of December 31, 2018.

The Company was in compliance with all of its covenants under the Indenture and New Credit Agreement at December 31, 2018. With the current level of borrowing and forecasted results, we expect to remain in compliance with our New Credit Agreement financial covenants.

Our total debt to capital ratios, as calculated under the New Credit Agreement, at December 31, 2018 and December 31, 2017 were 52.7% and 55.6%, respectively.

Off-Balance Sheet Arrangements

As of December 31, 2018, we did not have any significant off-balance sheet arrangements, as defined in Item 303(a)(4)(ii) of SEC Regulation S-K.

OTHER FACTORS AFFECTING LIQUIDITY AND CAPITAL RESOURCES

The following table represents our future contractual cash requirements for the next five years and thereafter for our long-term debt obligations and other commitments (\$ in millions):

Contractual Obligations	Payments due for the years ended						
	Total	2019	2020	2021	2022	2023	Thereafter
Current debt ⁽¹⁾	\$4.6	\$4.6	\$—	\$—	\$—	\$—	\$—
Long-term debt ⁽²⁾	632.3	—	3.2	3.9	3.8	79.0	542.4
Debt interest ⁽³⁾	265.8	36.6	36.5	36.4	36.3	35.6	84.4
Restructuring obligations ⁽⁴⁾	1.4	1.1	0.2	0.1	—	—	—
Minimum operating lease payments ⁽⁵⁾	29.9	5.8	5.0	4.4	3.6	3.0	8.1
Purchase obligations - raw materials ⁽⁶⁾	30.4	23.2	1.9	1.9	1.7	1.1	0.6
Purchase obligations - energy ⁽⁷⁾	52.4	31.1	14.0	1.7	0.7	0.7	4.2
Tax Act transition obligation ⁽⁸⁾	27.0	2.3	2.3	2.3	2.3	4.3	13.5
Other contractual obligations ^{(9) (10) (11)(12)}	2.0	2.0	—	—	—	—	—
Total	\$1,045.8	\$106.7	\$63.1	\$50.7	\$48.4	\$123.7	\$ 653.2

(1) Current debt excludes debt issuance costs of \$1.3 million; see Note 14. Debt, of the Notes to Consolidated Financial Statements.

(2) Long-term debt excludes debt issuance costs of \$5.9 million and \$7.6 million in unamortized discount on the senior unsecured notes; see additional information regarding long-term debt in Note 14. Debt, of the Notes to Consolidated Financial Statements.

(3) The amounts reflected in debt interest are based upon the short-term and long-term scheduled principal maturities and interest rates in effect as of December 31, 2018. Where specific maturities are not stated, such as for an overdraft line-of-credit, a repayment date coinciding with the end of the year was used for purposes of these calculations. With respect to our variable-rate debt outstanding at December 31, 2018, a 100 basis point increase in interest rates would increase our debt interest obligation by \$4.5 million in 2019, taking into account the effect of the interest rate hedge transactions the Company has entered into as of December 31, 2018. For more information regarding our outstanding debt and associated interest rates, as well as hedging strategies in place which serve to fix the interest rate on a large portion of our debt, see Note 14. Debt, of the Notes to Consolidated Financial Statements.

(4) Restructuring obligations are more fully discussed in Part II, Item 7, Management's Discussion and Analysis of Financial Condition and Results of Operations, Recent Developments and Note 13. Restructuring and Impairment Activities, of the Notes to Consolidated Financial Statements.

(5) Minimum operating lease payments relate to our future minimum obligations under non-cancelable operating leases having an initial or remaining term in excess of one year as of December 31, 2018.

(6) Purchase obligations for raw materials include our calcium carbonate purchase agreement at our plant in Quimperlé, France, in which a vendor operates an on-site calcium carbonate plant and our plant has minimum purchase quantities. See Note 20. Commitments and Contingencies, of the Notes to Consolidated Financial Statements for additional information.

Purchase obligations for energy include obligations under agreements with (1) an energy co-generation supplier at our plants in Quimperlé, France and Spay, France, to supply steam for which our plants have minimum purchase commitments, (2) a natural gas supplier to supply and distribute 100% of the natural gas needs of our three French plants, (3) an electricity supplier to supply and distribute the electricity needs of our three French plants, (4) an energy supplier to supply a constant supply of electricity for our Pirahy plant in Brazil, (5) an energy supplier to supply natural gas for our Pirahy plant in Brazil and (6) an energy supplier has a contract to provide biomass at our Spay, France facility for the next two years. See Note 20. Commitments and Contingencies, of the Notes to Consolidated Financial Statements for additional information.

On December 22, 2017, the United States enacted the Tax Act into law, which requires a one-time transition tax on certain unpatented earnings of foreign subsidiaries. Companies may elect to pay the tax over eight years based on (8) an installment schedule outlined in the Tax Act. We have made this election and have reflected our transition tax due by year as a contractual obligation. See Note. 17. Income Taxes, of the Notes to Consolidated Financial Statements for additional information.

Other contractual obligations exclude \$1.1 million of unrecognized tax benefits associated with uncertain tax (9) positions for which there is no contractual obligation. We had no other long-term liabilities as defined for purposes of this disclosure by the SEC as of December 31, 2018.

Other contractual obligations do not include any amounts for our pension obligations. The pension obligations are funded by our separate pension trusts, which held \$115.2 million in assets at December 31, 2018. The combined projected benefit obligation ("PBO") of our U.S. and French pension plans was underfunded by \$26.6 million and (10) \$22.7 million as of December 31, 2018 and 2017, respectively. We make contributions to our pension trusts based on many factors including regulatory guidelines, investment returns of the trusts and availability of cash for pension contributions versus other priorities. We expect 2019 funding to be in compliance with the Pension Protection Act of 2006. For information regarding our long-term pension obligations and trust assets, see Note 18. Postretirement and Other Benefits, of the Notes to Consolidated Financial Statements.

Other contractual obligations do not include any amounts for our postretirement healthcare and life insurance benefits. Such payments are dependent upon our retirees incurring costs and filing claims; therefore, future payments are uncertain. Our net payments under these plans were approximately \$0.1 million and \$0.3 million in (11) the years ended December 31, 2018 and 2017, respectively. Based on this past experience, we currently expect our share of the net payments to be less than \$1.0 million during 2019 for these benefits. For more information regarding our retiree healthcare and life insurance benefit obligations, see Note 18. Postretirement and Other Benefits, of the Notes to Consolidated Financial Statements.

(12) Other contractual obligations relate to commitments for capital projects.

OUTLOOK

For the AMS segment, we expect our growth outlook to be driven by macro factors affecting our served end-markets, including filtration, infrastructure and construction, transportation, industrial, and medical, as well as industry demand for many of our key applications. We expect water and other specialty filtration applications, surface protection products within transportation, and our products for infrastructure and construction end-markets to deliver growth exceeding GDP, or other global growth benchmarks, over the long-term due to the relative strong demand for the specific products we provide. Generally, we believe that our sales into the industrial and medical end-markets will perform relatively in line with long-term broad economic growth in the U.S. and to some extent Europe and China. Excluding potential impacts from raw material price movements, the company generally projects margin expansion in the AMS segment as a result of expected organic sales growth. For the EP segment, we expect our performance to be driven by macro factors, such as the expected long-term trend of reduced cigarette consumption and foreign exchange movements, and the potential regulatory changes in the tobacco industry such as approvals of various new reduced-risk tobacco products or tax-related price increases. In addition, cigarette industry consolidation may play a role in affecting trends in the tobacco industry.

FORWARD-LOOKING STATEMENTS

This report contains forward-looking statements within the meaning of Private Securities Litigation Reform Act of 1995 that are subject to the safe harbor created by that Act and other legal protections. Forward-looking statements, include, without limitation, those regarding 2019 outlook and future performance, mergers and acquisitions, future market trends, future RTL sales and volume trends, smoking attrition rates, synergies or growth from acquisitions, incurrence of additional debt, adoption of LIP standards in new regions, reverse osmosis water filtration and global drinking water demands, integration, and growth prospects (including international growth), the deductibility of goodwill associated with the Conwed acquisition, impact of our restructuring actions, post-retirement healthcare and life insurance payments, impact of the LIP intellectual property litigation and opposition proceedings, the amount of capital spending and/or common stock repurchases, the profitability of CTS, pricing pressures (including related to LIP), future cash flows, benefits associated with our global asset realignment (including possible non-recurrence of one-time tax benefits, lower or higher effective tax rates), purchase accounting impacts, impacts of our ongoing operational excellence and other cost-reduction initiatives, increasing revenues coming from our non-tobacco operations, and other statements generally identified by words such as "believe," "expect," "intend," "plan," "potential," "anticipate," "project," "appear," "should," "could," "may," "will," "typically" and similar words. These statements are not guarantees of future performance and involve certain risks and uncertainties that may cause actual results to differ materially from our expectations as of the date of this report. These risks include, among other things, those set forth in Part I, Item 1A. Risk Factors of this report as well as the following factors:

Recent changes to U.S. federal income tax law, the overall impact and interpretation of which remain uncertain and could be material, in addition to the extent to which states may conform to the newly enacted federal tax law as well as the impact of the tax reform on holders of our common stock;

Changes in sales or production volumes, pricing and/or manufacturing costs of Recon products, cigarette paper (including for LIP cigarettes), including any change by our customers in their tobacco and tobacco-related blends for their cigarettes, their target inventory levels and/or the overall demand for their products, new technologies such as e-cigarettes, inventory adjustments and rebalancings in our EP segment. Additionally, competition and changes in AMS end-market products due to changing customer demands;

Changes in the Chinese economy, including relating to the demand for reconstituted tobacco, premium cigarettes and netting;

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Risks associated with the implementation of our strategic growth initiatives, including diversification, and the Company's understanding of, and entry into, new industries and technologies;

Changes in the source and intensity of competition in our commercial segments. We operate in highly competitive markets in which alternative supplies and technologies may attract our customers away from our

products. In addition, our customers may, in some cases, produce for themselves the components that the Company sells to them for incorporation into their products, thus reducing or eliminating their purchases from us;

Our ability to attract and retain key personnel, due to our prior restructuring actions, the tobacco industry in which we operate or otherwise;

Weather conditions, including potential impacts, if any, from climate change, known and unknown, seasonality factors that affect the demand for virgin tobacco leaf and natural disasters or unusual weather events;

Seasonal or cyclical market and industry fluctuations which may result in reduced net sales and operating profits during certain periods;

Increases in commodity prices and lack of availability of such commodities, including energy, wood pulp and resins, could impact the sales and profitability of our products;

Adverse changes in the oil, gas, automotive, construction and infrastructure, and mining sectors impacting key AMS segment customers;

Increases in operating costs due to inflation or otherwise, such as labor expense, compensation and benefits costs;

Employee retention and labor shortages;

Changes in employment, wage and hour laws and regulations in the U.S., France and elsewhere, including loi de Sécurisation de l'emploi, unionization rule and regulations by the National Labor Relations Board, equal pay initiatives, additional anti-discrimination rules or tests and different interpretations of exemptions from overtime laws;

Labor strikes, stoppages, disruptions or other disruptions at our facilities;

The impact of tariffs, and the imposition of any future tariffs and other trade barriers, and the effects of retaliatory trade measures;

Existing and future governmental regulation and the enforcement thereof, for example relating to the tobacco industry, taxation and the environment (including the impact thereof on our Chinese joint ventures);

New reports as to the effect of smoking on human health or the environment;

Changes in general economic, financial and credit conditions in the U.S., Europe, China and elsewhere, including the impact thereof on currency exchange rates (including any weakening of the euro and Real) and on interest rates;

Changes in the method pursuant to which LIBOR rates are determined and the potential phasing out of LIBOR after 2021;

Changes in the manner in which we finance our debt and future capital needs, including potential acquisitions;

The success of, and costs associated with, our current or future restructuring initiatives, including the granting of any needed governmental approvals and the occurrence of work stoppages or other labor disruptions;

Changes in the discount rates, revenue growth, cash flow growth rates or other assumptions used by the Company in its assessment for impairment of assets and adverse economic conditions or other factors that would result in significant impairment charges;

• The failure of one or more material suppliers, including energy, resin and pulp suppliers, to supply materials as needed to maintain our product plans and cost structure;

• International conflicts and disputes, such as those involving the Russian Federation, Korea and the Middle East, which restrict our ability to supply products into affected regions, due to the corresponding effects on demand, the application of international sanctions, or practical consequences on transportation, banking transactions, and other commercial activities in troubled regions;

• Compliance with the FCPA and other anti-corruption laws or trade control laws, as well as other laws governing our operations;

• The pace and extent of further international adoption of LIP cigarette standards and the nature of standards so adopted;

• Risks associated with our 50%-owned, non-U.S. joint ventures relating to control and decision-making, compliance, accounting standards, transparency and customer relations, among others;

• A failure in our risk management and/or currency or interest rate swaps and hedging programs, including the failures of any insurance company or counterparty;

• The number, type, outcomes (by judgment or settlement) and costs of legal, tax, regulatory or administrative proceedings, litigation and/or amnesty programs, including those in Brazil, France and Germany;

• The outcome and cost of LIP-related intellectual property infringement and validity litigation in Europe and the Glatz's German Patent Court invalidation proceedings;

• Risks associated with our technological advantages in our intellectual property and the likelihood that our current technological advantages are unable to continue indefinitely;

• Risks associated with acquisitions or other strategic transactions, including acquired liabilities and restrictions, retaining customers from businesses acquired, achieving any expected results or synergies from acquired businesses, complying with new regulatory frameworks, difficulties in integrating acquired businesses or implementing strategic transactions generally and risks associated with international acquisition transactions, including in countries where we do not currently have a material presence;

• Risks associated with dispositions, including post-closing claims being made against us, disruption to our other businesses during a sale process or thereafter, credit risks associated with any buyer of such disposed assets and our ability to collect funds due from any such buyer;

• Risks associated with our global asset realignment initiatives, including: changes in tax law, treaties, interpretations, or regulatory determinations; audits made by applicable regulatory authorities and/or our auditor; and our ability to operate our business in a manner consistent with the regulatory requirements for such realignment;

• Increased taxation on tobacco-related products;

• Costs and timing of implementation of any upgrades or changes to our information technology systems;

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Failure by us to comply with any privacy or data security laws or to protect against theft of customer, employee and corporate sensitive information;

Changes in tax rates, the adoption of new U.S. or international tax legislation or exposure to additional tax liabilities;

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• Changes in construction and infrastructure spending and its impact on demand for certain products;

• Potential loss of consumer awareness and demand for acquired companies' products if it is decided to rebrand those products under the Company's legacy brand names; and

• Other factors described elsewhere in this document and from time to time in documents that we file with the SEC.

All forward-looking statements made in this document are qualified by these cautionary statements. Forward-looking statements herein are made only as of the date of this document, and we do not undertake any obligation, other than as may be required by law, to update or revise any forward-looking or cautionary statements to reflect changes in assumptions, the occurrence of events, unanticipated or otherwise, or changes in future operating results over time or otherwise.

Comparisons of results for current and any prior periods are not intended to express any future trends or indications of future performance unless expressed as such, and should only be viewed as historical data.

Item 7A. Quantitative and Qualitative Disclosures about Market Risk

Foreign Currency Risk

Changes in foreign currency exchange rates may have an impact on our operating profit. Since we transact business in many countries, some of our sale and purchase transactions are denominated in a currency other than the local currency of our operations. As a result, changes in exchange rates between the currencies in which the transaction is denominated versus the local currency of our operation into which the transaction is being recorded can impact the amount of local currency recorded for such transaction. This can result in more or less local currency revenue or cost related to such transaction and thus have an effect on our operating profit. Currency transaction risk is mitigated partially in France as some of the revenue and expense transactions of our French subsidiaries are denominated in U.S. dollars, providing a degree of natural hedging. Our Brazilian and Polish operations are more fully exposed to currency transaction risk, especially as a result of U.S. dollar and euro denominated sales, respectively.

Additionally, changes in foreign currency exchange rates may have an impact on the amount reported in other income (expense), net. Once the above-indicated receivables and payables from the sale and purchase transactions have been recorded, to the extent currency exchange rates change prior to settlement of the balance, a gain or loss on the non-local currency denominated asset or liability balance may be experienced, in which case such gain or loss is included in other income (expense), net.

We utilize forward and swap contracts and, to a lesser extent, option contracts to selectively hedge our exposure to foreign currency transaction risk when it is practical and economical to do so. The use of these contracts minimizes transactional exposure to exchange rate changes because the gains or losses incurred on the derivative instrument will offset, in whole or in part, the loss or gain on the underlying foreign currency exposure. These instruments are entered into with money center banks, insurance companies or government agencies, collectively known as counterparties. We expect to continue to apply foreign currency hedging in our Brazilian and Polish operations in the foreseeable future. As of December 31, 2018, a 10% unfavorable change in the exchange rate of our functional currencies and those of our subsidiaries against the prevailing market rates of non-local currencies involving our transactional exposures would have resulted in a net pre-tax loss of approximately \$2.3 million. These hypothetical gains or losses on foreign currency transactional exposures are based on the December 31, 2018 rates and the assumed rates. While we believe the above loss resulting from the hypothetical unfavorable changes in foreign currency exchange rates could be material to our results of operations, we reduce this risk by selectively hedging our exposure when it is practical and economical to do so.

Interest Rate Risk

We may utilize a combination of variable-rate and fixed-rate debt consisting of short-term and long-term instruments. We selectively hedge our exposure to interest rate increases on our variable-rate, long-term debt when it is practical and economical to do so. We have utilized various forms of interest rate hedge agreements, including interest rate swap agreements and forward rate agreements. We utilize variable-to-fixed interest rate swap agreements, typically with contractual terms no longer than 60 months, which serve to convert a portion of our outstanding variable rate debt to a fixed rate. Various outstanding interest-bearing instruments are sensitive to changes in interest rates. With respect to our variable-rate debt outstanding at December 31, 2018, a 100 basis point increase in interest rates would result in a \$4.5 million decrease to our future annual pre-tax earnings, taking into account the effect of the interest rate hedge transactions the Company has entered into as of December 31, 2018. As of December 31, 2018, the percentage of the Company's fixed and floating interest rate debt was 56% and 44%, respectively. The Company has entered into a number of interest rate hedge transactions to convert floating rate debt to fixed. Including the impact of these transactions, as of December 31, 2018, the percentage of the Company's debt subject to fixed and floating rates of interest was 85% and 15%, respectively.

Commodity Price Risk

We are subject to commodity price risks from our purchases of raw materials, including resin and wood pulp. Resin is the largest single component of raw material cost in the AMS segment and wood pulp is our largest single component

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of raw material cost in our EP segment. The per pound price of resin is volatile and may impact the future results of our AMS segment. Additionally, the per ton cost of wood pulp is cyclical in nature and more volatile than general inflation. During the period from January 2013 through December 2018, the U.S. list price of northern bleached softwood kraft pulp ("NBSK") a representative pulp grade that we use, increased by approximately 61%. We normally maintain approximately 50 to 90 days of inventories to support our operations. As a result, there is a lag in the impact of changes in the per ton list price of resin and wood pulp on our cost of products sold.

In our AMS segment, we utilize a variety of commodity grade and specialty resins, including a selection of specialized high temperature engineering grade resins. Certain of these specialty resins are significantly more expensive than commodity grade resins. Resin prices fluctuate significantly and can impact profitability. As we periodically enter into agreements with customers under which we agree to supply products at fixed prices, unanticipated increases in the costs of raw materials, or the lack of availability of such raw materials (due to force majeure or other reasons), can significantly impact our financial performance. Even where we do not have fixed-price agreements, we generally cannot pass through increases in raw material costs in a timely manner and in many instances are not able to pass through the entire increase to our customers. Further, some of the resins we use in our AMS segment are only available from a single supplier, or a limited number of suppliers. Consequently, such supplier(s) can control the availability and thus the cost of the resins we use, notwithstanding any changes in the cost of oil. It can be time consuming and costly, and occasionally impractical, to find replacement resins where such suppliers limit the availability or increase the cost of resins we use. Commodity grade resin prices typically correlate with crude oil prices while specialty resin prices often do not. To date, we have not utilized derivative instruments to manage this risk. With respect to our commodity price risk, a hypothetical 10% change in per ton resin prices would impact our future annual pre-tax earnings by approximately \$14.3 million, assuming no compensating change in our selling prices.

Selling prices of our paper products are influenced, in part, by the market price for wood pulp, which is determined by worldwide industry supply and demand. Generally, over time, we have been able to increase our selling prices in response to increases in per ton wood pulp costs and have generally reduced our selling prices when wood pulp costs have significantly declined. Increases in prices of wood pulp could adversely impact our earnings if selling prices are not increased or if such increases do not fully compensate for or trail the increases in wood pulp prices. We have not utilized derivative instruments to manage this risk. With respect to our commodity price risk, a hypothetical 10% change in per ton wood pulp prices would impact our future annual pre-tax earnings by approximately \$5.9 million, assuming no compensating change in our selling prices.

We believe that, while our exposure to commodity price risk is material to our results of operations, our customers understand such risk and over time changes in the price of the commodities used in our manufacturing processes are typically reflected in selling prices.

Energy Supply and Cost Volatility

In France, Poland, China and in the U.S., availability of energy is generally reliable, although prices can fluctuate significantly based on variations in demand. In Brazil, where that country's production of electricity is heavily reliant upon hydroelectric plants, availability of electricity has been affected in the past by rain variations. Although our Brazilian business currently has a sufficient supply of energy to continue its current level of operation, there can be no assurance that we will have sufficient electricity in the future, or that costs will remain stable.

Due to the competitive pricing in the markets for most of our products, we are typically unable to fully pass through higher energy costs to our customers. With respect to our purchased energy price risk, a hypothetical 10% change in per unit prices would impact our future annual pre-tax earnings by approximately \$5.0 million, assuming no compensating change in our selling prices.

Periodically, when we believe it is appropriate to do so, we enter into agreements to procure a portion of our energy for future periods in order to reduce the uncertainty of future energy costs. However, in recent years this has only marginally slowed the increase in energy costs due to the volatile changes in energy prices we have experienced.

Item 8. Financial Statements and Supplementary Data

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Schedules have been omitted because they are either not required, not applicable or the required information is included in the consolidated financial statements or notes thereto.

SCHWEITZER-MAUDUIT INTERNATIONAL, INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF INCOME

(dollars in millions, except per share amounts)

	For the Years Ended December 31,		
	2018	2017	2016
Net sales	\$1,041.3	\$ 982.1	\$ 839.9
Cost of products sold	762.8	698.7	582.0
Gross profit	278.5	283.4	257.9
Selling expense	35.7	33.3	25.3
Research expense	15.2	17.8	17.5
General expense	90.9	95.9	79.5
Total nonmanufacturing expenses	141.8	147.0	122.3
Restructuring and impairment expense	1.7	8.1	25.6
Operating profit	135.0	128.3	110.0
Interest expense	28.2	26.9	16.6
Other income, net	10.0	0.1	—
Income from continuing operations before income taxes and income from equity affiliates	116.8	101.5	93.4
Provision for income taxes	10.7	69.6	15.4
(Loss) income from equity affiliates, net of income taxes	(11.3) 2.5	4.8
Income from continuing operations	94.8	34.4	82.8
(Loss) gain from discontinued operations	(0.3) 0.1	—
Net income	\$94.5	\$ 34.5	\$ 82.8
Net income (loss) per share - basic:			
Income per share from continuing operations	\$3.08	\$ 1.12	\$ 2.71
Loss per share from discontinued operations	(0.01) —	—
Net income per share – basic	\$3.07	\$ 1.12	\$ 2.71
Net income (loss) per share – diluted:			
Income per share from continuing operations	\$3.07	\$ 1.12	\$ 2.70
Loss per share from discontinued operations	(0.01) —	—
Net income per share – diluted	\$3.06	\$ 1.12	\$ 2.70
Weighted average shares outstanding:			
Basic	30,551,300	30,407,100	30,310,900
Diluted	30,692,900	30,549,300	30,463,400

The accompanying notes are an integral part of these consolidated financial statements.

SCHWEITZER-MAUDUIT INTERNATIONAL, INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME
(dollars in millions)

	For the Years Ended December 31,		
	2018	2017	2016
Net income	\$94.5	\$34.5	\$82.8
Other comprehensive (loss) income, net of tax:			
Foreign currency translation adjustments	(28.6)	36.0	(16.7)
Less: Reclassification adjustment for realized translation adjustments	(0.8)	—	—
Unrealized gains on derivative instruments	2.4	2.0	13.2
Less: Reclassification adjustment for (gains) losses on derivative instruments included in net income	(3.7)	0.3	6.5
Net gain (loss) from postretirement benefit plans	(3.3)	8.3	(4.3)
Less: Amortization of postretirement benefit plans' costs included in net periodic benefit cost	3.8	3.3	3.4
Other comprehensive (loss) income	(30.2)	49.9	2.1
Comprehensive income	\$64.3	\$84.4	\$84.9

The accompanying notes are an integral part of these consolidated financial statements.

SCHWEITZER-MAUDUIT INTERNATIONAL, INC. AND SUBSIDIARIES
CONSOLIDATED BALANCE SHEETS

(dollars in millions, except per share amounts)

	December 31, 2018	December 31, 2017
ASSETS		
Cash and cash equivalents	\$ 93.8	\$ 106.9
Accounts receivable, net	154.6	149.4
Inventories	151.5	155.2
Income taxes receivable	12.2	3.4
Assets held for sale	12.0	12.8
Other current assets	5.1	5.4
Total current assets	429.2	433.1
Property, plant and equipment, net	340.3	361.9
Deferred income tax benefits	0.3	1.0
Investment in equity affiliates	51.9	68.5
Goodwill	338.1	341.3
Intangible assets	272.8	297.2
Other assets	33.9	39.5
Total assets	\$ 1,466.5	\$ 1,542.5
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current debt	\$ 3.3	\$ 5.1
Accounts payable	65.7	59.4
Income taxes payable	1.6	4.0
Accrued expenses	72.9	78.6
Total current liabilities	143.5	147.1
Long-term debt	618.8	679.1
Long-term income tax payable	27.0	36.7
Pension and other postretirement benefits	28.2	30.7
Deferred income tax liabilities	48.0	42.3
Other liabilities	43.1	59.9
Total liabilities	908.6	995.8
Stockholders' equity:		
Preferred stock, \$0.10 par value per share; 10,000,000 shares authorized; none issued or outstanding	—	—
Common stock, \$0.10 par value per share; 100,000,000 shares authorized; 30,771,244 and 30,711,299 shares issued and outstanding at December 31, 2018 and 2017, respectively	3.1	3.1
Additional paid-in-capital	71.1	66.3
Retained earnings	608.2	566.7
Accumulated other comprehensive loss	(124.5) (89.4
Total stockholders' equity	557.9	546.7
Total liabilities and stockholders' equity	\$ 1,466.5	\$ 1,542.5

The accompanying notes are an integral part of these consolidated financial statements.

SCHWEITZER-MAUDUIT INTERNATIONAL, INC. AND SUBSIDIARIES
 CONSOLIDATED STATEMENTS OF CHANGES IN STOCKHOLDERS' EQUITY

(dollars in millions, except per share amounts)

	Common Stock Issued			Retained Earnings	Accumulated Other Comprehensive (Loss) Income	Total
	Shares	Amount	Additional Paid-In Capital			
Balance, December 31, 2015	30,474,149	\$ 3.0	\$ 53.7	\$ 552.6	\$ (141.4)	\$ 467.9
Net income	—	—	—	82.8	—	82.8
Other comprehensive income, net of tax	—	—	—	—	2.1	2.1
Dividends declared (\$1.62 per share)	—	—	—	(49.4)	—	(49.4)
Restricted stock issuances, net	84,105	0.1	—	—	—	0.1
Stock-based employee compensation expense	—	—	5.5	—	—	5.5
Excess tax benefits of stock-based employee compensation	—	—	(0.2)	—	—	(0.2)
Stock issued to directors as compensation	6,585	—	0.2	—	—	0.2
Purchases and cancellation of common stock	(20,345)	—	—	(0.7)	—	(0.7)
Balance, December 31, 2016	30,544,494	\$ 3.1	\$ 59.2	\$ 585.3	\$ (139.3)	\$ 508.3
Net income	—	—	—	34.5	—	34.5
Other comprehensive income, net of tax	—	—	—	—	49.9	49.9
Dividends declared (\$1.69 per share)	—	—	—	(51.9)	—	(51.9)
Restricted stock issuances, net	186,867	—	—	—	—	—
Stock-based employee compensation expense	—	—	6.9	—	—	6.9
Stock issued to directors as compensation	5,798	—	0.2	—	—	0.2
Purchases and cancellation of common stock	(25,860)	—	—	(1.2)	—	(1.2)
Balance, December 31, 2017	30,711,299	\$ 3.1	\$ 66.3	\$ 566.7	\$ (89.4)	\$ 546.7
Cumulative effects of change in accounting standards	—	—	—	3.2	(4.9)	(1.7)
Net income	—	—	—	94.5	—	94.5
Other comprehensive loss, net of tax	—	—	—	—	(30.2)	(30.2)
Dividends declared (\$1.73 per share)	—	—	—	(53.2)	—	(53.2)
Restricted stock issuances, net	130,617	—	—	—	—	—
Stock-based employee compensation expense	—	—	4.6	—	—	4.6
Stock issued to directors as compensation	4,723	—	0.2	—	—	0.2
Purchases and cancellation of common stock	(75,395)	—	—	(3.0)	—	(3.0)
Balance, December 31, 2018	30,771,244	\$ 3.1	\$ 71.1	\$ 608.2	\$ (124.5)	\$ 557.9

The accompanying notes are an integral part of these consolidated financial statements.

SCHWEITZER-MAUDUIT INTERNATIONAL, INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF CASH FLOW
(dollars in millions)

	For the Years Ended		
	December 31,		
	2018	2017	2016
Operations			
Net income	\$94.5	\$34.5	\$82.8
Less: (Loss) gain from discontinued operations	(0.3)	0.1	—
Income from continuing operations	94.8	34.4	82.8
Non-cash items included in net income:			
Depreciation and amortization	61.6	59.5	44.5
Impairments	0.2	4.6	21.3
Deferred income tax provision (benefit)	7.5	1.6	(13.5)
Pension and other postretirement benefits	2.8	3.8	3.8
Stock-based compensation	4.8	7.1	5.8
Loss (income) from equity affiliates	11.3	(2.5)	(4.8)
Gain on sale of intangible assets	—	—	(1.8)
Gain on sale of assets	—	(4.9)	—
Long-term income tax payable	(12.0)	36.7	—
Change in fair value of contingent consideration	(10.2)	—	—
Excess tax deficit of stock-based awards	—	—	0.2
Cash dividends received from equity affiliates	2.0	1.8	3.0
Other items	0.4	0.7	(0.6)
Changes in operating working capital:			
Accounts receivable	(18.3)	(0.9)	3.1
Inventories	(4.9)	(6.4)	(6.9)
Prepaid expenses	(0.1)	0.8	(0.5)
Accounts payable	8.0	4.7	(3.7)
Accrued expenses	(1.0)	(3.0)	0.8
Accrued income taxes	(8.0)	(7.1)	(3.8)
Net changes in operating working capital	(24.3)	(11.9)	(11.0)
Net cash provided by operating activities of:			
- Continuing operations	138.9	130.9	129.7
- Discontinued operations	0.2	0.1	—
Cash provided by operations	139.1	131.0	129.7
Investing			
Capital spending	(27.0)	(37.2)	(27.8)
Capitalized software costs	(2.7)	(3.5)	(2.8)
Acquisitions, net of cash acquired	—	(291.7)	—
Proceeds from sale of assets	—	7.0	—
Other investing	2.2	6.9	8.2
Cash used for investing	(27.5)	(318.5)	(22.4)
Financing			
Cash dividends paid to SWM stockholders	(53.2)	(51.9)	(49.4)
Changes in short-term debt, net	(1.3)	1.5	—
Proceeds from issuances of long-term debt	634.2	440.5	35.6
Payments on long-term debt	(694.0)	(208.8)	(171.0)
Payments for debt issuance costs	(3.6)	(0.6)	—
Purchases of common stock	(3.0)	(1.2)	(0.7)

Excess tax deficit of stock-based awards	—	—	(0.2)
Cash (used in) provided by financing	(120.9)	179.5	(185.7)
Effect of exchange rate changes on cash and cash equivalents	(3.8)	7.5	(0.7)
Decrease in cash and cash equivalents	(13.1)	(0.5)	(79.1)
Cash and cash equivalents at beginning of period	106.9	107.4	186.5
Cash and cash equivalents at end of period	\$93.8	\$106.9	\$107.4

The accompanying notes are an integral part of these consolidated financial statements.

SCHWEITZER-MAUDUIT INTERNATIONAL, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Note 1. General

Nature of Business

Schweitzer-Mauduit International, Inc., or SWM or the Company, headquartered in the United States of America, is a multinational diversified producer of highly engineered solutions and advanced materials for a variety of industries. The Company maintains two operating product line segments: Advanced Materials and Structures and Engineered Papers.

The Advanced Materials & Structures segment, or AMS, produces mostly resin-based rolled goods such as nets, films and meltblown materials, typically through an extrusion process or other non-woven technologies. These products are used in a variety of specialty applications across the filtration, construction and infrastructure, transportation, industrial and medical end-markets.

The Engineered Papers segment, or EP, primarily serves the tobacco industry with production of various cigarette papers and reconstituted tobacco products, or "recon". Traditional reconstituted tobacco leaf, or "RTL", is used as a blend with virgin tobacco in cigarettes and used as wrappers and binders for cigars. Recon, as well as LIP (low ignition propensity) cigarette paper, a specialty product with fire-safety features, are two key profit drivers. The EP segment also produces non-tobacco papers for both premium applications, such as energy storage, and industrial commodity paper grades, which are often produced to maximize machine utilization.

We conduct business in over 90 countries and operate 22 production locations worldwide, with facilities in the U.S., Canada, United Kingdom, France, Luxembourg, Belgium, Russia, Brazil, China and Poland. We also have a 50% equity interest in two joint ventures in China. The first, China Tobacco Mauduit (Jiangmen) Paper Industry Ltd., or CTM, produces cigarette and porous plug wrap papers and the second, China Tobacco Schweitzer (Yunnan) Reconstituted Tobacco Co. Ltd., or CTS, produces RTL.

As used in this 2018 Annual Report on Form 10-K, unless the context indicates otherwise, references to "we," "us," "our," "SWM," "Schweitzer-Mauduit" or similar terms include Schweitzer-Mauduit International, Inc. and its consolidated subsidiaries.

Note 2. Summary of Significant Accounting Policies

Basis of Presentation

The accompanying consolidated financial statements and the notes thereto have been prepared in accordance with accounting principles generally accepted in the United States of America, "U.S. GAAP". The preparation of financial statements in conformity with U.S. GAAP requires the Company to make estimates and assumptions that affect the reported amounts of assets and liabilities, disclosure of contingent assets and liabilities at the date of the financial statements, and the reported amounts of revenue and expenses during the reporting periods. The Company believes the estimates and assumptions used in the preparation of these consolidated financial statements are reasonable, based upon currently available facts and known circumstances. Actual results may differ from those estimates and assumptions as a result of a number of factors, including those discussed elsewhere in this report and in its other public filings from time to time.

SCHWEITZER-MAUDUIT INTERNATIONAL, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Principles of Consolidation

The consolidated financial statements include the accounts of the Company and wholly-owned, majority-owned and controlled subsidiaries. Intercompany balances and transactions have been eliminated. Certain reclassifications of prior year data were made in the Consolidated Statements of Income and in the Notes to Consolidated Financial Statements. The reclassifications were made to conform to the current year presentation.

The Company uses the equity method to account for its investments in two joint ventures with the China National Tobacco Corporation (see Note 9. Joint Ventures). Investment in equity affiliates represents the Company's investment in these joint ventures. The Company's 50% share of the net income (loss) of the joint ventures is included in the consolidated statements of income as income (loss) from equity affiliates.

Revenue Recognition

The Company has two main sources of revenue: product sales and materials conversion. The Company recognizes product sales revenues when control of a product is transferred to the customer. For the majority of product sales, transfer of control occurs when the products are shipped from one of the Company's manufacturing facilities to the customer. The cost of delivering finished goods to the Company's customers is recorded as a component of cost of products sold. Those costs include the amounts paid to a third party to deliver the finished goods. Any freight costs billed to and paid by a customer are included in net sales. The Company also provides services to customers through the conversion of customer-owned raw materials into processed finished goods. In these transactions, the Company generally recognizes revenue as processing is completed.

Freight Costs

The cost of delivering finished goods to the Company's customers is recorded as a component of cost of products sold. Those costs include the amounts paid to a third party to deliver the finished goods.

Royalty Income

Royalties from third-party patent licenses are recognized when earned, including monies received at an agreement's initiation attributable to past sales. The Company recognizes up-front payments upon receipt when it has no future performance requirement or ongoing obligation arising from its agreements and the payment is for a separate earnings process. Minimum annual royalties received in advance are deferred and are recognized in the period earned. The Company recognized \$5.9 million, \$3.9 million and \$8.3 million of royalty income during 2018, 2017 and 2016 respectively, which is included in net sales in the Consolidated Statements of Income.

Foreign Currency Translation

The income statements of foreign entities are translated into U.S. dollars at average exchange rates prevailing during the periods presented. The balance sheets of these entities are translated at period-end exchange rates, and the differences from historical exchange rates are reflected in a separate component of accumulated other comprehensive loss as unrealized foreign currency translation adjustments.

Foreign currency risks arise from transactions and balances denominated in non-local currencies. Gains and losses resulting from remeasurement and settlement of such transactions and balances, net of currency hedge impacts,

included in other income (expense), net, were losses of \$1.5 million, \$3.5 million and \$0.2 million in 2018, 2017 and 2016, respectively.

SCHWEITZER-MAUDUIT INTERNATIONAL, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Derivative Instruments

The Company is exposed to changes in foreign currency exchange rates, interest rates and commodity prices. The Company utilizes a variety of practices to manage these market risks, including where considered appropriate, derivative instruments. The Company uses derivative instruments only for risk management purposes and not for trading or speculation. All derivative instruments the Company uses are either exchange traded or are entered into with major financial institutions in order to reduce credit risk and risk of nonperformance by third parties. The Company believes the credit risks with respect to the counterparties, and the foreign currency risks that would not be hedged if the counterparties fail to fulfill their obligations under the contracts, are not material in view of its understanding of the financial strength of the counterparties.

Gains and losses on instruments that hedge firm commitments are deferred and included in the basis of the underlying hedged items. All other hedging gains and losses are included in period income or expense based on the period-end market price of the instrument and are included in the Company's operating cash flows. See Note 15. Derivatives, for additional information.

Cash and Cash Equivalents

The Company considers all highly liquid, unrestricted investments with remaining maturities of three months or less to be cash equivalents, including money market funds with no restrictions on withdrawals. As of December 31, 2018 and 2017, included in Cash and cash equivalents on the Consolidated Balance Sheets is \$0.6 million in contractually restricted cash.

Business Combinations

The Company uses the acquisition method of accounting for business combinations. At the acquisition date, the Company records assets acquired and liabilities assumed at their respective fair market values. The Company estimates fair value using the exit price approach which is the price that would be received to sell an asset or paid to transfer a liability in an orderly market. An exit price is determined from a market participant's viewpoint in the principal or most advantageous market and may result in the Company valuing assets or liabilities at a fair value that is not reflective of the Company's intended use of the assets or liabilities. Any excess consideration above the estimated fair values of the net assets acquired is recognized as goodwill on the Company's Consolidated Balance Sheets. The operating results of acquired businesses are included in the Company's results of operations beginning as of their effective acquisition dates. Acquisition costs are expensed as incurred and were \$0.0 million, \$0.2 million, and \$1.8 million in 2018, 2017 and 2016, respectively.

Impairment of Long-Lived Assets, Goodwill and Intangible Assets

The Company evaluates the carrying value of long-lived assets, including property and equipment, goodwill and intangible assets when events and circumstances warrant a review. Goodwill is also tested for impairment annually during the fourth quarter. Goodwill may be evaluated using a qualitative evaluation and/or a two-step test at the reporting unit level. The first step compares the book value of the reporting unit to its fair value. If the book value of a reporting unit exceeds its fair value, the Company performs the second step. In the second step, the Company determines an implied fair value of the reporting unit's goodwill by allocating the fair value of the reporting unit to all of the assets and liabilities other than goodwill. The difference between the total fair value of the reporting unit and the fair value of all the assets and liabilities other than goodwill is the implied fair value of that goodwill. Any

impairment loss is measured as the excess of the book value of the goodwill over the implied fair value of that goodwill. See Note 10. Goodwill for further discussion of the Company's annual impairment test results. During the annual testing in the fourth quarter of 2018, the estimated fair value of each of the Company's reporting units was in excess of its respective carrying value.

We have acquired trade names that have been determined to have indefinite lives. We evaluate a number of factors to determine whether an indefinite life is appropriate, including the competitive environment, category share, business history, product life cycle and operating plans. Indefinite-lived intangibles are evaluated for impairment annually during

SCHWEITZER-MAUDUIT INTERNATIONAL, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

the fourth quarter. Additionally, when certain events or changes in operating conditions occur, an impairment assessment is performed and indefinite-lived trade names may be adjusted to a determinable life or an impairment charge may be recorded. In the fourth quarter of 2016, the Company made a strategic decision to transition away from certain legacy business trade names associated with our recent acquisitions in favor of a streamlined SWM branding approach. As a result, during the fourth quarter of 2016, the Company recognized an impairment loss related to the DelStar trade name, the financial impact of which is described in Note 11. Intangible Assets.

The cost of intangible assets with determinable useful lives is amortized to reflect the pattern of economic benefits consumed, which approximates a straight-line basis, over the estimated periods benefited. When certain events or changes in operating conditions occur, an impairment assessment is performed and lives of intangible assets with determinable lives may be adjusted.

The carrying value of long-lived assets is reviewed to determine if events or circumstances have changed which may indicate that the assets may be impaired or the useful life may need to be changed. Upon occurrence of such a triggering event, the Company considers internal and external factors relating to each asset group, including expectation of future profitability, undiscounted cash flows and its plans with respect to the operations. If impairment is indicated, an impairment loss is measured by the amount the net carrying value of the asset exceeds its estimated fair value.

Environmental Spending

Environmental spending is capitalized if such spending qualifies as property, plant and equipment, substantially increases the economic value or extends the useful life of an asset. All other such spending is expensed as incurred, including fines and penalties incurred in connection with environmental violations. Environmental spending relating to an existing condition caused by past operations is expensed. Liabilities are accrued when environmental assessments are probable and the costs can be reasonably estimated. Generally, timing of these accruals coincides with completion of a feasibility study or commitment to a formal plan of action.

Capitalized Software Costs

The Company capitalizes certain purchases of software and software development costs in connection with major projects of software development for internal use. These costs are included in Other assets on the Consolidated Balance Sheets and are amortized using the straight-line method over the estimated useful life not to exceed seven years. Costs associated with business process redesign, end-user training, system start-up and ongoing software maintenance are expensed as incurred. Amortization of capitalized software was \$1.6 million, \$1.1 million and \$1.0 million for the years ended December 31, 2018, 2017 and 2016, respectively. Accumulated amortization of capitalized software costs was \$35.5 million and \$35.4 million at December 31, 2018 and 2017, respectively.

Business Tax Credits

Business tax credits represent value added tax credits receivable and similar assets, such as Imposto sobre Circulação de Mercadorias e Serviços, or ICMS, in Brazil. Business tax credits are generated when value-added taxes, or VAT, are paid on purchases. VAT and similar taxes are collected from customers on certain sales. In some jurisdictions, export sales do not require VAT collection. See Note 12. Other Assets for additional information.

Income Taxes

The Company accounts for income taxes 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 by 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.

SCHWEITZER-MAUDUIT INTERNATIONAL, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

The Company recognizes deferred tax assets to the extent that it believes that these assets are more likely than not to be realized. In making such a determination, all available positive and negative evidence is considered, including future reversals of existing taxable temporary differences, projected future taxable income, tax-planning strategies, and results of recent operations. If it is determined that the Company would be able to realize the deferred tax assets in the future in excess of their net recorded amount, an adjustment would be made to the deferred tax asset valuation allowance, which would reduce the provision for income taxes.

The Company records uncertain tax positions in accordance with ASC 740 on the basis of a two-step process in which (1) it is determined 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, the Company recognizes the largest amount of tax benefit that is more than 50 percent likely to be realized upon ultimate settlement with the related tax authority.

On December 22, 2017, the Tax Cuts and Jobs Act (the "Tax Act") was enacted into law effective January 1, 2018. The new legislation contains several key tax provisions that affected the Company, and include but are not limited to a one-time deemed repatriation tax on post-1986 accumulated earnings and profits of the foreign subsidiary undistributed earnings ("transition tax"), a reduction of the federal corporate income tax rate from 35% to 21% and a new provision designed to tax Global Intangible Low Taxed Income ("GILTI") of foreign subsidiaries effective January 1, 2018. As a result of the GILTI provision, the FASB issued Staff Q&A Topic 740, No. 5 "Accounting for Global Intangible Low-Taxed Income" requiring an entity to make an accounting policy election to either recognize deferred taxes for temporary basis differences expected to reverse as GILTI in future years or to provide for the tax expense related to GILTI in the year the tax is incurred as a period expense only. The Company has elected to account for GILTI as a current period expense when incurred.

In December 2017, the SEC staff issued Staff Accounting Bulletin No. 118, Income Tax Accounting Implications of the Tax Cuts and Jobs Act ("SAB 118"), which allowed the Company to record provisional amounts during the measurement period, not to extend beyond one year of the enactment date. The Company recognized the effect of the tax law changes in the period of enactment; reported the transition tax, re-measured the U.S. deferred tax assets and liabilities and reassessed the ability to realize its net deferred tax assets and liabilities. As of December 31, 2018, the Company has completed its accounting for the tax effects of the Tax Act.

Pension and Other Postretirement Benefits Accounting

The Company recognizes the estimated compensation cost of employees' pension and other postretirement benefits over their approximate period of service. The Company's earnings are impacted by amounts of expense recorded related to these benefits, which primarily consist of U.S. and French pension benefits and U.S. other postretirement benefits, or OPEBs. Each year's recorded expenses are estimates based on actuarial calculations of the Company's accumulated and projected benefit obligations, or PBOs, for the Company's various plans.

Suspension of additional benefits for future service is considered a curtailment, and if material, necessitates a re-measurement of plan assets and PBO. As part of a re-measurement, the Company adjusts its discount rates and other actuarial assumptions, such as retirement, turnover and mortality table assumptions, as appropriate. See Note 18. Postretirement and Other Benefits for additional information.

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Comprehensive Income

Comprehensive income includes net income, as well as items charged and credited directly to stockholders' equity, which are excluded from net income. The Company has presented comprehensive income in the Consolidated Statements of Comprehensive Income. Reclassification adjustments of derivative instruments are presented in Net sales and Interest expense in the Consolidated Statements of Income. See Note 15. Derivatives for additional information. Amortization of accumulated pension and other post-employment benefit (OPEB) liabilities are included in the computation of net periodic pension and OPEB costs, which are more fully discussed in Note 18. Postretirement and Other Benefits.

Components of Accumulated other comprehensive income (loss) were as follows (\$ in millions):

	December 31, 2018	2017
Accumulated pension and OPEB liability adjustments, net of income tax benefit of \$11.4 million and \$13.8 million at December 31, 2018 and 2017, respectively	\$(28.2)	\$(24.9)
Accumulated unrealized loss on derivative instruments, net of income tax benefit of \$1.6 million and \$0.2 million at December 31, 2018 and 2017, respectively	(0.6)	0.4
Accumulated unrealized foreign currency translation adjustments, net of income tax benefit of \$1.7 million and \$4.5 million at December 31, 2018 and 2017, respectively	(95.7)	(64.9)
Accumulated other comprehensive loss	\$(124.5)	\$(89.4)

Changes in the components of Accumulated other comprehensive income (loss) were as follows (\$ in millions):

	For the Years Ended December 31,								
	2018			2017			2016		
	Pre-tax	Tax	Net of Tax	Pre-tax	Tax	Net of Tax	Pre-tax	Tax	Net of Tax
Pension and OPEB liability adjustments	\$(0.9)	\$(2.4)	\$(3.3)	\$15.4	\$(3.8)	\$11.6	\$3.4	\$(4.3)	\$(0.9)
Derivative instrument adjustments	(2.4)	1.4	(1.0)	5.1	(2.8)	2.3	23.0	(3.3)	19.7
Unrealized foreign currency translation adjustments	(28.0)	(2.8)	(30.8)	31.5	4.5	36.0	(16.7)	—	(16.7)
Total	\$(31.3)	\$(3.8)	\$(35.1)	\$52.0	\$(2.1)	\$49.9	\$9.7	\$(7.6)	\$2.1

The change in the components of Accumulated other comprehensive income for the year ended December 31, 2018 includes a \$4.9 million cumulative-effect adjustment from Accumulated other comprehensive loss directly to Retained earnings as a result of the adoption of ASU 2018-02, "Income Statement - Reporting Comprehensive Income (Topic 220): Reclassification of Certain Tax Effects from Accumulated Other Comprehensive Income," as discussed below.

Restricted Stock

All of the Company's restricted stock grants, including those that have been earned in the case of performance-based shares and cliff-vesting grants that are not performance based, vest upon completion of a specified period of time, typically between two and four years. The fair value of each award is equal to the share price of the Company's stock on the date of the grant. This cost is recognized over the vesting period of the respective award. The Company records forfeitures of shares related to continued service requirements as they occur. A summary of outstanding restricted stock awards as of December 31, 2018 and 2017 is included in Note 19. Stockholders' Equity.

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Restricted Stock Plan Performance Based Shares

The Company's long-term incentive compensation program, or LTICP, for key employees includes an equity-based award component that is provided through the Long-term Incentive Plan, or LTIP, which the Company adopted in 2015 and which replaced its previous Restricted Stock Plan, or RSP. The objectives under the LTICP are established at the beginning of a performance cycle and are intended to focus management on longer-term strategic goals. The Compensation Committee of the Board of Directors designates participants in the LTICP and LTIP and determines the equity-based award opportunity in the form of restricted stock for each performance cycle, which is generally measured on the basis of a one year performance period (the measurement period). The restricted shares are considered issued and outstanding when the number of shares becomes fixed, after the annual performance is determined, and such awards vest at the end of the performance year or some predetermined period thereafter. The Company recognizes compensation expense with an offsetting credit to additional paid-in-capital over the performance period based on the fair value of the award at the date of grant, with compensation expense being adjusted cumulatively based on the number of shares expected to be earned according to the level of achievement of performance goals.

Fair Value Option

The Company has elected not to measure its financial instruments or certain commitments at fair value.

Recent Accounting Pronouncements

In May 2014, the Financial Accounting Standards Board, or FASB, issued Accounting Standards Update ("ASU") 2014-09, "Revenue from Contracts with Customers" (Topic 606). This guidance specifies how and when an entity will recognize revenue arising from contracts with customers and requires entities to disclose information about the nature, amount, timing and uncertainty of revenue and cash flows arising from contracts with customers. The Company adopted this ASU effective January 1, 2018, utilizing the modified retrospective transition approach upon adoption. This approach required an adjustment upon adoption to the financial statements to reflect the cumulative impact of the guidance and results in no change to prior period financial statements. The guidance in this update was applied to all contracts that were not completed at the date of adoption. Based on the evaluation of the provisions included in the new guidance, along with the related updates discussed below, the adoption of this standard resulted in a cumulative-effect adjustment directly to retained earnings of \$0.5 million as of January 1, 2018. The adoption of this guidance did not materially impact the amount or timing of revenues recognized in the consolidated financial statements or materially affect our financial position. See Note 3. Revenue Recognition for further discussion.

In February 2016, the FASB issued ASU 2016-02, "Leases (Topic 842): Amendments to the FASB Accounting Standards Codification." The new standard establishes a right-of-use model that requires a lessee to record a right-of-use asset and a lease liability on the balance sheet for all leases with terms longer than twelve months. Leases will be classified as either financing or operating, with classification affecting the pattern of expense recognition in the income statement. This guidance is effective for annual reporting periods beginning after December 15, 2018, and interim periods thereafter. In July 2018, the FASB issued ASU 2018-11, "Leases (Topic 842) - Targeted Improvements," providing companies with the option to adopt the provisions of the standard prospectively without adjusting comparative periods; the Company will elect this option for transition and adopt the standard on January 1, 2019. The Company plans to adopt the transition package of practical expedients permitted within the new standard, which among other things, allows the Company to carryforward historical lease classifications. In addition, the Company is electing the hindsight practical expedient to determine the reasonably certain lease term for existing

leases. The Company will make an accounting policy election that will keep leases with an initial term of 12 months or less off of the balance sheet and will result in recognition of those lease payments in the Consolidated Statements of Income on a straight-line basis over the lease term. The Company expects that the adoption will impact the consolidated balance sheets, resulting in approximately \$25 million in right-of-use assets and corresponding lease obligation liabilities of approximately \$27 million as of January 1, 2019. Adoption is expected to result in an immaterial cumulative-effect adjustment to the opening balance of retained earnings. The Company does not expect that the impact will be material to the consolidated statements of income and any differences will represent a timing difference in recognition of lease expense over the lease term of certain lease contracts. The Company does not expect the adoption of the new lease standard to have an impact on its debt covenant compliance under its current debt and indenture agreements.

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In March 2016, the FASB issued ASU 2016-09, "Compensation - Stock Compensation (Topic 718): Improvements to Employee Share-Based Payment Accounting." This standard makes several modifications to existing guidance related to the accounting for forfeitures, employer tax withholding on share-based compensation and the financial statement presentation of excess tax benefits or deficiencies. ASU 2016-09 also clarifies the statement of cash flows presentation for certain components of share-based awards. This guidance is effective for annual reporting periods beginning after December 15, 2016, and interim periods thereafter. The Company adopted this guidance as of January 1, 2017. Adoption of ASU 2016-09 did not have an impact on the consolidated financial statements.

In March, April and May 2016, the FASB issued ASU 2016-08, "Revenue from Contracts with Customers: Principal versus Agent Considerations (Reporting Revenue Gross versus Net)," ASU 2016-10, "Revenue from Contracts with Customers: Identifying Performance Obligations and Licensing," ASU 2016-11, "Revenue Recognition (Topic 605) and Derivatives and Hedging (Topic 815): Rescission of SEC Guidance Because of Accounting Standards Updates 2014-09 and 2014-16 Pursuant to Staff Announcements at the March 3, 2016 EITF Meeting," and ASU 2016-12, "Revenue from Contracts with Customers: Narrow-Scope Improvements and Practical Expedients," which provide supplemental adoption guidance and clarification to ASU 2014-09. ASU 2016-08, ASU 2016-10, ASU 2016-11 and ASU 2016-12 must be adopted concurrently with the adoption of ASU 2014-09. The Company adopted these updates effective January 1, 2018 and adoption of these updates did not materially affect our financial position or materially impact the amount or timing of revenues recognized in the consolidated financial statements, as discussed above. See Note 3. Revenue Recognition for further discussion.

In October 2016, the FASB issued ASU 2016-16, "Income Taxes (Topic 718): Intra-Entity Transfers of Assets Other Than Inventory." This standard states that an entity should recognize the income tax consequences of an intra-entity transfer of an asset other than inventory when the transfer occurs, thus eliminating the exception for an intra-entity transfer of an asset other than inventory. This guidance is effective for annual reporting periods beginning after December 15, 2017, including interim reporting periods within those annual reporting periods. Early adoption is permitted. The Company adopted this ASU effective January 1, 2018, utilizing the modified retrospective basis transition approach upon adoption. The adoption of this guidance resulted in a cumulative-effect adjustment directly to retained earnings of \$2.2 million as of January 1, 2018.

In January 2017, the FASB issued ASU No. 2017-01, "Business Combinations (Topic 805): Clarifying the Definition of a Business." The guidance clarifies the definition of a business with the objective of assisting entities in evaluating whether transactions should be accounted for as acquisitions (or disposals) of assets or businesses. Acquisitions of integrated sets of assets and activities that do not meet the definition of a business are accounted for as asset acquisitions. The new update is effective for annual periods beginning after December 15, 2017. The Company adopted this guidance as of January 1, 2018. Adoption of ASU 2017-01 did not have an impact on the consolidated financial statements.

In January 2017, the FASB issued ASU 2017-04, "Intangibles - Goodwill and Other (Topic 350): Simplifying the Test for Goodwill Impairment." The amendment eliminates the second step of the analysis that required the measurement of a goodwill impairment by comparing the implied value of a reporting unit's goodwill and the goodwill's carrying amount. This guidance is effective for annual or any interim goodwill impairment tests in fiscal years beginning after December 15, 2019. Early adoption is permitted. The Company is currently in the process of evaluating the impact of the pronouncement and does not expect the adoption of this guidance to have a material impact on the consolidated financial statements.

In March 2017, the FASB issued ASU 2017-07, "Compensation - Retirement Benefits (Topic 715): Improving the Presentation of Net Periodic Pension Cost and Net Periodic Postretirement Benefit Cost." The amendment requires an employer to report the service cost component in the same line item or line items as other compensation costs arising from services rendered by the pertinent employees during the period. The other components of net benefit cost are required to be presented in the income statement separately from the service cost component and outside a subtotal from operations. This guidance is effective for annual periods beginning after December 15, 2017. The Company adopted this ASU effective January 1, 2018, utilizing the retrospective transition approach upon adoption. The adoption of this guidance resulted in a reclassification of the components of net periodic pension cost, other than service cost, from Cost of products sold and General expense to Other income (expense), net, in the Consolidated Statements of

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Income. The reclassification of these costs affects only the EP segment, as there are no pension costs associated with the AMS segment. For the years ended December 31, 2017 and 2016, respectively, \$3.6 million and \$3.9 million in pension expense were reclassified from Operating profit to Other expense in the consolidated statement of income for the 2017 and 2016 comparative periods. The adoption of this guidance had no effect on Net income in the Consolidated Statements of Income and no effect on the other consolidated financial statements.

In May 2017, the FASB issued ASU 2017-09, "Compensation-Stock Compensation (Topic 718): Scope of Modification Accounting". This amendment clarifies the changes to terms or conditions of a share-based payment award that require an entity to apply modification accounting. ASU 2017-09 is effective for annual reporting periods, and interim periods therein, beginning after December 15, 2017. Early application is permitted and prospective application is required. The Company adopted this guidance as of January 1, 2018. Adoption of ASU 2017-09 did not have a material impact on the consolidated financial statements.

In August 2017, the FASB issued ASU 2017-12, "Derivatives and Hedging (Topic 815): Targeted Improvements to Accounting for Hedging Activities." This amendment better aligns an entity's risk management activities and financial reporting for hedging relationships through changes to both the designation and measurement guidance for qualifying hedging relationships and the presentation of hedge results. ASU 2017-12 is effective for annual reporting periods, and interim periods therein, beginning after December 15, 2018. Early application is permitted and should be applied to hedging relationships existing on the date of adoption. The effect of adoption should be reflected as of the beginning of the fiscal year of adoption. The Company elected to early adopt this guidance as of January 1, 2018. Refer to Note 15. Derivatives for additional information regarding the impact of adoption of this standard on the Company's financial statements.

In February 2018, the FASB issued ASU 2018-02, "Income Statement - Reporting Comprehensive Income (Topic 220): Reclassification of Certain Tax Effects from Accumulated Other Comprehensive Income." This ASU was issued following the enactment of the Tax Act. This ASU allows an entity to elect a reclassification from accumulated other comprehensive income to retained earnings for stranded effects resulting from the Tax Act. ASU 2018-02 is effective for annual reporting periods, and interim periods therein, beginning after December 15, 2018. Early adoption is permitted and should be applied either in the period of adoption or retrospectively to each period in which the effect of the change in the U.S. federal corporate income tax rate in the Tax Act is recognized. The Company adopted this ASU in the fourth quarter of 2018, utilizing the period of adoption basis transition approach. The adoption of this guidance resulted in a cumulative-effect adjustment from Accumulated other comprehensive loss directly to Retained earnings of \$4.9 million as of December 31, 2018.

In June 2018, the FASB issued ASU 2018-07, "Compensation—Stock Compensation (Topic 718): Improvements to Nonemployee Share-Based Payment Accounting." The amendments in this Update expand the scope of Topic 718 to include share-based payment transactions for acquiring goods and services from nonemployees and make the accounting treatment for employee and nonemployee share-based transactions more consistent. ASU 2018-07 is effective for annual reporting periods, and interim periods therein, beginning after December 15, 2018. Early adoption is permitted, but no earlier than the entity's adoption date of Topic 606. The Company is currently in the process of evaluating the impact of the pronouncement and does not expect the adoption of this guidance to have a material impact on the consolidated financial statements.

In August 2018, the FASB issued ASU 2018-14, "Compensation—Retirement Benefits—Defined Benefit Plans—General (Subtopic 715-20): Disclosure Framework—Changes to the Disclosure Requirements for Defined Benefit Plans." The new standard modifies the disclosure requirements for employers that sponsor defined benefit pension or other

postretirement plans. The provisions of this ASU are effective for years beginning after December 15, 2020, with early adoption permitted. The new standard requires the amendments to be applied on a retrospective basis for all periods presented. The Company is currently in the process of evaluating the impact of the pronouncement and does not expect the adoption of this guidance to have a material impact on the consolidated financial statements.

In August 2018, the FASB issued ASU 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." The new standard provides updated guidance surrounding implementation costs associated with

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cloud computing arrangements that are service contracts. The provisions of this ASU are effective for years beginning after December 15, 2020, with early adoption permitted. The Company is currently in the process of evaluating the impact of the pronouncement on the consolidated financial statements.

Note 3. Revenue Recognition

The Company has two main sources of revenue: product sales and materials conversion. The Company recognizes product sales revenues when control of a product is transferred to the customer. For the majority of product sales, transfer of control occurs when the products are shipped from one of the Company's manufacturing facilities to the customer. The cost of delivering finished goods to the Company's customers is recorded as a component of cost of products sold. Those costs include the amounts paid to a third party to deliver the finished goods. Any freight costs billed to and paid by a customer are included in net sales. The Company also provides services to customers through the conversion of customer-owned raw materials into processed finished goods. In these transactions, the Company generally recognizes revenue as processing is completed.

Revenue is recognized when performance obligations under the terms of a contract with a customer are satisfied, which generally occurs when control of the promised goods or services is transferred to the customer, in an amount that reflects the consideration the Company expects to be entitled to in exchange for those goods or services. Generally, the Company considers collectability of amounts due under a contract to be probable upon inception of a sale based on an evaluation of the credit worthiness of each customer. If collectability is not considered to be probable, the Company defers recognition of revenue on satisfied performance obligations until the uncertainty is resolved. Any variable consideration, such as discounts or price concessions, is set forth in the terms of the contract at inception, and is included in the assessment of the transaction price at the outset of the arrangement. The transaction price is allocated to the individual performance obligations due under the contract based on the relative stand-alone fair value of the performance obligations identified in the contract. The Company typically uses an observable price to determine the stand-alone selling price for separate performance obligations.

The Company does not typically include extended payment terms or significant financing components in our contracts with customers. Certain product sales contracts may include cash-based incentives (volume rebates or credits), which are accounted for as variable consideration. We estimate these amounts at least quarterly based on the expected forecast quantities to be provided to customers and reduce revenues recognized accordingly. Incidental items that are immaterial in the context of the contract are recognized as expense in the period incurred. The Company generally expenses sales commissions when incurred because the amortization period is one year or less. These costs are recorded within sales and marketing expenses. The Company does not disclose the value of unsatisfied performance obligations for (i) contracts with an original expected length of one year or less and (ii) contracts for which we recognize revenue at the amount to which we have the right to invoice for services performed. As a practical expedient, the Company treats shipping and handling activities that occur after control of the good transfers as fulfillment activities, and therefore, does not account for shipping and handling costs as a separate performance obligation.

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Following is the Company's net sales disaggregated by revenue source (\$ in millions). Sales and usage-based taxes are excluded from net sales.

	For the Years Ended December 31,								
	2018			2017			2016		
	AMS	EP	Total	AMS	EP	Total	AMS	EP	Total
Product revenues	\$455.5	\$500.1	\$955.6	\$419.5	\$464.7	\$884.2	\$270.3	\$463.6	\$733.9
Materials conversion revenues	8.4	68.2	76.6	11.4	79.3	90.7	9.7	86.3	96.0
Other revenues	4.0	5.1	9.1	2.3	4.9	7.2	0.6	9.4	10.0
Total revenues (1)	\$467.9	\$573.4	\$1,041.3	\$433.2	\$548.9	\$982.1	\$280.6	\$559.3	\$839.9

(1) Revenues include net hedging gains and losses for the years ended December 31, 2018, 2017 and 2016.

Net sales are attributed to the following geographic locations based on the location of the Company's direct customers (\$ in millions):

	For the Years Ended December 31,								
	2018			2017			2016		
	AMS	EP	Total	AMS	EP	Total	AMS	EP	Total
United States	\$320.1	\$193.3	\$513.4	\$292.7	\$176.2	\$468.9	\$183.3	\$188.9	\$372.2
Europe and the former Commonwealth of Independent States	46.2	214.6	260.8	51.6	208.3	259.9	41.4	211.8	253.2
Asia/Pacific (including China)	76.6	82.8	159.4	66.1	82.3	148.4	43.4	86.0	129.4
Latin America	10.0	43.5	53.5	9.4	48.5	57.9	6.2	41.2	47.4
Other foreign countries	15.0	39.2	54.2	13.4	33.6	47.0	6.3	31.4	37.7
Total revenues (1)	\$467.9	\$573.4	\$1,041.3	\$433.2	\$548.9	\$982.1	\$280.6	\$559.3	\$839.9

(1) Revenues include net hedging gains and losses for the years ended December 31, 2018, 2017 and 2016.

Note 4. Business Acquisitions

On January 20, 2017, the Company completed the acquisition of Conwed pursuant to the Equity Interest Purchase Agreement, dated as of December 14, 2016, by and among the Company, Delstar Technologies, Inc., Baldwin Enterprises, Inc., Conwed and Leucadia National Corporation. As a result of the transaction, Conwed and its subsidiaries became wholly-owned indirect subsidiaries of the Company. The acquisition of Conwed expanded and continued the diversification of SWM's global presence in advanced materials and has been integrated into the Company's AMS segment.

The consideration transferred to acquire Conwed was \$295.0 million in cash, subject to certain customary post-closing adjustments, plus three potential earn-out payments not to exceed \$40.0 million in the aggregate, which payments are contingent upon the achievement of certain financial metrics in each of 2019, 2020 and 2021, in each case, upon the terms and subject to the conditions contained in the Purchase Agreement. The estimated fair value of the potential earn-out payments at the acquisition date was \$8.6 million, for total consideration transferred of \$303.6 million. The estimated fair value of the deferred contingent consideration was determined based on management's projections related to the achievement of certain financial metrics for the aforementioned years. The discount rate used to value the liability was based on specific business risk, cost of capital and other factors. The fair value of the contingent consideration was determined using significant unobservable inputs and is considered a Level 3 liability. The liability associated with the contingent consideration is remeasured each quarter subsequent to the acquisition date, taking into consideration the changes in management's projections related to the achievement of certain financial metrics related

to the contingent

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consideration. The liability will continue to be remeasured each quarter until either the agreement has expired or the contingency is resolved. Any changes in the fair value of contingent consideration related to updated assumptions and estimates are recognized within Other income, net, in the Condensed Consolidated Statements of Income during the period in which the change occurs.

As of December 31, 2017, the fair value of the contingent liability was \$9.5 million. During the year ended December 31, 2018, the fair value of the contingent liability had increased to \$10.2 million, including \$0.7 million in accretion year-to-date. Upon review of management's projections and estimates through December 31, 2021, the Company determined that the contingent payments were no longer probable, such that the fair value of the contingent consideration was reduced to \$0.0 million as of December 31, 2018, resulting in a \$10.2 million gain recognized in Other income, net.

The purchase price for Conwed was funded from the Company's borrowings under the First Amendment to Second Amended and Restated Credit Agreement, while the purchase price for Conwed NV was funded from cash on hand. See Note 14. Debt, for additional information.

The consideration paid for Conwed and the final fair values of the assets acquired and liabilities assumed as of the January 20, 2017 acquisition date were as follows (\$ in millions):

	Fair Value as of January 20, 2017
Cash and cash equivalents	\$ 3.3
Accounts receivable	15.4
Inventory	20.6
Other current assets	1.1
Property, plant and equipment	31.7
Identifiable intangible assets	134.4
Total assets	206.5
Accounts payable	8.2
Deferred tax liabilities	0.9
Net assets acquired	197.4
Goodwill	106.2
Total consideration	\$ 303.6

The Company used the income, market, or cost approach (or a combination thereof) for the valuation as appropriate, and used valuation inputs in these models and analyses that were based on market participant assumptions. Market participants are considered to be buyers and sellers in the principal or most advantageous market for the asset or liability. For certain items, the carrying amount was determined to be a reasonable approximation of fair value based on information available to SWM management. The fair value of receivables acquired from Conwed on January 20,

2017 was \$15.4 million, with gross contractual amounts receivable of \$15.8 million. Acquired inventories and property, plant and equipment were recorded at their fair values. Acquired intangible assets are primarily customer relationships, developed technology, trade names and non-competition agreements.

The fair value of the inventory acquired from Conwed on January 20, 2017 was \$20.6 million, which included a step-up in basis of \$2.9 million. Finished goods and work-in-process inventory was valued using the comparative sales method, which is a function of the estimated selling price less the sum of (a) any cost to complete, (b) costs of disposal,

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(c) holding costs and (d) a reasonable profit for allowance for the acquirer. Raw materials were valued using the replacement cost method of the cost approach.

Properties acquired included manufacturing and related facilities, land and leased sites that include leasehold improvements, and machinery and equipment for use in manufacturing operations. Management valued properties using the market and cost approaches, supported where available by observable market data which included consideration of obsolescence.

Intangible assets acquired included a number of customer relationships in the infrastructure, construction and industrial end-markets. In addition to these intangible assets, the Company acquired a number of patented and unpatented technologies, a number of business-to-business trade names and non-competition agreements. Management valued intangible assets using the relief from royalty, multi-period excess earnings and with-and-without methods, all forms of the income approach supported by observable market data for peer companies. The following table shows the fair values assigned to intangible assets (\$ in millions):

	Fair Value as of January 20, 2017	Weighted-Average Amortization Period (Years)
Amortizable intangible assets:		
Customer relationships	\$ 108.0	15.0
Developed technology	18.1	17.2
Non-competition agreements	1.2	7.2
Total amortizable intangible assets	127.3	
Indefinite-lived intangible assets:		
Trade names	7.1	Indefinite
Total	\$ 134.4	

In connection with the acquisition, the Company recorded goodwill, which represents the excess of the consideration transferred over the fair value of tangible and intangible assets acquired, net of liabilities assumed. The goodwill is attributed primarily to Conwed's revenue growth and potential operational synergies from combining the SWM and Conwed businesses and workforces as well as the benefits of access to different markets and customers. Goodwill from the Conwed acquisition was assigned to the AMS reportable segment. The goodwill was determined on the basis of the fair values of the assets and liabilities identified as part of the transaction. The goodwill acquired in connection with Conwed and its domestic subsidiaries is expected to be deductible for tax purposes. The goodwill associated with Conwed NV is not expected to be deductible for tax purposes.

For the years ended December 31, 2018, 2017 and 2016, the Company recognized \$0.0 million, \$0.2 million and \$1.4 million, respectively, in direct and indirect acquisition-related costs for the Conwed acquisition. For the year ended December 31, 2017, the Company incurred \$0.6 million in financing costs related to the acquisition. Direct and indirect acquisition-related costs were expensed as incurred and are included in the General expense line item in the consolidated statements of income. Financing costs related to expanding the Amended Credit Agreement (as defined below) have been capitalized and will be amortized in Interest expense over the life of the Amended Credit Agreement.

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The amounts of Net sales and Income from continuing operations of Conwed included in the Company's consolidated income statement from the acquisition date are as follows (\$ in millions):

	Net Sales	Income from Continuing Operations
January 21, 2017 - December 31, 2017	\$ 141.3	\$ 11.9

The amounts of the unaudited pro forma Net sales and Income from continuing operations of the combined entity had the acquisition date been January 1, 2016 are as follows (\$ in millions):

	Net Sales	Income from Continuing Operations
2017 Supplemental Pro Forma from January 1, 2017 - December 31, 2017	\$989.8	\$ 31.1
2016 Supplemental Pro Forma from January 1, 2016 - December 31, 2016	984.1	90.6

Note 5. Discontinued Operations

The Company's former paper plant in San Pedro, Philippines has been reported as discontinued operations. This operation was previously presented as a component of the EP segment. For all periods presented, results of this plant have been removed from each individual line within the statements of income and the operating activities section of the statements of cash flow. In each case, a separate line has been added for the net results of discontinued operations.

Included in Other Assets and Accrued Expenses within the Consolidated Balance Sheets were the following major classes of assets and liabilities, respectively, associated with the discontinued operations (\$ in millions):

	December 31, 2018	December 31, 2017
Assets of discontinued operations:		
Current assets	\$ 0.8	\$ 1.0
Other assets	1.2	2.4
Liabilities of discontinued operations:		
Current liabilities	0.1	0.1

Summary financial results of discontinued operations were as follows (\$ in millions):

	For the Years Ended December 31,		
	2018	2017	2016
Net sales	\$—	\$—	\$ —
Other (expense) income	(0.3)	0.1	—
(Loss) gain from discontinued operations before income taxes	(0.3)	0.1	—
Income tax (provision) benefit	—	—	—
(Loss) gain from discontinued operations	\$(0.3)	\$0.1	\$ —

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Note 6. Accounts Receivable

Accounts receivable, net are summarized as follows (\$ in millions):

	December 31,	
	2018	2017
Trade receivables	\$ 130.9	\$ 120.2
Business tax credits, including VAT	4.0	4.3
Hedge contracts receivable	2.1	4.8
Other receivables	19.3	21.1
Less allowance for doubtful accounts and sales discounts	(1.7)	(1.0)
Total accounts receivable, net	\$ 154.6	\$ 149.4

Note 7. Inventories

Inventories are valued at the lower of cost (using the First-In, First-Out and weighted average methods) or market. The Company's costs included in inventory primarily include resins, pulp, chemicals, direct labor, utilities, maintenance, depreciation, finishing supplies and an allocation of certain overhead costs. Machine start-up costs or abnormal machine shut downs are expensed in the period incurred and are not reflected in inventory. The definition of market value, with respect to all inventories, is net realizable value. The Company reviews inventories at least quarterly to determine the necessity of write-offs for excess, obsolete or unsalable inventory. The Company estimates write-offs for inventory obsolescence and shrinkage based on its judgment of future realization. These reviews require the Company to assess customer and market demand. The following schedule details inventories by major class (\$ in millions):

	December 31,	
	2018	2017
Raw materials	\$ 50.2	\$ 50.4
Work in process	22.4	21.3
Finished goods	69.9	74.2
Supplies and other	9.0	9.3
Total	\$ 151.5	\$ 155.2

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Note 8. Property, Plant and Equipment

Property, plant and equipment are stated at cost, less accumulated depreciation. Interest is capitalized as a component of the cost of construction for large projects. Expenditures for betterments are capitalized whereas normal repairs and maintenance are expensed as incurred. Property, other than land, is depreciated on a straight-line basis for financial reporting purposes. When property is sold or retired, the cost of the property and the related accumulated depreciation are removed from the balance sheet, and any gain or loss on the transaction is normally included in cost of products sold.

Property, plant and equipment (and related depreciable lives) consisted of the following (\$ in millions):

	December 31,	
	2018	2017
Land and improvements	\$15.0	\$15.3
Buildings and improvements (20 to 40 years or remaining life of relevant lease)	142.0	145.1
Machinery and equipment (5 to 20 years)	620.9	621.9
Construction in progress	14.6	28.1
Gross property, plant and equipment	792.5	810.4
Less: Accumulated depreciation	452.2	448.5
Property, plant and equipment, net	\$340.3	\$361.9

Depreciation expense was \$38.1 million, \$35.7 million and \$29.4 million for the years ended December 31, 2018, 2017, and 2016, respectively.

Note 9. Joint Ventures

The Company has two joint ventures with China National Tobacco Corporation, or CNTC. CNTC is the principal operating Company under China's State Tobacco Monopoly Administration. CNTC and the Company's subsidiary, Schweitzer-Mauduit International China, Limited, or SM-China, each own 50% of each of the joint ventures. The paper joint venture China Tobacco Mauduit (Jiangmen) Paper Industry Co. LTD, or CTM, produces tobacco-related papers in China. The second joint venture China Tobacco Schweitzer (Yunnan) Reconstituted Tobacco Co. LTD, or CTS, produces reconstituted tobacco leaf products. The joint ventures pay to each the Company and CNTC sales-based royalties and management fees, of which SWM recognized \$2.2 million, \$2.1 million and \$2.0 million in 2018, 2017 and 2016, respectively, in other income, net in the consolidated statements of income.

The Company uses the equity method to account for its ownership interest in both joint ventures. At December 31, 2018 and 2017, the Company's equity investment in joint ventures was \$51.9 million and \$68.5 million, respectively. The Company's share of the net income (loss) was included in income (loss) from equity affiliates within the consolidated statements of income. We evaluate our equity method investments for impairment when events or changes in circumstances indicate, in our judgment, that the carrying value of such investment may have experienced an other than temporary decline in value. When evidence of loss in value has occurred, we compare the estimated fair value of the investment to the carrying value of the investment to determine whether impairment has occurred. We assess the fair value of our equity method investment using commonly accepted techniques, and may use more than one method, including, but not limited to, internally developed analysis and analysis of external data. If the estimated fair value is less than the carrying value and we consider the decline in value to be other than temporary, the excess of the carrying value over the estimated fair value is recognized in the consolidated financial statements as an impairment.

As a result of declining sales, negative developments during the fourth quarter of 2018, and the current and forecasted production volumes compared to normal capacity, the Company performed an impairment analysis at December 31, 2018 and recorded a \$15.0 million impairment charge within (Loss) income from equity affiliates, net of income taxes, in the consolidated statements of income. The fair value of the CTS joint venture was estimated using Level 3 inputs under the fair value hierarchy using a discounted cash flow method based on management's best estimates of future

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operating results. These estimates and judgments are based, in part, on the Company's current and future evaluation of economic conditions in general, as well as CTS' current and future plans. These fair value calculations are highly subjective because they require management to make assumptions and apply judgments to estimates regarding the timing and amount of future cash flows, probabilities related to various cash flow scenarios, and appropriate discount rates based on the perceived risks, among others. In evaluating whether the impairment is other than temporary, the Company considered all available information, including the length of time and extent of the impairment, the financial condition and near-term prospects of the CTS joint venture, the Company's ability and intent to hold the investment for a period of time sufficient to allow for any anticipated recovery in market value, and projected industry and economic trends, among others. Changes in these and other assumptions could affect the projected operational results and fair value of the CTS joint venture, and accordingly, may require future valuation adjustments to the Company's investment that may materially impact the Company's financial condition or its future operating results.

Below is summarized balance sheet information as of December 31, 2018 and 2017 (\$ in millions):

	December 31,	
	2018	2017
Current assets	\$116.7	\$111.5
Noncurrent assets	183.6	206.2
Current liabilities	65.3	64.8
Long-term liabilities	100.9	114.7
Stockholder's equity	134.1	138.2

Below is summarized statement of operations information of the China joint ventures for the years ended December 31, 2018, 2017 and 2016 (\$ in millions):

	For the Years Ended		
	December 31,		
	2018	2017	2016
Net sales	\$109.7	\$105.0	\$107.5
Gross profit	33.4	29.1	36.5
Net income	7.4	4.9	9.5

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Note 10. Goodwill

The Company evaluates goodwill for impairment at least annually during the fourth quarter. The annual tests during the fourth quarters of 2018, 2017 and 2016 resulted in no impairment. Each of the Company's two reportable segments, AMS and EP, have goodwill. There are no accumulated impairment losses in the AMS segment as of December 31, 2018. The EP segment has recorded \$2.7 million in accumulated impairment losses in previous years.

The changes in the carrying amount of goodwill for each reportable segment were as follows (\$ in millions):

	Advanced Materials & Structures	Engineered Papers	Total
Goodwill as of December 31, 2016	\$ 224.8	\$ 4.7	\$ 229.5
Goodwill acquired during the year	106.2	—	106.2
Foreign currency translation adjustments	5.1	0.5	5.6
Goodwill as of December 31, 2017	\$ 336.1	\$ 5.2	\$ 341.3
Foreign currency translation adjustments	(3.0)	(0.2)	(3.2)
Goodwill as of December 31, 2018	\$ 333.1	\$ 5.0	\$ 338.1

Note 11. Intangible Assets

The gross carrying amount and accumulated amortization for intangible assets consisted of the following (\$ in millions):

	December 31, 2018				
	Gross Carrying Amount	Accumulated Amortization	Accumulated Impairments	Accumulated Foreign Exchange	Net Carrying Amount
Amortized Intangible Assets					
Advanced Materials & Structures					
Customer relationships	\$276.3	\$ 50.4	\$ —	\$ 0.7	\$ 225.2
Developed technology	34.0	8.5	—	0.2	25.3
Trade names	21.8	0.8	20.7	0.3	—
Non-compete agreements	2.9	1.7	—	—	1.2
Patents	1.5	0.4	—	—	1.1
Total	\$336.5	\$ 61.8	\$ 20.7	\$ 1.2	\$ 252.8
Unamortized Intangible Assets (Advanced Materials & Structures)					
Trade names	\$20.0	\$ —	\$ 0.1	\$ (0.1)	\$ 20.0

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	December 31, 2017				
	Gross Carrying Amount	Accumulated Amortization	Accumulated Impairments	Accumulated Foreign Exchange	Net Carrying Amount
Amortized Intangible Assets					
Advanced Materials & Structures					
Customer relationships	\$276.3	\$ 32.9	\$ —	\$ (2.3)	\$ 245.7
Developed technology	34.0	6.0	—	(0.1)	28.1
Customer contracts	0.9	0.9	—	—	—
Trade names	21.8	0.8	20.7	0.3	—
Non-compete agreements	2.9	1.1	—	—	1.8
Patents	1.5	0.3	—	—	1.2
Total	\$337.4	\$ 42.0	\$ 20.7	\$ (2.1)	\$ 276.8
Unamortized Intangible Assets (Advanced Materials & Structures)					
Trade names	\$20.0	\$ —	\$ —	\$ (0.4)	\$ 20.4

Amortization expense of intangible assets was \$20.7 million, \$20.9 million and \$12.3 million for the years ended December 31, 2018, 2017 and 2016, respectively. Finite-lived intangibles in the AMS segment are expensed using the straight-line amortization method.

In our AMS segment, the Company made a strategic decision to transition away from certain legacy business trade names associated with its recent acquisitions in favor of a streamlined SWM branding approach. As a result of adopting this branding strategy, in the fourth quarter of 2016, the Company recognized an impairment expense of \$20.7 million, representing a write-down of the DelStar trade name intangible asset to its fair market value, leaving a remaining balance of \$0.8 million, which was fully amortized over the first six months of 2017, as the DelStar trade name was phased out.

The following table shows the estimated aggregate amortization expense for the next five years (\$ in millions):

For the year ending December 31,	Estimated Amortization Expense
2019	\$ 20.4
2020	20.0
2021	20.0
2022	20.0
2023	19.7

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Note 12. Other Assets

Other assets consisted of the following (\$ in millions):

	December 31,	
	2018	2017
Capitalized software costs, net of accumulated amortization	\$8.3	\$7.4
Business tax credits, including VAT and ICMS (net of \$11.5 million and \$10.6 million reserve as of December 31, 2018 and 2017, respectively)	1.2	2.4
Grantor trust assets	10.9	12.2
Net pension assets	0.8	4.6
Long-term supplies inventory	6.8	7.0
Other assets	5.9	5.9
Total	\$33.9	\$39.5

The Company's ICMS credits in Brazil are fully reserved. These credits do not expire. The Company is exploring other actions to utilize the credits. Charges and credits associated with normal ongoing activity are included in Cost of products sold in the Consolidated Statements of Income. Future material changes as a result of new legislation or a change in our operations will be reported separately.

Grantor trust assets consist primarily of cash surrender values in Company-owned life insurance policies held by a trust to be used for the eventual payment of employee deferred compensation. These assets are restricted from Company use until all obligations are satisfied.

Note 13. Restructuring and Impairment Activities

The Company incurred restructuring and impairment expenses of \$1.7 million, \$8.1 million and \$25.6 million in the years ended December 31, 2018, 2017 and 2016, respectively.

The Company incurred \$1.5 million, \$2.7 million and \$21.3 million in restructuring and impairment expenses during the years ended December 31, 2018, 2017 and 2016, respectively, within the AMS segment. Restructuring and impairment expense for the year ended December 31, 2018 consisted of \$1.1 million in severance accruals for employees at our U.S. manufacturing operations, as well as \$0.4 million in impairment charges at our U.S. manufacturing facilities. Restructuring and impairment expense for the year ended December 31, 2017 consisted of \$2.6 million in severance accruals for employees at our U.S. and Belgium manufacturing operations, as well as \$0.1 million in impairment charges at one of our U.S. manufacturing facilities. During 2016, \$20.7 million of the expense in the AMS segment was attributable to the impairment of the DelStar trade name, as discussed in Note 11. Intangible Assets. The remaining amount in 2016 related to accruals for severance incurred during the acquisition of the assets from Smith & Nephew in December 2014.

In the EP segment, restructuring and impairment expenses were \$0.2 million, \$5.3 million and \$4.0 million during the years ended December 31, 2018, 2017 and 2016, respectively. During 2018, restructuring and impairment expenses in the EP segment consisted of \$0.2 million in severance accruals for employees at our manufacturing facilities in France.

During 2017, restructuring and impairment expenses in the EP segment consisted of \$0.8 million in severance accruals for employees at our manufacturing facilities in the U.S. and France, as well as an impairment charge of \$4.0 million at our Philippines RTL location, and impairment charges totaling \$0.5 million at our French and United States manufacturing facilities.

In 2016, restructuring and impairment expenses in the EP segment consisted of \$3.4 million related to severance expenses in the French, Brazilian and U.S. operations for ongoing accruals over the remaining service lives of affected

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employees related to previously announced actions as well as \$0.6 million of impairment charges to certain of the Company's manufacturing equipment in Poland and Brazil.

Additionally, the Company incurred \$0.0 million, \$0.1 million, and \$0.3 million in 2018, 2017, and 2016, respectively, in restructuring expenses related to accruals for severance expenses within supporting overhead departments which were not allocated to a specific segment.

Restructuring liabilities were classified within Accrued expenses in each of the Consolidated Balance Sheets as of December 31, 2018 and 2017. Changes in the restructuring liabilities, substantially all of which are employee-related, are summarized as follows (\$ in millions):

	2018	2017
Balance at beginning of year	\$1.7	\$4.3
Accruals for announced programs	1.3	3.5
Cash payments	(3.3)	(6.4)
Other	1.8	—
Exchange rate impacts	(0.1)	0.3
Balance at end of period	\$1.4	\$1.7

Long-lived assets to be sold are classified as held for sale in the period in which all of the following criteria are met: management, having the authority to approve the action, commits to a plan to sell the assets; the assets are available for immediate sale in present condition subject only to terms that are usual and customary for sales of such assets; an active program to locate a buyer and other actions required to complete the plan to sell the assets has been initiated; the sale of the assets is probable, and transfer of the assets is expected to qualify for recognition as a completed sale within one year, except if events or circumstances beyond our control extend the period of time required to sell the assets beyond one year; the assets are being actively marketed for sale at a price that is reasonable in relation to current fair value; and actions required to complete the plan indicate that it is unlikely that significant changes to the plan will be made or that the plan will be withdrawn.

A long-lived asset that is classified as held for sale is initially measured at the lower of its carrying value or fair value less any costs to sell. Any loss resulting from this measurement is recognized in the period in which the held for sale criteria are met. Conversely, gains are not recognized on the sale of a long-lived asset until the date of sale. The fair value of a long-lived asset less any costs to sell is assessed each reporting period it remains classified as held for sale and any reduction in fair value is reported as an adjustment to the carrying value of the asset. Upon being classified as held for sale, depreciation is ceased. Long-lived assets to be disposed of other than by sale are continued to be depreciated. Upon determining that a long-lived asset meets the criteria to be classified as held for sale, the assets and liabilities of the disposal group, if material, are reported in the line item "Assets held for sale" in our Consolidated Balance Sheets.

In early 2015, the Company made the decision to dispose of the Company's mothballed RTL facility and related equipment in the Philippines. These assets are included in the EP segment. During 2015, the Company reclassified the equipment at this location, along with the land and building associated with the property, from Property, plant and equipment, net, to Assets held for sale on the Consolidated Balance Sheets. The reclassifications were made for all assets that are expected to be sold within one year of the balance sheet date and, as of December 31, 2015, all of the physical assets of this entity were classified as Assets held for sale. Impairment charges of \$4.0 million were recognized on these assets during the year ended December 31, 2017. There were no impairment charges related to these assets recorded during 2016 or 2018.

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Note 14. Debt

Total debt, net of debt issuance costs, is summarized in the following table (\$ in millions):

	December 31, 2018	December 31, 2017
Revolving credit agreement - U.S. dollar borrowings	\$ 76.0	\$ 344.5
Revolving credit agreement - Euro borrowings	—	26.4
Term loan facility	199.5	—
Term loan A-1	—	60.0
Term loan A-2	—	244.4
6.875% senior unsecured notes due October 1, 2026, net of discount of \$7.6 million	342.4	—
French employee profit sharing	6.6	9.1
Long-term capital lease obligations	4.7	4.1
Other	0.1	1.5
Debt issuance costs	(7.2) (5.8
Total debt	622.1	684.2
Less: Current debt	(3.3) (5.1
Long-term debt	\$ 618.8	\$ 679.1

New Credit Facility

On September 25, 2018, the Company entered into a \$700.0 million credit agreement (the “New Credit Agreement”), which replaces the Company’s existing senior secured credit facilities and provides for a five-year \$500.0 million revolving line of credit (the “Revolving Credit Facility”) and a seven-year \$200.0 million bank term loan facility (the “Term Loan Facility”). Subject to certain conditions, including the absence of a default or event of default under the New Credit Agreement, the Company may request incremental loans to be extended under the Revolving Credit Facility or the Term Loan Facility so long as the Company is in pro forma compliance with the financial covenants set forth in the New Credit Agreement and the aggregate of such increases does not exceed \$400.0 million.

Borrowings under the Revolving Credit Facility will initially bear interest, at the Company’s option, at either (i) 1.75% in excess of a reserve adjusted London Interbank Offered Rate (“LIBOR”) or (ii) 0.75% in excess of an alternative base rate. Borrowings under the Term Loan Facility will initially bear interest, at the Company’s option, at either (i) 2.00% in excess of a reserve adjusted LIBOR rate or (ii) 1.00% in excess of an alternative base rate. The Term Loan amortizes at the rate of 1.0% per year and will mature on September 25, 2025.

Under the terms of the New Credit Agreement, the Company will be required to maintain certain financial ratios and comply with certain financial covenants, including maintaining a net debt to EBITDA ratio, as defined in the New Credit Agreement, calculated on a trailing four fiscal quarter basis, not greater than 4.50 and an interest coverage ratio, also as defined in the New Credit Agreement, of not less than 3.00. In addition, borrowings and loans made under the New Credit Agreement are secured by substantially all of the personal property of the Company and its domestic subsidiaries, while the obligations of the Luxembourg-based holding subsidiaries were secured by a pledge of certain of the equity interests held in their operating subsidiaries. The Company was in compliance with all of its covenants under the New Credit Agreement at December 31, 2018.

Also on September 25, 2018, the Company borrowed approximately \$91.0 million under the Revolving Credit Facility and \$200.0 million under the Term Loan Facility. The Company utilized these borrowings under the New Credit

Agreement together with the net proceeds from the offering of the Senior Unsecured Notes discussed below to refinance all amounts outstanding under the Company's Prior Credit Agreement and to pay related fees and expenses.

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As of December 31, 2018, the average interest rate was 4.31% on outstanding US Revolving Credit Facility borrowings and 4.56% on outstanding Term Loan Facility borrowings.

Indenture for 6.875% Senior Unsecured Notes Due 2026

On September 25, 2018, the Company closed a private offering of \$350.0 million of 6.875% senior unsecured notes due 2026 (the "Notes"). The Notes were sold in a private placement in reliance on Rule 144A and Regulation S under the Securities Act of 1933, as amended, pursuant to a purchase agreement between the Company, certain subsidiaries of the Company and J.P. Morgan Securities LLC, as representative of the initial purchasers. The Notes are guaranteed on a senior unsecured basis by each of the Company's existing and future wholly-owned subsidiaries that is a borrower under or that guarantees obligations under the New Credit Agreement (as defined below) or that guarantees certain other indebtedness, subject to certain exceptions.

The Notes were issued pursuant to an Indenture (the "Indenture"), dated as of September 25, 2018, by and among the Company, the guarantors listed therein and Wilmington Trust, National Association, as trustee. The Indenture provides that interest on the Notes will accrue from September 25, 2018 and is payable semi-annually in arrears on April 1 and October 1 of each year, beginning on April 1, 2019, and the Notes mature on October 1, 2026.

The Company may redeem some or all of the Notes at any time on or after October 1, 2021, at the redemption prices set forth in the Indenture, together with accrued and unpaid interest, if any, to, but excluding, the redemption date. Prior to October 1, 2021, the Company may redeem some or all of the Notes at a price equal to 100% of the principal amount thereof, plus a "make-whole" premium as set forth in the Indenture. The Company may redeem up to 35% of the original aggregate principal amount of the Notes on or prior to October 1, 2021 with the proceeds of certain equity offerings at a redemption price equal to 106.875% of the principal amount of the Notes. If the Company sells certain assets or consummates certain change of control transactions, the Company will be required to make an offer to repurchase the Notes, subject to certain conditions.

The Indenture contains certain covenants that, among other things, limit the Company's ability and the ability of its restricted subsidiaries to incur additional indebtedness, make certain dividends, repurchase Company stock or make other distributions, make certain investments, create liens, transfer or sell assets, merge or consolidate and enter into transactions with the Company's affiliates. Such covenants are subject to a number of exceptions and qualifications set forth in the Indenture. The Indenture also contains certain customary events of default, including failure to make payments in respect of the principal amount of the Notes, failure to make payments of interest on the Notes when due and payable, failure to comply with certain covenants and agreements and certain events of bankruptcy or insolvency. The Company was in compliance with all of its covenants under the Indenture at December 31, 2018.

The effective interest rate on the 6.875% senior unsecured notes due 2026, taking into account all underwriter and original issue discounts, was 7.248%.

Prior Credit Agreement

On December 1, 2016, the Company entered into the First Amendment to Second Amended and Restated Credit Agreement ("First Amendment") with JPMorgan Chase Bank, N.A. as administrative agent. Under the terms of the First Amendment, and effective upon the closing of the Conwed acquisition on January 20, 2017, the Company's maximum net debt to EBITDA ratio, as defined in the First Amendment, calculated on a trailing four fiscal quarter basis, was required to be not greater than 4.25 at December 31, 2017, reducing to 4.00 after December 31, 2017, 3.75

after March 31, 2018, 3.50 after June 30, 2018 and 3.00 after December 31, 2018.

On October 28, 2015, the Company, together with two of its Luxembourg-based wholly-owned holding subsidiaries, entered into the Second Amended and Restated Credit Agreement, or the Amended Credit Agreement, with JPMorgan Chase Bank, N.A., as administrative agent, providing for credit facilities in the aggregate principal amount of \$1 billion, consisting of a \$650 million revolving credit facility, or Revolving Credit Facility available to the Company; a \$100 million Term Loan A-1 (“Term Loan A-1”) made to the Company; and a \$250 million Term Loan A-2 (“Term Loan A-2” and, together with Term Loan A-1, the “Term Loans”) made to the Company. The Revolving Credit Facility was

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to mature on October 28, 2020. The Term Loan A-1 amortized at the rate of 5.0% for the first two years, at the rate of 10.0% for the final three years and was to mature on October 28, 2020. The Term Loan A-2 amortizes at the rate of 1.0% per year and matures on October 28, 2022. The Term Loans were generally subject to mandatory repayment out of the net cash proceeds of asset sales which are not reinvested in operating assets. The credit facilities were secured by substantially all of the personal property of the Company and its domestic subsidiaries, while the obligations of the Luxembourg-based holding subsidiaries were secured by a pledge of certain of the equity interests held in their operating subsidiaries. In December 2015, the Company prepaid the full amount of amortization for Term Loan A-1, which totaled \$40 million.

The interest rate margins applicable to the Revolving Credit Facility and the Term Loans under the Amended Credit Agreement were based on a fluctuating rate of interest measured by reference to either, at the Company's option, (i) a base rate, plus an applicable margin, which ranged from 0.25% to 1.50%, in the case of the Revolving Credit Facility and Term Loan A-1, and from 0.50% to 1.75%, in the case of Term Loan A-2, or (ii) an adjusted London interbank offered rate (adjusted for maximum reserves) ("LIBOR"), plus an applicable margin, which ranged from 1.25% to 2.50%, in the case of the Revolving Credit Facility and Term Loan A-1, and from 1.50% to 2.75%, in the case of Term Loan A-2. The applicable margin, in each case, was adjusted from time to time based on the Company's ratio of net debt to EBITDA as defined by the Amended Credit Agreement.

French Employee Profit Sharing

At both December 31, 2018 and 2017, long-term debt other than the Amended Credit Agreement primarily consisted of obligations of the French operations related to government-mandated profit sharing. Each year, representatives of the workers at each of the French businesses can make an election for the profit sharing amounts from the most recent year ended to be invested in a financial institution or with their respective employer. To the extent that funds are invested with the Company, these amounts bear interest at 1.04% and 1.15% at December 31, 2018 and 2017, respectively, and are generally payable in the fifth year subsequent to the year in which the profit sharing is accrued.

Bank Overdrafts

The Company also had bank overdraft facilities of \$6.1 million and \$20.0 million, at December 31, 2018 and 2017, respectively, of which none was outstanding at either December 31, 2018 or 2017. Interest is incurred on outstanding amounts at market rates and was 0.26% and 0.24%, respectively, at December 31, 2018 and 2017. No commitment fees are paid on the unused portion of these facilities.

Rate Swap Agreements

From time to time, the Company enters into interest rate swap transactions to manage the Company's interest rate risk and cross-currency swaps designated as a hedge of a portion of the Company's net investment in certain Euro-denominated subsidiaries. See Note 15. Derivatives for additional information.

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Principal Repayments

Under the New Credit Agreement, the Company selects an "interest period" for each of its borrowings from the Revolving Credit Facility. The Company can repay such borrowings and borrow again at a subsequent date if it chooses to do so, providing it flexibility and efficient use of any excess cash. The Company currently has the intent and ability to allow its debt balances to remain outstanding and expects to continue to file notices of continuation related to its borrowings outstanding at December 31, 2018 such that those amounts are not expected to be repaid prior to the September 2023 expiration of the Revolving Credit Facility. Following are the expected maturities for the Company's debt obligations as of December 31, 2018 (\$ in millions):

2019	\$4.6
2020	3.2
2021	3.9
2022	3.8
2023	79.0
Thereafter	542.4
Total	\$636.9

Fair Value of Debt

At December 31, 2018, the fair market value of the Company's 6.875% senior unsecured notes was \$331.6 million. The fair market value for the senior unsecured notes was determined using quoted market prices, which are directly observable Level 1 inputs. The fair market value of all other debt as of December 31, 2018 approximated the respective carrying amounts as the interest rates are variable and based on current market indices. At December 31, 2017, the estimated fair values of the Company's current and long-term debt approximated the respective carrying amounts as the interest rates were variable and based on current market indices.

Debt Issuance Costs

In conjunction with the Indenture and New Credit Agreement, the Company capitalized approximately \$3.6 million in deferred debt issuance costs during the year ended December 31, 2018 which will be amortized over the term of the related debt instruments. Additionally, the Company wrote-off \$0.5 million in deferred debt issuance costs related to the prior debt facilities. As of December 31, 2018 and 2017, the Company's total deferred debt issuance costs, net of accumulated amortization, were \$7.2 million and \$5.8 million, respectively.

Amortization expense of \$1.7 million and \$1.8 million was recorded during the years ended December 31, 2018 and 2017, respectively, and has been included as a component of Interest Expense in the accompanying Consolidated Statements of Income. Following is the expected future amortization of the Company's deferred debt issuance costs as of December 31, 2018 (\$ in millions):

2019	\$1.3
2020	1.3
2021	1.3
2022	1.3
2023	1.0
Thereafter	1.0
Total	\$7.2

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Note 15. Derivatives

In the normal course of business, the Company is exposed to foreign currency exchange rate risk and interest rate risk on its variable-rate debt. To manage these risks, the Company utilizes a variety of practices including, where considered appropriate, derivative instruments. The Company has no derivative instruments for trading or speculative purposes or any derivatives with credit risk-related contingent features. All derivative instruments used by the Company are either exchange traded or are entered into with major financial institutions in order to reduce credit risk and risk of nonperformance by third parties. The fair values of the Company's derivative instruments are determined using observable inputs and are considered Level 2 assets or liabilities.

The Company utilizes currency forward, swap and, to a lesser extent, option contracts to selectively hedge its exposure to foreign currency risk when it is practical and economical to do so. The use of these contracts minimizes transactional exposure to exchange rate changes. We designate certain of our foreign currency hedges as cash flow hedges. Changes in the fair value of cash flow hedges are reported as a component of other comprehensive income (loss) and reclassified into earnings when the forecasted transaction affects earnings. For foreign exchange contracts not designated as cash flow hedges, changes in the contracts' fair value are recorded to net income each period.

The Company selectively hedges its exposure to interest rate increases on variable-rate, long-term debt when it is practical and economical to do so. Changes in the fair value of interest rate contracts considered cash flow hedges are reported as a component of other comprehensive income (loss) and reclassified into earnings when the forecasted transaction affects earnings.

On January 20, 2017, the Company entered into an interest rate swap transaction with a major financial institution for a three-year term on a notional amount of \$315 million. The interest rate swap is intended to manage the Company's interest rate risk by fixing the interest rate on a portion of the Company's debt currently outstanding under its credit facility that was previously subject to a floating interest rate equal to 1-month LIBOR plus a credit spread. The swap provides for the Company to pay a fixed rate of 1.65% per annum in addition to the credit spread on such portion of its outstanding debt in exchange for receiving a variable interest rate based on 1-month LIBOR. On September 25, 2018, in conjunction with the debt refinancing discussed in Note 14. Debt, the Company settled a notional amount of \$130 million which resulted in a gain of \$1.8 million as of the settlement date. This gain will be amortized on a ratable basis from Accumulated other comprehensive income into income as interest expense over the remaining term of the interest rate swap.

On January 20, 2017, the Company also entered into a three-year cross-currency swap with a major financial institution designated as a hedge of a portion of the Company's net investment in certain Euro-denominated subsidiaries. The terms of the cross-currency swap provide for an exchange of principal on a notional amount of \$100 million swapped to €93.7 million at maturity. The Company will receive from our swap counterparty U.S. dollar interest at a fixed rate of 1.65% per annum and pay to our swap counterparty Euro interest at a fixed rate of -0.18% per annum.

On October 24, 2018, the Company also entered into a three-year cross-currency swap with a major financial institution designated as a hedge of a portion of the Company's net investment in certain Euro-denominated subsidiaries. The terms of the cross-currency swap provide for an exchange of principal on a notional amount of \$75 million swapped to €65.4 million at maturity. The Company will receive from our swap counterparty U.S. dollar interest at a fixed rate of 6.875% per annum and pay to our swap counterparty Euro interest at a fixed rate of 3.6725% per annum.

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The following table presents the fair value of asset and liability derivatives and the respective balance sheet locations at December 31, 2018 (\$ in millions):

	Asset Derivatives		Liability Derivatives	
	Balance Sheet Location	Fair Value	Balance Sheet Location	Fair Value
Derivatives Designated as Hedges:				
Foreign exchange contracts	Accounts receivable	\$ 2.0	Accrued expenses	\$ 1.3
Foreign exchange contracts	Other assets	1.0	Other liabilities	8.8
Interest rate contracts	Other assets	1.8	Other liabilities	—
Total derivatives designated as hedges		\$ 4.8		\$ 10.1
Derivatives not designated as hedges:				
Foreign exchange contracts	Accounts receivable	\$ 0.1	Accounts payable	\$—
Total derivatives not designated as hedges		0.1		—
Total derivatives		\$ 4.9		\$ 10.1

The following table presents the fair value of asset and liability derivatives and the respective balance sheet locations at December 31, 2017 (\$ in millions):

	Asset Derivatives		Liability Derivatives	
	Balance Sheet Location	Fair Value	Balance Sheet Location	Fair Value
Derivatives Designated as Hedges:				
Foreign exchange contracts	Accounts receivable	\$ 4.7	Accrued expenses	\$ 0.2
Foreign exchange contracts	Other assets	—	Other liabilities	14.2
Interest rate contracts	Other assets	2.0	Other liabilities	—
Total derivatives designated as hedges		\$ 6.7		\$ 14.4
Derivatives not designated as hedges:				
Foreign exchange contracts	Accounts Receivable	0.1	Accounts Payable	—
Total derivatives not designated as hedges		0.1		—
Total derivatives		\$ 6.8		\$ 14.4

The following table provides the gross effect that derivative instruments in cash flow hedging relationships had on accumulated other comprehensive income (loss), or AOCI, and results of operations (\$ in millions):

Derivatives Designated as Cash Flow Hedging Relationships	Unrealized Gain (Loss) Recognized in AOCI on Derivatives, Net of Tax for the Year Ended December 31,			Location of Loss (Gain) Reclassified from AOCI	Loss (Gain) Reclassified from AOCI, Net of Tax		
	2018	2017	2016		2018	2017	2016
Foreign exchange contracts	\$(1.7)	\$2.2	\$14.8	Net sales	\$0.8	\$0.4	\$(3.8)
Foreign exchange contracts	0.1	(0.6)	(1.5)	Other income, net	0.1	0.5	(2.1)
Interest rate contracts	4.0	0.4	(0.1)	Interest expense	2.8	(1.2)	(0.6)
Total	\$2.4	\$2.0	\$13.2		\$3.7	\$(0.3)	\$(6.5)

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The Company's designated derivative instruments are highly effective. As such, related to the hedge ineffectiveness or amounts excluded from hedge effectiveness testing, there were no gains or losses recognized immediately in income for the years ended December 31, 2018, 2017 or 2016.

In January 2018, the Company early adopted the guidance in ASU 2017-12, "Derivatives and Hedging (Topic 815): Targeted Improvements to Accounting for Hedging Activities." Upon adoption of this standard, the Company elected to de-designate the original hedging relationship of its pay-EUR, receive-USD cross currency swap and re-designate the cross currency swap with the terms based on the spot rate of the EUR. Prospectively, future changes in the components related to the spot change on the notional will be recorded in OCI and remain there until the hedged subsidiaries are substantially liquidated. Starting with the adoption date, all coupon payments will be recorded in earnings and the initial value of excluded components currently recorded in AOCI as an unrealized translation adjustment will be amortized into interest expense over the remaining 25 months of the swap, resulting in a positive impact to Net income. As of December 31, 2018, the loss, net of taxes, recognized in Accumulated other comprehensive income on the cross currency swap derivative was \$5.3 million. For the year ended December 31, 2018, \$0.8 million was reclassified from Accumulated other comprehensive loss into income as interest expense and \$1.9 million was recognized in income as derivative amounts excluded from effectiveness testing as Interest expense.

The following table provides the effect derivative instruments not designated as hedging instruments had on net income (\$ in millions):

Derivatives Not Designated as Cash Flow Hedging Instruments	Amount of Gain / (Loss) Recognized in Other Income / Expense		
	2018	2017	2016
Foreign exchange contracts	\$(2.5)	\$2.7	\$1.0
Total	\$(2.5)	\$2.7	\$1.0

Note 16. Accrued Expenses

Accrued expenses consisted of the following (\$ in millions):

	December 31,	
	2018	2017
Accrued salaries, wages and employee benefits	\$43.1	\$46.9
Other accrued expenses	29.8	31.7
Total	\$72.9	\$78.6

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Note 17. Income Taxes

For financial reporting purposes, income before income taxes includes the following components (\$ in millions):

	For the Years Ended December 31,		
	2018	2017	2016
United States	\$55.8	\$42.6	\$27.7
Foreign	61.0	58.9	65.7
Total	\$116.8	\$101.5	\$93.4

An analysis of the provision (benefit) for income taxes from continuing operations follows (\$ in millions):

	For the Years Ended December 31,		
	2018	2017	2016
Current income taxes:			
U.S. federal	\$(9.2)	\$53.2	\$14.3
U.S. state	0.8	0.6	0.1
Foreign	11.6	14.2	17.2
	3.2	68.0	31.6
Deferred income taxes:			
U.S. federal	3.6	(1.3)	(2.7)
U.S. state	1.4	2.9	(4.0)
Foreign	2.5	—	(9.5)
	7.5	1.6	(16.2)
Total	\$10.7	\$69.6	\$15.4

A reconciliation of income taxes computed at the U.S. Federal statutory income tax rate to the provision for income taxes is as follows (\$ in millions):

	For the Years Ended December 31,					
	2018		2017		2016	
	Amount	Percent	Amount	Percent	Amount	Percent
Tax provision at U.S. statutory rate	\$24.5	21.0 %	\$35.6	35.0 %	\$32.6	35.0 %
Foreign income tax rate differential	1.0	0.9	0.7	0.7	(9.0)	(9.6)
State income tax, net of federal benefit	1.7	1.5	2.7	2.6	(2.5)	(2.7)
Domestic production deduction	—	—	(2.4)	(2.3)	(0.9)	(1.0)
Remeasurement of deferred taxes for tax law change	(1.8)	(1.5)	(11.8)	(11.7)	(7.0)	(7.5)
Adjustments to valuation allowances	(2.5)	(2.1)	(2.8)	(2.8)	3.5	3.7
U.S. tax reform transition tax	(11.6)	(10.0)	51.4	50.6	—	—
Other, net	(0.6)	(0.6)	(3.8)	(3.5)	(1.3)	(1.4)
Provision for income taxes	\$10.7	9.2 %	\$69.6	68.6 %	\$15.4	16.5 %

On December 22, 2017, the Tax Act was enacted into law effective January 1, 2018. The new legislation contains several key tax provisions that affected the Company, which include but are not limited to a one-time deemed repatriation tax on post-1986 accumulated earnings and profits of the undistributed earnings of foreign subsidiaries (“transition tax”), a reduction of the federal corporate income tax rate from 35% to 21%, and other U.S. reform items.

Due to the timing and significance of the Tax Act, the Securities and Exchange Commission issued Staff Accounting Bulletin No. 118, Income Tax Accounting Implications of the Tax Cuts and Jobs Act (“SAB 118”), which provided a measurement

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period of up to one year through December 31, 2018 to report the impact of the new US tax law. In 2018, the Company decreased its provisional estimates of transition tax, related currency implications, state taxes and deferred tax rate change effect of the new law by \$13.9 million. The reduction from the provisional 2017 amounts were primarily due to the transition tax further analysis of accumulated earnings and foreign taxes paid. As of December 31, 2018, the Company has completed its accounting for the tax effects of the Tax Act.

The effective tax rate for 2018 was 9.2 percent as compared with 68.6 percent in 2017. This change is primarily due to the amounts recorded for the Tax Act. While a provisional estimate of tax expense for the transition tax of \$48.7 million was recorded in 2017, a tax benefit of \$13.0 million for the finalization of our transition tax calculation was recorded in 2018. Further, our effective tax rate was impacted year over year by our foreign rate differential, global law changes resulting in the re-measurement of deferred tax assets and liabilities and other discrete items.

Prior to the passage of the U.S. Tax Act, the Company asserted that substantially all of the undistributed earnings of its foreign subsidiaries were considered indefinitely reinvested and accordingly, no deferred taxes were provided. Due to the Tax Act, the Company has significant previously taxed income from its foreign subsidiaries, as a result of transition tax, that is generally able to be repatriated free of U. S. federal tax. In addition, future earnings of foreign subsidiaries are generally expected to be able to be repatriated free of U.S. federal income tax because these earnings were taxed in the U.S. under the GILTI regime or would be eligible for a dividends received deduction. Therefore, the Company does not intend to assert indefinite reinvestment on future cash earnings. While the Company will have to provide for withholding taxes and U.S. state taxes on the future earnings, these amounts are not expected to be significant.

Net deferred income tax assets (liabilities) were comprised of the following (\$ in millions):

	December 31,	
	2018	2017
Deferred Tax Assets		
Receivable allowances	\$0.8	\$0.4
Reserves and accruals	—	3.8
Inventory and other assets	1.1	0.7
Postretirement and other employee benefits	14.8	15.9
Net operating loss and tax credit carryforwards	93.3	94.1
Investment in subsidiaries	5.6	—
Intangibles	60.0	73.6
Other	1.2	4.7
	176.8	193.2
Less: Valuation allowance	(172.1)	(182.5)
Net deferred income tax assets	\$4.7	\$10.7
Deferred Tax Liabilities		
Net fixed assets	\$(51.9)	\$(40.5)
Reserves and accruals	(0.2)	—
Investment in subsidiaries	—	(9.8)
Derivatives	(0.3)	(1.3)
Other	—	(0.4)
Net deferred income tax liabilities	\$(52.4)	\$(52.0)

Total net deferred income tax liabilities \$(47.7) \$(41.3)

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As of December 31, 2018 the Company had approximately \$92.0 million of tax-effected operating loss carryforwards available to further reduce future taxable income in various jurisdictions which will expire on various dates as follows:

2018	
2019-2022	\$0.6
2023-2034	12.2
Indefinite	79.2
	\$92.0

In addition, the Company has \$1.3 million of state tax credits that will expire between 2019 - 2037.

The Company's deferred tax asset valuation allowances are primarily the result of uncertainties regarding the future realization of recorded tax benefits on tax loss carryforwards for certain entities. The valuation allowance on deferred tax assets as of December 31, 2018, in Luxembourg, Spain and the Philippines total \$156.5 million, \$8.6 million and \$2.2 million respectively, fully reserving the net deferred tax asset balances in these locations. In addition, there is a valuation allowance on a tax credit receivable of \$3.9 million in Brazil. We believe that it is more likely than not that the benefit from certain state tax attributes will not be realized. In recognition of this risk, we have provided a valuation allowance of \$0.9 million on the related deferred tax assets.

The Company's assumptions, judgments and estimates relative to the valuation of these net deferred tax assets take into account available positive and negative evidence of realizability, including recent financial performance, the ability to realize benefits of restructuring and other recent actions, projections of the amount and category of future taxable income and tax planning strategies. Actual future operating results and the underlying amount and category of income in future periods could differ from the Company's current assumptions, judgments and estimates. The Company believes that it will generate sufficient future taxable income to realize the tax benefits related to the remaining net deferred tax assets.

The following table summarizes the activity related to the Company's unrecognized tax benefits related to income taxes (\$ in millions):

	December 31,		
	2018	2017	2016
Uncertain tax position balance at beginning of year	\$1.0	\$2.4	\$0.9
Increases related to current year tax positions	0.6	0.3	2.0
Increases related to prior year tax positions	—	0.4	—
Decreases related to prior year tax positions	(0.2)	(2.0)	—
Decreases related to expiration of statute of limitations	(0.3)	(0.1)	(0.5)
Uncertain tax position balance at end of year	\$1.1	\$1.0	\$2.4

The liability for unrecognized tax benefits included \$1.1 million as of December 31, 2018 that if recognized would impact the Company's effective tax rate. We do not anticipate a decrease in unrecognized tax benefits by the end of 2019 as a result of a lapse of the statute of limitations and other regulatory filings. The Company's policy with respect to penalties and interest in connection with income tax assessments or related to unrecognized tax benefits is to classify penalties as provision for income taxes and interest as interest expense in its Consolidated Statements of Income. There were no material income tax penalties or interest accrued during the years ended December 31, 2018, 2017 and 2016.

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The Company files income tax returns, including returns for its subsidiaries, with federal, state, local and foreign jurisdictions. Currently, the Company is under U.S. audit for tax years 2014 and 2015. The Company anticipates finalizing this audit during 2019. All expected impacts have been recorded in 2018 or earlier. The following tax years remain subject to examination by the respective major tax jurisdictions:

Jurisdiction	Fiscal Years
Belgium	2015-2017
Brazil	2013-2017
Canada	2011-2017
China	2015-2017
France	2016-2017
Germany	2014-2017
Hong Kong	2012-2017
Luxembourg	2014-2017
Philippines	2015-2017
Poland	2013-2017
Spain	2014-2017
United Kingdom	2012-2017
United States	
Federal	2014-2017
State	2014-2017

Note 18. Postretirement and Other Benefits

North American Pension and Postretirement Healthcare and Life Insurance Benefits

The U.S. operations have defined benefit retirement plans that cover certain full-time employees. Retirement benefits are based on either a cash balance benefit formula or a final average pay formula for certain employees who were "grandfathered" and retained retirement benefits under the terms of the plan prior to its amendment to include a cash balance benefit formula. Benefits related to the U.S. defined benefit and pension plan are frozen for all employees.

The U.S. operations also have unfunded healthcare and life insurance benefit plans, or OPEB plans, which cover certain of its retirees through age 65. Some employees who retained benefits under the terms of the Company's plans prior to certain past amendments receive retiree healthcare coverage at rates subsidized by the Company. For other eligible employees, retiree healthcare coverage access is offered at full cost to the retiree. The postretirement healthcare plans include a limit on the Company's share of costs for current and future retirees. The U.S. operations' retiree life insurance plans are noncontributory. The Company's Canadian postretirement benefits liability is immaterial and therefore is not included in these disclosures.

French Pension Benefits

In France, employees are covered under a government-administered program. In addition, the Company's French operations sponsor retirement indemnity plans, which pay a lump sum retirement benefit to all of its permanent employees who retire. In addition, the Company's French operations sponsor a supplemental executive pension plan. Plan assets are principally invested in the general asset portfolio of a French insurance company.

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U.S. and French Pension and U.S. Other Postretirement Benefit Disclosures

The U.S. pension and OPEB plans and French pension plans accounted for the majority of the Company's total plan assets and total Accumulated Benefit Obligations (ABO) at December 31, 2018 for the Company and all of its consolidated subsidiaries.

The Company uses a measurement date of December 31 for its pension plans in the United States and France and other postretirement healthcare and life insurance benefit plans in the United States. The funded status of these plans as of December 31, 2018 and 2017 was as follows (\$ in millions):

	Pension Benefits				OPEB Benefits	
	United States 2018	United States 2017	France 2018	France 2017	United States 2018	United States 2017
Change in Projected Benefit Obligation, or PBO:						
PBO at beginning of year	\$124.1	\$123.2	\$30.5	\$32.4	\$1.4	\$1.4
Service cost	—	—	1.1	1.1	—	—
Interest cost	4.3	4.8	0.4	0.4	0.1	0.1
Actuarial (gain) loss	(8.2)	3.9	0.9	(2.6)	(0.2)	0.2
Participant contributions	—	—	1.0	—	0.1	0.1
Gross benefits paid	(7.9)	(7.8)	(3.0)	(5.7)	(0.2)	(0.4)
Currency translation effect	—	—	(1.4)	4.9	—	—
PBO at end of year	\$112.3	\$124.1	\$29.5	\$30.5	\$1.2	\$1.4
Change in Plan Assets:						
Fair value of plan assets at beginning of year	\$128.7	\$118.9	\$3.2	\$6.1	\$—	\$—
Actual return on plan assets	(7.6)	17.6	(0.7)	0.2	—	—
Employer contributions	—	—	1.2	1.9	—	0.3
Participant contributions	—	—	—	—	0.2	0.1
Gross benefits paid	(8.0)	(7.8)	(1.5)	(5.6)	(0.2)	(0.4)
Currency translation effect	—	—	(0.1)	0.6	—	—
Fair value of plan assets at end of year	\$113.1	\$128.7	\$2.1	\$3.2	\$—	\$—
Funded status at end of year	\$0.8	\$4.6	\$(27.4)	\$(27.3)	\$(1.2)	\$(1.4)

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The PBO, ABO and fair value of pension plan assets for the Company's U.S. and French defined benefit pension plans as of December 31, 2018 and 2017 as follows (\$ in millions):

	United States		France	
	2018	2017	2018	2017
PBO	\$ 112.3	\$ 124.1	\$ 29.5	\$ 30.5
ABO	112.3	124.1	24.9	25.6
Fair value of plan assets	113.1	128.7	2.1	3.2

As of December 31, 2018, the pre-tax amounts in accumulated other comprehensive income that have not been recognized as components of net periodic benefit cost for the U.S. and French pension plans and other postretirement benefit plans in the United States are as follows (\$ in millions):

	Pension Benefits		OPEB Benefits	
	United States	France	United States	
Accumulated loss	\$ 29.1	\$ 13.5	\$ 0.1	
Prior service credit	—	(3.0)	(0.1)	
Accumulated other comprehensive loss	\$ 29.1	\$ 10.5	\$ —	

The amounts in accumulated other comprehensive loss at December 31, 2018, which are expected to be recognized as components of U.S. and French net periodic benefit cost in 2019 are as follows (\$ in millions):

	Pension Benefits		OPEB Benefits	
	United States	France	United States	
Amortization of accumulated loss	\$(1.9)	\$(1.1)	\$ —	
Amortization of prior service credit	—	0.3	—	
Total	\$(1.9)	\$(0.8)	\$ —	

Actuarial assumptions are used to determine the Company's benefit obligations. The discount rate represents the interest rate used to determine the present value of future cash flows currently expected to be required to settle pension obligations. The discount rate fluctuates from year to year based on current market interest rates for high-quality, fixed-income investments. The Company also evaluates the expected average duration of its pension obligations in determining its discount rate. An assumed long-term rate of compensation increase is also used to determine the PBO. The weighted average assumptions used to determine benefit obligations as of December 31, 2018 and 2017 were as follows:

	Pension Benefits				OPEB Benefits	
	United States		France		United States	
	2018	2017	2018	2017	2018	2017
Discount rate	4.29%	3.60%	1.28%	1.14%	4.30%	3.59%
Rate of compensation increase	— %	— %	1.75%	1.75%	3.50%	3.50%

The U.S. postretirement healthcare plan provides for benefits to be limited to a cost ceiling which has already been reached. Therefore, no increases in the health care cost trend rates are included in the measurement of the plan's benefit obligation.

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The components of net pension and OPEB benefit costs for U.S. employees and net pension benefit costs for French employees during the years ended December 31, 2018, 2017 and 2016 were as follows (\$ in millions):

	U.S. Pension			French Pension			U.S. OPEB		
	Benefits			Benefits			Benefits		
	2018	2017	2016	2018	2017	2016	2018	2017	2016
Service cost	\$—	\$—	\$—	\$1.1	\$1.1	\$1.0	\$—	\$—	\$—
Interest cost	4.3	4.8	5.2	0.4	0.4	0.4	0.1	0.1	0.1
Expected return on plan assets	(5.8)	(6.4)	(6.8)	(0.1)	(0.2)	(0.2)	—	—	—
Amortizations and other	3.2	3.2	3.8	1.1	1.4	1.1	0.1	0.2	0.2
Net periodic benefit cost	\$1.7	\$1.6	\$2.2	\$2.5	\$2.7	\$2.3	\$0.2	\$0.3	\$0.3

Assumptions are used to determine net periodic benefit costs. In addition to the discount rate and rate of compensation increase, which are used to determine benefit obligations, an expected long-term rate of return on plan assets is also used to determine net periodic pension benefit costs. The weighted average assumptions used to determine net periodic benefit costs for the years ended December 31, 2018, 2017 and 2016 were as follows:

	Pension Benefits						OPEB Benefits		
	United States			France			United States		
	2018	2017	2016	2018	2017	2016	2018	2017	2016
Discount rate	3.60%	4.11%	4.40%	1.28%	1.14%	1.12%	3.59%	4.09%	4.29%
Expected long-term rate of return on plan assets	5.00%	5.56%	5.83%	3.00%	3.00%	3.00%	— %	— %	— %
Rate of compensation increase	— %	— %	— %	1.75%	1.75%	1.90%	3.50%	3.50%	3.50%

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The Company's investment strategy with respect to its U.S. pension plan assets is to maximize the return on investment of plan assets at an acceptable level of risk and to assure the plans' fiscal health. The target asset allocation varies based on the funded status of the plan in an effort to match the duration of the plan's liabilities to investments in long duration fixed income assets over time. The Company's investments under the French pension plans are primarily invested as directed by governmental authorities, their contracted providers or the participants without direction from the Company. The primary goal of the Company's pension plans is to maintain the highest probability of assuring future benefit payments to participants while providing growth of capital in real terms. To achieve this goal, the investment philosophy is to protect plan assets from large investment losses, particularly over time, while steadily growing the assets in a prudent manner. While there cannot be complete assurance that the objectives will be realized, the Company believes that the likelihood of realizing the objectives are reasonable based upon this investment philosophy. The Company has an investment committee that meets on a periodic basis to review the portfolio returns and to determine asset mix targets. The U.S. and French pension plans' asset target allocations by asset category for 2019 and actual allocations by asset category at December 31, 2018 and 2017 were as follows:

Asset Category	United States			France	
	2019 Target	2018	2017	2018	2017
Cash and cash equivalents	1 %	1 %	1 %	43 %	38 %
Equity securities*					
Domestic large cap	6	5	7	28	31
Domestic small cap	3	3	4	—	—
International	14	14	20	—	—
Fixed income securities	76	77	68	27	28
Alternative investments**	—	—	—	2	3
Total	100 %	100 %	100 %	100 %	100 %

* None of the Company's pension plan assets are targeted for investment in SWM stock, except that it is possible that one or more mutual funds held by the plan could hold shares of SWM.

** Investments in this category under the U.S. pension plan only may include hedge funds, and may include real estate under the French pension plan.

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The Company's pension assets are classified according to an established fair value hierarchy that prioritizes the inputs to valuation techniques used to measure fair value. The hierarchy gives the highest priority to unadjusted quoted prices in active markets for identical assets or liabilities (Level 1 measurement) and the lowest priority to unobservable inputs (Level 3 measurements). A financial instrument's level within the hierarchy is based on the lowest level of any input that is significant to the fair value measurement. The three levels of the fair value hierarchy are described below:

Level 1 Unadjusted quoted prices in active markets that are accessible at the measurement date for identical, unrestricted assets or liabilities;

Level 2 Quoted prices in markets that are not considered to be active or financial instruments for which all significant inputs are observable, either directly or indirectly;

Level 3 Prices or valuations that require inputs that are both significant to the fair value measurement and unobservable.

The following table sets forth by level, within the fair value hierarchy, the U.S. and French pension plans' assets at fair value as of December 31, 2018 (\$ in millions):

Plan Asset Category	United States			France		
	Total	Other*	Level 1	Level 2	Level 3	Total
Cash equivalents	\$ 1.0	\$ —	\$ 1.0			