Cooper-Standard Holdings Inc.
Form 10-K
February 25, 2019

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 10-K

(Mark one)
x 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
Commission file number 001-36127

COOPER-STANDARD HOLDINGS INC.
(Exact name of registrant as specified in its charter)

Delaware	20-1945088
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)

39550 Orchard Hill Place Drive
Novi, Michigan 48375
(Address of principal executive offices) (Zip Code)
Registrant’s telephone number, including area code: (248) 596-5900
Securities registered pursuant to Section 12(b) of the Act:

Title of Each Class	Name of Exchange on Which Registered
Common Stock, par value $0.001 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 x 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 x
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 x 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 x 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 emerging growth company. See definitions of “large accelerated filer,” “accelerated filer,”

“smaller reporting company,” and “emerging growth company” in Rule 12b-2 of the Exchange Act.

Large accelerated filer	x	Accelerated filer	¨
Non-accelerated filer	¨	Smaller reporting company	¨
		Emerging growth company	¨

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

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

The aggregate market value of voting and non-voting common stock held by non-affiliates as of June 30, 2018 was $2,032,564,271.

The number of the registrant’s shares of common stock, $0.001 par value per share, outstanding as of February 8, 2019 was 17,436,119 shares.

Documents Incorporated by Reference

Certain portions, as expressly described in this report, of the Registrant’s Proxy Statement for the 2019 Annual Meeting of Stockholders are incorporated by reference into Part III of this Annual Report on Form 10-K.

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PART I

Item 1. Business

Cooper-Standard Holdings Inc. (together with its consolidated subsidiaries, the "Company," "Cooper Standard," "we," "our" or "us") is a leading manufacturer of sealing, fuel and brake delivery, fluid transfer and anti-vibration systems ("AVS"). During the fourth quarter of 2018, we entered into a definitive agreement to sell the anti-vibration systems product line. The sale is expected to close in the first half of 2019 and is subject to customary closing conditions. Our products are primarily for use in passenger vehicles and light trucks that are manufactured by global automotive original equipment manufacturers ("OEMs") and replacement markets. We conduct substantially all of our activities through our subsidiaries.

Cooper Standard is listed on the New York Stock Exchange ("NYSE") under the ticker symbol "CPS." The Company has approximately 32,000 employees, including over 4,500 contingent workers, with 159 facilities in 21 countries. We believe we are the largest global producer of sealing systems, the second largest global producer of the types of fuel and brake delivery products that we manufacture and the third largest global producer of fluid transfer systems. We design and manufacture our products in each major region of the world through a disciplined and sustained approach to engineering and operational excellence. We operate in 104 manufacturing locations and 55 design, engineering, administrative and logistics locations.

The Company has four operating segments: North America, Europe, Asia Pacific and South America. This operating structure allows us to offer our full portfolio of products and support our global and regional customers with complete engineering and manufacturing expertise in all major regions of the world. We have ongoing restructuring, expansion and cost reduction initiatives to improve competitiveness, primarily related to footprint optimization in Europe and expansion in Asia.

Approximately 85% of our sales in 2018 were to OEMs, including Ford Motor Company ("Ford"), General Motors Company ("GM"), Fiat Chrysler Automobiles ("FCA"), PSA Peugeot Citroën, Volkswagen Group, Daimler, Renault-Nissan, BMW, Toyota, Volvo, Jaguar/Land Rover, Honda and various other OEMs based in China and India. The remaining 15% of our 2018 sales were primarily to Tier I and Tier II automotive suppliers, non-automotive customers, and replacement market distributors. The Company's products can be found on over 480 nameplates globally.

Corporate History and Business Developments

Cooper-Standard Holdings Inc. was established in 2004 as a Delaware corporation and began operating on December 23, 2004 when it acquired the automotive segment of Cooper Tire & Rubber Company (the "2004 Acquisition"). Cooper-Standard Holdings Inc. operates the business primarily through its principal operating subsidiary, Cooper-Standard Automotive Inc. ("CSA U.S."). Since the 2004 Acquisition, the Company has expanded and diversified its customer base through a combination of organic growth and strategic acquisitions.

From 2006 to 2013, the Company accelerated its growth through a number of strategic acquisitions including the Fluid Handling Systems Operations in North America, Europe and China (collectively, "FHS") from ITT Industries, Inc.; Metzeler Automotive Profile Systems; a hose manufacturing operation in Mexico from the Gates Corporation; USi, Inc.; the sealing business of Sigit S.p.A.; a joint venture with Fonds de Modernisation des Equipementiers Automobiles ("FMEA"); and Jyco Sealing Technology.

In 2014 and 2015, the Company divested its thermal and emissions product line and hard coat plastic exterior trim business, respectively, to focus on the product lines where Cooper Standard holds leading market positions.

We continued strategic acquisitions and partnerships in 2014 and 2015 with the acquisition of Cikautxo Borja, S.L.U. in Spain, a manufacturer of heating and cooling hoses; the purchase of an additional 47.5% of Huayu-Cooper Standard Sealing Systems Co. ("Shenya"), increasing our equity ownership to 95% and positioning the Company as a leader in sealing systems in the Chinese automotive market; the formation of a joint venture with Polyrub Extrusions (India) Private Limited to grow the Company's fluid transfer systems business in Asia; and a joint venture with INOAC Corporation of Japan accelerating our fluid transfer systems strategy in Asia, which we later purchased the remaining 49% equity interest in 2018 and now own 100% of the equity interests of Cooper-Standard INOAC Pte. Ltd. In 2016, we acquired the North American fuel and brake business of AMI Industries to expand the Company's fuel and brake business. We also gained a controlling interest of our China-based joint venture, Shenya Sealing (Guangzhou) Company Limited. In 2017, the Company agreed to purchase the China fuel and brake business of AMI Industries, which was finalized in the first quarter of 2018.

In the third quarter of 2018, we acquired the assets and liabilities of Lauren Manufacturing and Lauren Plastics, extruders and molders of organic, silicone, thermoplastic and engineered polymer products with expertise in sealing solutions, to further expand our Industrial and Specialty Group and non-automotive and adjacent markets. In the fourth quarter of 2018, we acquired

80.1% of LS Mtron Ltd.'s automotive parts business. Through the acquisition of the injection molding system and automotive parts supplier, we further expanded our core product offerings and strategic footprint in the Asia Pacific segment. Also in the fourth quarter of 2018, we acquired Hutchings Automotive Products, LLC, a North American supplier of high quality fluid carrying products for automotive powertrain and coolant systems applications.

In the fourth quarter of 2018, we entered into a definitive agreement to divest the AVS product line within our North America, Europe and Asia Pacific segments. The planned divestiture is expected to close in the first half of 2019, subject to customary closing conditions, including regulatory and third-party approvals.

Business Strategy

In 2013, we set a clear vision for achieving profitable growth with a long-term mission to become a Top 30 automotive supplier in terms of sales and Top 5 in return on invested capital ("ROIC").

In 2016, our global leadership team refined this vision - Driving Value Through Culture, Innovation and Results - to more closely represent the evolution of the Company's innovation culture providing the basis for delivering even greater value. The global leadership team also reshaped the Company's strategic pillars to align with the progress of the Company. These pillars are:

Voice of the Customer:	We design and develop our products to meet the current and future needs of our customers. We listen intently and adjust to customer feedback to ensure we are consistently providing customer-focused products while meeting their evolving needs.
Superior Products:	With a focus on our core products, we provide customers with market-leading solutions with predicable quality that meet or exceed their expectations.
World-Class Operations:	We are committed to sustained excellence through the Cooper Standard Operating System ("CSOS"), our customized set of global best business practices that drives our global success. We will continue to optimize performance on a global scale to achieve our Top 30 / Top 5 mission.
Engaged Employees:	Our employees are the foundation of the Company and the key factor of our success. Committed to excellence and driven to succeed, our employees are focused on the Company's overall vision and strategy.

Cooper Standard's global alignment around these strategic pillars continues to drive further value in many areas of the business, including:

Operational and Strategic Initiatives

As part of Cooper Standard's world-class operations, the Company implemented CSOS to fully position the Company for growth and ensure global consistency in engineering design, program management, manufacturing process, purchasing and IT systems. Standardization across all regions is especially critical in support of customers' global platforms that require the same design, quality and delivery standards everywhere across the world.

CSOS consists of the following areas, with a strategic focus that aligns with the Company's growth strategy:

CSOS Function	Strategic Focus
World-Class Safety	Implement globally consistent measurement system with zero incidents goal.
World-Class Operations	Optimize global performance by implementing best business practices across the organization.
Continuous Improvement	Implement lean manufacturing tools across all facilities to achieve cost savings and increased performance.
Supply Chain	Develop strategic supply base to effectively leverage scale and optimize supplier quality.
Innovation	Focused innovation processes to create breakthrough technologies for market differentiation.
Global Program Management	Ensure consistent and flawless product launch process across all regions.
Product Engineering	Ensure global best practice tools are utilized to design optimized products and processes.
Information Technology	Implement common systems to effectively communicate information throughout the business.
Quality	Ensure product and service best-in-class quality through global best practice design and process standards.

As part of its world-class operations, Cooper Standard operates Global Councils focused on engineering, innovation, customer and manufacturing initiatives. These councils have allowed Cooper Standard to better leverage the scale of the Company, identify best practices and transfer them around the world, and develop the foundation for a global organization structure aimed at further optimizing the Company's scale and create global collaboration opportunities.

Leverage Technology and Materials Science for Innovative Solutions

We utilize our technical and materials science expertise to provide customers with innovative solutions. Our engineers combine product design with a broad understanding of materials science for enhanced vehicle performance. We believe our reputation for successful innovation in product design and materials is the reason our customers consult us early in their vehicle development and design process of their next generation vehicles.

Cooper Standard has evolved and further energized its approach to innovation with its i^3 Innovation Process (Imagine, Initiate, Innovate). This approach is used as a mechanism to capture ideas from across our Company and supply partners while promoting a culture of innovation. Ideas are carefully evaluated by a global technology council, and those that are selected are put on an accelerated development cycle with a dedicated innovation team focused on breakthrough ideas. This team is developing innovative technologies based on materials expertise, process know-how, and application vision, which may drive future product direction. These breakthrough innovations have resulted in over $750 million in sales awards in the last three years. With a continuous stream of new ideas flowing through our pipeline, we believe that we have the ability to bring breakthrough innovations to market which we believe will provide a clear and sustainable advantage and drive value for our stakeholders.

Among recently introduced technologies is Cooper Standard's artificial intelligence-enhanced development cycle for polymer compounds that has shortened material development times while realizing rapid discovery of new compounds that offer superior performance properties, which yield superior products. In addition, Fortrex™, the Company's revolutionary material platform, offers reduced weight while delivering superior material performance and aesthetics. Several other significant technologies, especially related to advanced materials, processing and weight reduction, have recently been realized. These include: MagAlloy™, a new processing technology for brake lines that increases long term durability through superior corrosion resistance; and ArmorHose™, a breakthrough technology which results in significantly more durable coolant hoses and eliminates the need for separate abrasion sleeves on under-hood hose assemblies.

Our innovations are receiving industry recognition. Cooper Standard's artificial intelligence-enhanced development cycle for polymer compound development was named a finalist for the 2019 Automotive News PACE Awards, with final judging expected to conclude in April of 2019. In addition, Fortrex™ was named a 2018 PACE Award winner and a 2018 Society of Plastics Engineers Innovation Award finalist.

Pursue Acquisitions and Alliances to Enhance Capabilities and Accelerate Growth

Our strong financial position allows us to continue to selectively pursue complementary acquisitions and joint ventures to enhance our customer base, geographic penetration, scale and technology. Consolidation is an industry trend which has been encouraged by the OEMs' desire for global automotive suppliers. We believe we have a strong platform for growth through acquisitions based on our past integration successes, experienced management team, global presence and operational excellence. Further, our operations currently include several successful joint ventures.

Industry

The automotive industry is one of the world's largest and most competitive. Consumer demand for new vehicles largely determines sales and production volumes of global OEMs. The business and commercial environment in each region also plays a role in vehicle demand as it relates to fleet vehicle sales and industrial use vehicles such as light and heavy trucks.

OEMs compete for market share in a variety of ways including pricing and incentives, the development of new, more attractive models, branding and advertising, and the ability to customize vehicle features and options to meet specific customer needs or demands. They rely heavily on thousands of specialized suppliers to provide the many distinct components and systems that comprise the modern vehicle. They also rely on these automotive suppliers to develop technological innovations that will help them meet consumer demands as well as regulatory requirements.

The automotive supplier industry is a highly competitive industry generally characterized by high barriers to entry, significant start-up costs and long-standing customer relationships. The criteria by which OEMs judge automotive suppliers include quality, price, service, performance, design and engineering capabilities, innovation, timely delivery, financial stability and global footprint. Over the last decade, suppliers that have been able to achieve manufacturing scale globally, reduce structural costs, diversify their customer base and provide innovative, value-added technologies have been the most successful.

The technology of today's vehicles is evolving rapidly. The evolution is being driven by many factors including consumer preferences and social behaviors, a competitive drive for differentiation, regulatory requirements and safety. Cooper Standard supports these trends by providing innovations that reduce weight, increase life-cycle and durability, reduce interior noise, enhance exterior appearance and simplify the manufacturing and assembly process. These are innovations that can be applicable and valuable to virtually any vehicle or vehicle manufacturer and, in many cases, can also be transferred to non-automotive applications in adjacent markets.

Markets Served

Our automotive business is focused on the passenger car and light truck market, up to and including Class 3 full-size, full-frame trucks, better known as the global light vehicle market. This is our largest market and accounts for approximately 94% of our global sales.

Adjacent and Non-Automotive Markets

In addition to the global light vehicle market, we also have teams dedicated to leveraging core product technology into near adjacent markets to profitably grow Cooper Standard through our Advanced Technology Group ("ATG") which includes our Industrial and Specialty Group ("ISG") and Applied Materials Science ("AMS") Group.

ISG focuses on industry segments such as commercial trucks, agricultural equipment and construction. With an addressable market of over $3.2 billion, this represents an opportunity to further diversify our revenue and profit base. Some of our traditional products as well as our innovative technologies, are well-suited to these markets. We believe these market segments represent near-term opportunities for high margin growth.

Further, our AMS team has implemented a strategy to leverage some of our materials science in non-automotive markets through licensing agreements or the sale of material compounds. The initial focus of this business model is our Fortrex™ material technology. Fortrex™ is highly adaptable, and we believe it has the potential to add significant value in many product categories and industries beyond the automotive industry. To date, the Company has licensing agreements of its proprietary Fortrex™ material platform with INOAC and PolyOne Corp.

Customers

We are a leading supplier to the following OEMs and are increasing our presence with major OEMs throughout the world. The following charts show the percentage of sales to our top customers for the years ended December 31, 2018, 2017 and 2016:

Our other customers include OEMs such as Renault-Nissan, BMW, Toyota, Volvo, Jaguar/Land Rover, Honda and various other OEMs based in China and India. Our business with any given customer is typically split among several contracts for different parts on a number of platforms.

Products

We currently have four distinct product lines. These products are produced and supplied globally to a broad range of customers in multiple markets. In 2018, we approved a plan and entered into a definitive agreement to sell the AVS product line within our North America, Europe and Asia Pacific segments. See Note 5. “Assets Held for Sale” to the consolidated financial statements included under Item 8. “Financial Statements and Supplementary Data” of this Annual Report on Form 10-K (the “Report”).

In addition to these product lines, we also have sales to other adjacent markets. The percentage of sales by product line and other markets for the years ended December 31, 2018, 2017 and 2016 are as follows:

Product Lines			Market Position*
SEALING SYSTEMS	Protect vehicle interiors from weather, dust and noise intrusion for improved driving experience; provide aesthetic and functional class-A exterior surface treatment		Global leader
	Products:	Obstacle detection sensor system	
	– Fortrex™	– Flush glass systems	
	– Dynamic seals	– Variable extrusion	
	– Static seals	– Specialty sealing products	
	– Encapsulated glass	– Obstacle detection sensor system	
	– Stainless steel trim	– Tex-A-Fib (Textured Surface with Cloth Appearance)	
FUEL & BRAKE DELIVERY SYSTEMS	Sense, deliver and control fluids to fuel and brake systems		Top 2 globally
	Products:		
	– Chassis and tank fuel lines and bundles (fuel lines, vapor lines and bundles)	– Direct injection & port fuel rails (fuel rails and fuel charging assemblies)	
	– Metallic brake lines and bundles	– MagAlloy™ tube coatings	
	– Quick connects	– Gen III Posi-Lock quick connects	
	– Brake jounce lines		
FLUID TRANSFER SYSTEMS	Sense, deliver and control fluid and vapors for optimal powertrain & HVAC operation		Top 3 globally
	Products:		
	– Heater/coolant hoses	– Turbo charger hoses	
	– Quick connects	– Charged air cooler ducts/assemblies	
	– DPF and SCR emission lines	– Secondary air hoses	
	– Degas tanks	– Brake and clutch hoses	
	– Air intake and charge	– ArmorHose™ family of products	
	– Transmission Oil Cooling Hoses	– Easy-Lock quick connect	
ANTI-VIBRATION SYSTEMS**	Control and isolate vibration and noise in the vehicle to improve ride and handling		North America Leader
	Products:		
	– Powertrain Mount Systems: Multi-state Vacuum Switchable Hydraulic Engine Mounts, Bi-state Electric Switchable Hydraulic Engine Mounts, Conventional Hydraulic Mounts, Elastomeric Mount		
	– Chassis Suspension Components: Conventional & Hydraulic Body Mounts & Bushings, Strut Mounts, Spring Seats & Bumpers, Mass Dampers, Dual Durometer (Bi-compound) Bushings		

* Market position data Boston Consulting Group (2018) and company estimates

** Sale pending - Divestiture of product line expected to close in the first half of 2019, subject to customary closing conditions, including regulatory and third-party approvals.

Competition

We believe that the principal competitive factors in our industry are quality, price, service, performance, design and engineering capabilities, innovation, timely delivery, financial stability and global footprint. We believe that our capabilities in these core competencies are integral to our position as a market leader in each of our product lines. Our sealing systems products compete with Toyoda Gosei, Hutchinson, Henniges and Standard Profil, among others. Our fuel and brake delivery products compete with TI Automotive, Sanoh, Martinrea and Maruyasu. Our fluid transfer products compete with Conti-Tech, Hutchinson, Teklas, Tristone and MGI Coutier (including Avon Automotive).

Joint Ventures and Strategic Alliances

Joint ventures represent an important part of our business, both operationally and strategically. We have utilized joint ventures to enter into and expand in geographic markets such as China, India and Thailand, to acquire new customers and to develop new technologies. When entering new geographic markets, teaming with a local partner can reduce capital investment by leveraging pre-existing infrastructure. In addition, local partners in these markets can provide knowledge and insight into local practices and access to local suppliers of raw materials and components.

The following table shows our significant unconsolidated joint ventures:

Country	Name	Ownership Percentage
India	Sujan Cooper Standard AVS Private Limited	50%
United States	Nishikawa Cooper LLC	40%
India	Polyrub Cooper Standard FTS Private Limited	35%
Thailand	Nishikawa Tachaplalert Cooper Ltd.	20%

Research and Development

We have a dedicated team of technical and engineering resources in each region, some of which are located at our customers' facilities. We utilize Design for Six Sigma and other methodologies that emphasize manufacturability and quality. Our development teams work closely with our customers to design and deliver innovative solutions. Amounts spent on engineering, research and development were as follows:

Year	Amount	Percentage of Sales	
(Dollar amounts in thousands)			
2016	$117,791	3.4	%
2017	$127,974	3.5	%
2018	$122,529	3.4	%

Intellectual Property

We believe that one of our key competitive advantages is our ability to translate customer needs and our game-changing ideas into innovation through the development of intellectual property. We hold a significant number of patents and trademarks worldwide.

Our patents are grouped into two major categories: (1) specific product invention claims and (2) specific manufacturing processes that are used for producing products. The vast majority of our patents fall within the product invention category. We consider these patents to be of value and seek to protect our rights throughout the world against infringement. While in the aggregate these patents are important to our business, we do not believe that the loss or expiration of any one patent would materially affect our Company. We continue to seek patent protection for our new products and have an incentive program to recognize employees whose inventions are patented. Additionally, we develop significant technologies that we treat as trade secrets and choose not to disclose to the public through the patent process. These technologies nonetheless provide significant competitive advantages and contribute to our global leadership position in various markets. We believe that our trademarks, including ArmorHose™, MagAlloy™ and Fortrex™, help differentiate us and lead customers to seek our partnership.

We also have technology sharing and licensing agreements with various third parties, including Nishikawa Rubber Company, one of our joint venture partners in sealing products. We have mutual agreements with Nishikawa Rubber Company for sales, marketing and engineering services on certain sealing products. Under those agreements, each party pays for services provided by the other and royalties on certain products for which the other party provides design or development services.

As of December 2018, the Company has signed licensing agreements to supply Fortrex™ material technology to two entities in non-automotive industries. We expect to develop significant additional opportunities for licensing of Fortrex™ and other materials-related innovations beyond our core automotive product lines.

Supplies and Raw Materials

Cooper Standard is committed to building strong relationships with our supply partners. We recognize the importance of engaging with suppliers to create value for our customers.

The principal raw materials for our business include synthetic and natural rubber, components manufactured from carbon steel, plastic resins and components, carbon black, process oils, and components manufactured from aluminum. We manage the procurement of our raw materials to assure supply and to obtain the most favorable total cost. Procurement arrangements include short-term and long-term supply agreements that may contain formula-based pricing, based on commodity indices. These arrangements provide quantities needed to satisfy normal manufacturing demands. We believe we have adequate sources for the supply of raw materials and components for our products with suppliers located around the world. We often use offshore suppliers for machined components, die castings and other labor-intensive, economically freighted products in our North American and European facilities.

Raw material prices are susceptible to fluctuations which may place operational and profitability burdens on the entire supply chain. As such, we have implemented strategies with both our suppliers and our customers to help manage these fluctuations. These actions include material substitutions and leveraging global purchases. Our global supply chain optimization efforts include using benchmarks and selective sourcing from strategic suppliers. We have also made process improvements to ensure the efficient use of materials through scrap reduction, as well as standardization of material specifications to maximize leverage over higher volume purchases. With some customers, on certain raw materials, we have implemented indices that allow price changes as underlying material costs fluctuate. The current domestic and international political environment, including existing and potential changes to U.S. and China policies related to global trade and tariffs, have resulted in uncertainty surrounding the future state of the global economy. While we continue to monitor the potential impacts of previously-announced tariffs, we anticipate these and other tariffs will negatively impact material costs.

Seasonality

Our principal operations are directly related to the automotive industry. Sales to OEMs are lowest during the months prior to model changeovers or during assembly plant shutdowns. Automotive production is traditionally reduced during July, August and year-end holidays, and our quarterly results may reflect these trends. However, economic conditions and consumer demand may change the traditional seasonality of the industry.

Backlog

Our OEM sales are generally based upon purchase orders issued by the OEMs, with updated releases for volume adjustments. As such, we typically do not have a backlog of orders at any point in time. Once selected to supply products for a particular platform, we typically supply those products for the platform life, which is normally three to five years, although there is no guarantee that this will occur. In addition, when we are the incumbent supplier to a given platform, we believe we have a competitive advantage in winning the redesign or replacement platform, although there is no guarantee that this will occur.

Employees

As of December 31, 2018, we had approximately 32,000 employees, including over 4,500 contingent workers. We maintain good relations with both our union and non-union employees and, in the past ten years, have not experienced any major work stoppages. We renegotiated some of our domestic and non-domestic union agreements in 2018, and have several contracts set to expire in the next twelve months.

Community Involvement

Supported by the Cooper Standard Foundation, our employees are highly engaged in their local communities. The Foundation’s mission is to strengthen the communities where Cooper Standard employees work and live through the passionate support of children’s charities, education, health and wellness, and community revitalization. The Cooper Standard Foundation is a 501(c)(3) organization with oversight by our Philanthropic Committee and Board of Trustees. For more information on the Company’s community involvement, please visit our Corporate Responsibility Report located on the Cooper Standard website.

Environmental

Cooper Standard considers itself a steward of the environment, and we monitor the environmental impact of our business and products. We prioritize our environmental management as a means of driving and sustaining excellence.

We are subject to a broad range of federal, state, and local environmental and occupational safety and health laws and regulations in the United States and other countries, including regulations governing: emissions to air, discharges to water, noise and odor emissions; the generation, handling, storage, transportation, treatment, reclamation and disposal of chemicals and waste materials; the cleanup of contaminated properties; and human health and safety. We have made, and will continue to make, expenditures to comply with environmental requirements. While our costs to defend and settle known claims arising under environmental laws have not been material in the past and are not currently estimated to be material, such costs may be material in the future. Further details regarding our commitments and contingencies are provided in Note 23. “Contingent Liabilities” to the consolidated financial statements.

Market Data

Some market data and other statistical information used throughout this Annual Report on Form 10-K is based on data from independent firms such as IHS Automotive and Boston Consulting Group. Other data is based on good faith estimates, which are derived from our review of internal analyses, as well as third party sources. Although we believe these third party sources are reliable, we have not independently verified the information and cannot guarantee its accuracy and completeness. To the extent that we have been unable to obtain information from third party sources, we have expressed our belief on the basis of our own internal analyses of our products and capabilities in comparison to our competitors.

Available Information

We make available free of charge on our website (www.cooperstandard.com) our Annual Report on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K and amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended, (the “Exchange Act”), as soon as reasonably practicable after we electronically file such material with, or furnish it to, the U.S. Securities and Exchange Commission (“SEC”). Our reports filed with the SEC also may be found on the SEC’s website at www.sec.gov. Neither the information on our website nor the information on the SEC’s website is incorporated by reference into this Report unless expressly noted.

Forward-Looking Statements

This Annual Report on Form 10-K includes “forward-looking statements” within the meaning of U.S. federal securities laws, and we intend that such forward-looking statements be subject to the safe harbor created thereby. Our use of words “estimate,” “expect,” “anticipate,” “project,” “plan,” “intend,” “believe,” “outlook,” “guidance,” “forecast,” or future or verbs, such as “will,” “should,” “could,” “would,” or “may,” and variations of such words or similar expressions are intended t identify forward-looking statements. All forward-looking statements are based upon our current expectations and various assumptions. Our expectations, beliefs, and projections are expressed in good faith and we believe there is a reasonable basis for them. However, we cannot assure you that these expectations, beliefs and projections will be achieved. Forward-looking statements are not guarantees of future performance and are subject to significant risks and uncertainties that may cause actual results or achievements to be materially different from the future results or achievements expressed or implied by the forward-looking statements. Among other items, such factors may include: prolonged or material contractions in automotive sales and production volumes; our inability to realize sales represented by awarded business; escalating pricing pressures; loss of large customers or significant platforms; our ability to successfully compete in the automotive parts industry; availability and increasing volatility in costs of manufactured components and raw materials; disruption in our supply base; competitive threats and commercial risks associated with us entering new markets; possible variability of our working capital requirements; risks associated with our international operations, including changes in laws, regulations, and policies governing the terms of foreign trade such as increased trade restrictions and tariffs; foreign currency exchange rate fluctuations; our ability to control the operations of our joint ventures for our sole benefit; our substantial amount of indebtedness; our ability to obtain adequate financing sources in the future; operating and financial restrictions imposed on us under our debt instruments; the underfunding of our pension plans; significant changes in discount rates and the actual return on pension assets; effectiveness of continuous improvement programs and other cost savings plans; manufacturing facility closings or consolidation; our ability to execute new program launches; our ability to meet customers’ needs for new and improved products; the possibility that our acquisitions and divestitures may not be successful; product liability, warranty and recall claims brought against us; laws and regulations, including environmental, health and safety laws and regulations; legal proceedings, claims or investigations against us; work stoppages or other labor disruptions; the ability of our intellectual property to withstand legal challenges; cyber-attacks, other disruptions in, or the inability to implement upgrades to, our information technology systems; the possible volatility of our annual effective tax rate; changes in our assumptions as a result of IRS issuing guidance on the Tax Cuts and Jobs Act; the possibility of future impairment charges to our goodwill and long-lived assets; and our dependence on our subsidiaries for cash to satisfy our obligations.

You should not place undue reliance on these forward-looking statements. Our forward-looking statements speak only as of the date of this Annual Report on Form 10-K and we undertake no obligation to publicly update or otherwise revise any forward-looking statement, whether as a result of new information, future events or otherwise, except where we are expressly required to do so by law.

This Annual Report on Form 10-K also contains estimates and other information that is based on industry publications, surveys and forecasts. This information involves a number of assumptions and limitations, and we have not independently verified the accuracy or completeness of the information.

Item 1A. Risk Factors

We have listed below (not necessarily in order of importance or probability of occurrence) the most significant risk factors that could cause our actual results to vary materially from recent or anticipated results and could materially and adversely affect our business, results of operations, financial condition and cash flows.

We are highly dependent on the automotive industry. A prolonged or material contraction in automotive sales and production volumes could adversely affect our business, results of operations and financial condition.

Automotive sales and production are cyclical and depend on, among other things, general economic conditions and consumer spending, vehicle demand and preferences (which can be affected by a number of factors, including fuel costs, employment levels and the availability of consumer financing). As the volume of automotive production and the mix of vehicles produced fluctuate, the demand for our products also fluctuates. Prolonged or material contraction in automotive sales and production volumes, or significant changes in the mix of vehicles produced, could cause our customers to reduce orders of our products, which could adversely affect our business, results of operations and financial condition.

We may not realize sales represented by awarded business, which could adversely affect our business, financial condition, results of operations and cash flows.

The realization of future sales from awarded business is subject to risks and uncertainties inherent in the cyclicality of vehicle production. In addition, our customers generally have the right to resource awarded business without penalty. Therefore, the ultimate amount of our sales is not guaranteed. If actual production orders from our customers are not consistent with the projections we use in calculating the amount of awarded business, we could realize substantially less sales and profit over the life of these awards than currently projected.

Escalating pricing pressures may adversely affect our business.

Pricing pressure in the automotive supply industry has been substantial and is likely to continue. Nearly all vehicle manufacturers seek price reductions in both the initial bidding process and during the term of the contract. Price reductions have adversely impacted our sales and profit margins and are expected to do so in the future. If we are not able to offset continued price reductions through improved operating efficiencies and reduced expenditures, those price reductions may have a negative impact on our financial condition.

Our business could be adversely affected if we lose any of our largest customers or significant platforms.

While we provide parts to virtually every major global OEM for use on a wide range of different platforms, sales to our three largest customers, Ford, GM and FCA, on a worldwide basis represented approximately 57% of our sales for the year ended December 31, 2018. Our ability to reduce the risks inherent in certain concentrations of business will depend, in part, on our ability to continue to diversify our sales on a customer, product, platform and geographic basis. Although business with each customer is typically split among numerous contracts, the loss of a major customer, significant reduction in purchases of our products by such customer, or any discontinuance or resourcing of a significant platform could adversely affect our business, results of operations and financial condition.

We operate in a highly competitive industry and efforts by our competitors to gain market share could adversely affect our financial performance.

The automotive parts industry is highly competitive. We face numerous competitors in each of our product lines. In general, there are three or more significant competitors and numerous smaller competitors for most of the products we offer. We also face competition for certain of our products from suppliers producing in lower-cost regions such as Asia and Eastern Europe. Our competitors' efforts to grow market share could exert downward pressure on the pricing of our products and our margins.

Increases in the costs, or reduced availability, of raw materials and manufactured components may adversely affect our profitability.

Raw material costs can be volatile. The principal raw materials we purchase include synthetic rubber, components manufactured from carbon steel, plastic resins and components, carbon black, process oils, components manufactured from aluminum and natural rubber. Raw materials are the largest component of our costs, representing approximately 51% of our total cost of products sold in 2018. The costs and availability of raw materials and manufactured components can fluctuate due to factors beyond our control, including as a result of existing and potential changes to U.S. policies related to global trade and tariffs. A significant increase in the price of raw materials, or a restriction in their availability, could materially increase our operating costs and adversely affect our profitability because it is generally difficult to pass through these increased costs to our customers.

Disruptions in the supply chain could have an adverse effect on our business, financial condition, results of operations and cash flows.

We obtain components and other products and services from numerous suppliers and other vendors throughout the world. We are responsible for managing our supply chain, including suppliers that may be the sole sources of products that we require, that our customers direct us to use or that have unique capabilities that would make it difficult and/or expensive to re-source. In certain instances, entire industries may experience short-term capacity constraints. Any significant disruption in supply could adversely affect our financial performance. Furthermore, unfavorable economic or industry conditions could result in financial distress within our supply base, thereby increasing the risk of supply disruption. Although market conditions generally have improved in recent years, uncertainty remains, and an economic downturn or other unfavorable industry conditions in one or more of the regions in which we operate could cause a supply disruption and thereby adversely affect our financial condition, operating results and cash flows.

If a customer experiences a material supply shortage, either directly or as a result of a supply shortage at another supplier, that customer may halt or limit the purchase of our products, which could adversely affect our business, results of operations and financial condition.

Entering new markets poses new competitive threats and commercial risks.

We have commenced an implementation of our strategy to leverage our core products in adjacent markets and license our innovation technology in non-automotive markets. We may be unsuccessful in leveraging our existing products and technology into new markets and thus in meeting the needs of these new customers and competing favorably in these new markets.

Our working capital requirements may negatively affect our liquidity and capital resources.

Our working capital requirements can vary significantly, depending in part on the level, variability and timing of our customers' worldwide vehicle production and the payment terms with our customers and suppliers. If our working capital needs exceed our cash provided by operating activities, we would look to our cash balances and availability under our borrowing arrangements to satisfy those needs, as well as potential sources of additional capital, which may not be available on satisfactory terms and in adequate amounts, if at all.

We are subject to other risks associated with our international operations.

We have significant manufacturing operations outside the United States, including joint ventures and other alliances. Our operations are located in 21 countries, and we export to several other countries. In 2018, approximately 76% of our sales were attributable to products manufactured outside the United States. Risks inherent in our international operations include:

- currency exchange rate fluctuations, currency controls and restrictions, and the ability to hedge currencies;
- changes in local economic conditions;
- repatriation restrictions or requirements, including tax increases on remittances and other payments by our foreign subsidiaries;
- global sovereign fiscal uncertainty and hyperinflation in certain foreign countries;
- changes in laws and regulations, including laws or policies governing the terms of foreign trade, and in particular increased trade restrictions, tariffs, or taxes or the imposition of embargoes on imports from countries where we manufacture products;

- political, economic and regulatory uncertainty as a result of the United Kingdom’s pending withdrawal from the European Union (“Brexit”), including with respect to potential import/export restrictions that would affect products we ship to U.K. customers primarily from continental Europe;
- exposure to possible expropriation or other government actions; and
- exposure to local political or social unrest including resultant acts of war, terrorism, or similar events.

Expanding our sales and manufacturing operations in the Asia Pacific region, particularly in China, is an integral part of our strategy, and, as a result, our exposure to the risks described above is substantial. The occurrence of any of these risks may adversely affect the results of operations and financial condition of our international operations and our business as a whole.

Foreign currency exchange rate fluctuations could materially impact our operating results.
Our sales and manufacturing operations outside the United States expose us to currency risks. For our consolidated financial statements, our sales and earnings denominated in foreign currencies are translated into U.S. dollars. This translation is calculated based on average exchange rates during the reporting period. Accordingly, our reported international sales and earnings could be adversely impacted in periods of a strengthening U.S. dollar.
Although we generally produce in the same geographic region as our products are sold, we also produce in countries that predominately sell in another currency. Further, some of our commodities are purchased in or tied to the U.S. dollar; therefore our earnings could be adversely impacted during the periods of a strengthening U.S. dollar relative to other foreign currencies. While we employ financial instruments to hedge certain portions of our foreign currency exposures, our efforts to manage these risks may not be successful and may not completely insulate us from the effects of currency fluctuation.
A portion of our operations are conducted by joint ventures which have unique risks.
Certain of our operations are carried out by joint ventures. In joint ventures, we share the management of the company with one or more partners who may not have the same goals, resources or priorities as we do. The operations of our joint ventures are subject to agreements with our partners, which typically include additional organizational formalities as well as requirements to share information and decision making and may also limit our ability to sell our interest. Additional risks include one or more partners failing to satisfy contractual obligations, a change in ownership of any of our partners and our limited ability to control our partners' compliance with applicable laws, including the Foreign Corrupt Practices Act. Any such occurrences could adversely affect our financial condition, operating results, cash flow or reputation.
We have a substantial amount of indebtedness, which could have a material adverse effect on our financial condition and our ability to obtain financing in the future and to react to changes in our business.
For discussion of our debt and financing arrangements, including our senior term loan facility ("Term Loan Facility"), 5.625% Senior Notes due 2026 ("Senior Notes"), our senior asset-based revolving credit facility ("ABL Facility") and debt of certain foreign subsidiaries, see "Liquidity and Capital Resources - Financing Arrangements" in Item 7. "Management's Discussion and Analysis of Financial Condition and Results of Operations" and Note 10. "Debt" to the consolidated financial statements included under Item 8. "Financial Statements and Supplementary Data" of this Report.
Our substantial amount of debt and our debt service obligations could limit our ability to satisfy our obligations, limit our ability to operate our business and impair our competitive position. For example, it could:

- increase our vulnerability to adverse economic and general industry conditions, including interest rate fluctuations, because a portion of our borrowings are at variable rates of interest;
- require us to dedicate a substantial portion of our cash flows from operations to payments on our debt, which would reduce the availability of cash to fund working capital, capital expenditures or other general corporate purposes;
- limit our flexibility in planning for, or reacting to, changes in our business and industry;
- place us at a disadvantage compared to competitors that may have proportionately less debt;
- limit our ability to obtain additional debt or equity financing due to applicable financial and restrictive covenants in our debt agreements; and
- increase our cost of borrowing.

Our ability to make scheduled payments on our debt or to refinance these obligations depends on our financial condition, operating performance and our ability to generate cash in the future. If our cash flows and capital resources are insufficient to fund our debt service obligations, we may be forced to reduce or delay investments and capital expenditures, sell material assets, seek additional capital or restructure or refinance our indebtedness, any of which could have a material adverse effect on our business, results of operations and financial condition. In addition, we may not be able to effect any of these actions, if necessary, on commercially reasonable terms or at all. Our ability to restructure or refinance our indebtedness will depend on the condition of the capital markets and our financial condition at such time. Any refinancing of our debt could be at higher interest rates and may require us to comply with more onerous covenants, which could further restrict our business operations. The terms of existing or future debt instruments, including the credit agreements governing the Term Loan Facility and the ABL Facility and the indenture governing the Senior Notes, may limit or prevent us from taking any of these actions. In addition, any failure to make scheduled payments of interest and principal on our outstanding indebtedness would likely result in a reduction of our credit rating, which could harm our ability to incur additional indebtedness on commercially reasonable terms or at all. Our inability to generate sufficient cash flow to satisfy our debt service obligations, or to refinance or restructure our obligations on commercially reasonable terms or at all, would have an adverse effect, which could be material, on our business, financial condition and results of operations, as well as on our ability to satisfy our obligations in respect of the Term Loan Facility, the Senior Notes or the ABL Facility.

Although the credit agreements governing the Term Loan Facility and the ABL Facility contain certain limitations on our ability to incur additional indebtedness, they do not prohibit us from incurring obligations that do not constitute indebtedness as defined therein. To the extent that we incur additional indebtedness or such other obligations, the risk associated with our substantial indebtedness described above, including our potential inability to service our debt, will increase.

Our debt instruments impose significant operating and financial restrictions on us and our subsidiaries.

The credit agreements governing the Term Loan Facility and the ABL Facility impose significant operating and financial restrictions and limit our ability, among other things, to:

- incur, assume or permit to exist additional indebtedness (including guarantees thereof);
- pay dividends or certain other distributions on our capital stock or repurchase our capital stock or prepay subordinated indebtedness;
- incur liens on assets;
- make certain investments or other restricted payments;
- allow to exist certain restrictions on the ability of our restricted subsidiaries to pay dividends or make other payments to us;
- engage in transactions with affiliates;
- alter the business that we conduct; and
- sell certain assets or merge or consolidate with or into other companies.

Moreover, our ABL Facility provides the agent considerable discretion to impose reserves, which could materially reduce the amount of borrowings that would otherwise be available to us.

The indenture governing the Senior Notes also imposes restrictions and limits our ability, among other things, to:

- incur liens on assets;
- make certain restricted payments;
- sell certain assets or merge or consolidate with or into other companies; and
- enter into certain sale-leaseback transactions.

As a result of these covenants and restrictions (including borrowing base availability), we are limited in how we conduct our business, and we may be unable to raise additional debt or equity financing to compete effectively or to take advantage of new business opportunities or acquisitions. The terms of any future indebtedness we may incur could include more restrictive covenants. We may not be able to maintain compliance with these covenants in the future and, if we fail to do so, that we will be able to obtain waivers from the lenders and/or amend the covenants in such agreements. Our failure to comply with the restrictive covenants described above as well as others contained in our future debt instruments from time to time could result in an event of default, which, if not cured or waived, could result in our being required to repay these borrowings before their due date. If we are forced to refinance these borrowings on less favorable terms, our financial condition, results of operations and cash flows could be adversely affected.

If there were an event of default under any of the agreements relating to our outstanding indebtedness, the holders of the defaulted debt could cause all amounts outstanding with respect to that debt to be due and payable immediately. Our assets or cash flow may not be sufficient to fully repay borrowings under our outstanding debt instruments if accelerated upon an event of default. Further, if we are unable to repay, refinance or restructure our indebtedness under our secured debt, the holders of such debt could proceed against the collateral securing that indebtedness. In addition, any event of default or declaration of acceleration under one debt instrument could also result in an event of default under one or more of our other debt instruments. As a result, any default by us on our indebtedness could have a material adverse effect on our business, financial condition and results of operation.

Our pension plans are currently underfunded, and we may have to make cash contributions to the plans, reducing the cash available for our business.

We sponsor various pension plans worldwide that are underfunded and will require cash contributions. Additionally, if the performance of the assets in our pension plans does not meet our expectations, or if other actuarial assumptions are modified, our required contributions may be higher than we expect. As of December 31, 2018, our pension plans were underfunded by $159.4 million. If our cash flow from operations is insufficient to fund our worldwide pension liabilities, it could have an adverse effect on our financial condition and results of operations.

Significant changes in discount rates, the actual return on pension assets and other factors could adversely affect our liquidity, results of operations and financial condition.

Our earnings may be positively or negatively impacted by the amount of income or expense recorded related to our pension plans. Generally accepted accounting principles in the United States ("U.S. GAAP") require that income or expense related to the pension plans be calculated at the annual measurement date using actuarial calculations, which reflect certain assumptions. Because these assumptions have fluctuated and will continue to fluctuate in response to changing market conditions, the amount of gains or losses that will be recognized in subsequent periods, the impact on the funded status of the pension plans and the future minimum required contributions, if any, could adversely affect our liquidity, results of operations and financial condition.

The benefits of our continuous improvement program and other cost savings plans may not be fully realized.

Our operations strategy includes continuous improvement programs and implementation of lean manufacturing tools across all facilities to achieve cost savings and increased performance. Further, we have and may continue to initiate restructuring actions designed to improve future profitability and competitiveness. The cost savings that we anticipate from these initiatives may not be achieved on schedule or at the level we anticipate. If we are unable to realize these anticipated savings, our operating results and financial condition may be adversely affected.

We may incur significant costs related to manufacturing facility closings or consolidation which could have an adverse effect on our financial condition.

If we must close or consolidate manufacturing locations, the exit costs associated with such closures or consolidation, including employee termination costs, may be significant. Such costs could negatively affect our cash flows, results of operations and financial condition.

Our inability to effectively manage the timing, quality and costs of new program launches could adversely affect our financial performance.

In connection with the award of new business, we may obligate ourselves to deliver new products that are subject to our customers' timing, performance and quality standards. Given the number and complexity of new program launches, we may experience difficulties managing product quality, timeliness and associated costs. In addition, new program launches require a significant ramp up of costs. However, our sales related to these new programs generally are dependent upon the timing and success of our customers' introduction of new vehicles. Our inability to effectively manage the timing, quality and costs of these new program launches could adversely affect our financial condition, operating results and cash flows.

Our success depends in part on our development of improved products, and our efforts may fail to meet the needs of customers on a timely or cost-effective basis.

Our continued success depends on our ability to maintain advanced technological capabilities and knowledge necessary to adapt to changing market demands, as well as to develop and commercialize innovative products. We may be unable to develop new products successfully or to keep pace with technological developments by our competitors and the industry in general. In addition, we may develop specific technologies and capabilities in anticipation of customers' demands for new innovations and technologies. If such demand does not materialize, we may be unable to recover the costs incurred in the development of such technologies and capabilities. If we are unable to recover these costs or if any such programs do not progress as expected, our business, results of operations and financial condition could be adversely affected.

Any acquisitions or divestitures we make may be unsuccessful, may take longer than anticipated or may negatively impact our business, financial condition, results of operations and cash flows.

We may pursue acquisitions or divestitures in the future as part of our strategy. Acquisitions and divestitures involve numerous risks, including identifying attractive target acquisitions, undisclosed risks affecting the target, difficulties integrating acquired businesses, the assumption of unknown liabilities, potential adverse effects on existing customer or supplier relationships, and the diversion of management's attention from day-to-day business. We may not have, or be able to raise on acceptable terms, sufficient financial resources to make acquisitions. Our ability to make investments may also be limited by the terms of our existing or future financing arrangements. Any acquisitions or divestitures we pursue may not be successful or prove to be beneficial to our operations and cash flow.

We may incur material losses and costs as a result of product liability and warranty and recall claims that may be brought against us.

We may be exposed to product liability and warranty claims in the event that our products actually or allegedly fail to perform as expected or the use of our products results, or is alleged to result, in bodily injury and/or property damage.

Accordingly, we could experience material warranty or product liability expenses in the future and incur significant costs to defend against these claims. In addition, if any of our products are, or are alleged to be, defective, we may be required to participate in a recall of that product if the defect or the alleged defect relates to automotive safety. Product recalls could cause us to incur material costs and could harm our reputation or cause us to lose customers, particularly if any such recall causes customers to question the safety or reliability of our products. Also, while we possess considerable historical warranty and recall data with respect to the products we currently produce, we do not have such data relating to new products, assembly programs or technologies, including any new fuel and emissions technology and systems being brought into production, to allow us to accurately estimate future warranty or recall costs.

In addition, the increased focus on systems integration platforms utilizing fuel and emissions technology with more sophisticated components from multiple sources could result in an increased risk of component warranty costs over which we have little or no control and for which we may be subject to an increasing share of liability to the extent any of the other component suppliers are in financial distress or are otherwise incapable of fulfilling their warranty or product recall obligations. Our costs associated with providing product warranties and responding to product recall claims could be material. Product liability, warranty and recall costs may adversely affect our business, results of operations and financial condition.

We may be adversely affected by laws and regulations, including environmental, health and safety laws and regulations.

We are subject to various U.S. federal, state and local, and non-U.S. laws and regulations, including those related to environmental, health and safety, financial, tax, customs and other matters. We cannot predict the substance or impact of pending or future legislation or regulations, or the application thereof. The introduction of new laws or regulations or changes in existing laws or regulations, or the interpretations thereof, could increase the costs of doing business for us or our customers or suppliers or restrict our actions and adversely affect our financial condition, results of operations and cash flows.

In particular, we are subject to a broad range of laws and regulations governing emissions to air; discharges to water; noise and odor emissions; the generation, handling, storage, transportation, treatment, reclamation and disposal of chemicals and waste materials; the cleanup of contaminated properties; and health and safety. We may incur substantial costs in complying with these laws and regulations. Many of our current and former facilities have been subject to certain environmental investigations and remediation activities, and we maintain environmental reserves for certain of these sites. Through various acquisitions, we have acquired a number of manufacturing facilities, and we cannot assure that we will not incur material costs or liabilities relating to activities that predate our ownership. Material future expenditures may be necessary if compliance standards change or material unknown conditions that require remediation are discovered. Environmental laws could also restrict our ability to expand our facilities or could require us to acquire costly equipment or to incur other significant expenses. If we fail to comply with present and future environmental laws and regulations, we could be subject to future liabilities, which could adversely affect our financial condition, operating results and cash flows.

We are involved from time to time in legal proceedings, claims or investigations which could have an adverse impact on our results of operations and financial condition.

We are involved in legal proceedings, claims or investigations that, from time to time, may be significant. These matters typically arise in the normal course of business including, without limitation, commercial or contractual disputes, including warranty claims and other disputes with customers and suppliers; intellectual property matters; personal injury claims; environmental issues; tax matters; employment matters; or allegations relating to legal compliance by us or our employees.

For further information regarding our legal matters, see Item 3. “Legal Proceedings.” The industries in which we operate are also periodically reviewed or investigated by regulators, which could lead to enforcement actions, fines and penalties or the assertion of private litigation claims. It is not possible to predict with certainty the outcome of claims, investigations and lawsuits, and we could in the future incur judgments, fines or penalties or enter into settlements of lawsuits and claims that could have an adverse effect on our business, results of operations and financial condition in any particular period.

Work stoppages or similar difficulties could disrupt our operations and negatively affect our operations and financial performance.

We may be subject to work stoppages and may be affected by other labor disputes. A number of our collective bargaining agreements expire in any given year. There is no certainty that we will be successful in negotiating new agreements with these unions that extend beyond the current expiration dates or that these new agreements will be on terms as favorable to us as past labor agreements. Failure to renew these agreements when they expire or to establish new collective bargaining agreements on terms acceptable to us and the unions could result in work stoppages or other labor disruptions which may have an adverse effect on our operations, customer relationships and financial results. Additionally, a work stoppage at one or more of our suppliers or our customers' suppliers could adversely affect our operations if an alternative source of supply were not readily available. Work stoppages by our customers' employees could result in reduced demand for our products and could have an adverse effect on our business. In addition, it is possible that our workforce will become more unionized in the future. Unionization activities could increase our costs, which could negatively affect our results of operations.

If we are unable to protect our intellectual property or if a third party challenges our intellectual property rights, our business could be adversely affected.

We own or have rights to proprietary technology that is important to our business. We rely on intellectual property laws, patents, trademarks and trade secrets to protect such technology. Such protections, however, vary among the countries in which we market and sell our products, and as a result, we may be unable to prevent third parties from using our intellectual property without authorization. Any infringement or misappropriation of our technology could have an adverse effect on our business and results of operations. We also face exposure to claims by others for infringement of intellectual property rights and could incur significant costs or losses related to such claims. In addition, many of our supply agreements require us to indemnify our customers from third-party infringement claims. These claims, regardless of their merit or resolution, are frequently costly to prosecute, defend or settle and divert the efforts and attention of our management and employees. If any such claim were to result in an adverse outcome, we could be required to take actions which may include: ceasing the manufacture, use or sale of the infringing products; paying substantial damages to third parties, including to customers to compensate them for the discontinued use of a product or to replace infringing technology with non-infringing technology; or expending significant resources to develop or license non-infringing products, any of which could adversely affect our operations, business and financial condition.

A disruption in, or the inability to successfully implement upgrades to, our information technology systems, including disruptions relating to cybersecurity, could adversely affect our business and financial performance.

We rely upon information technology networks, systems and processes to manage and support our business. We have implemented a number of procedures and practices designed to protect against breaches or failures of our systems. Despite the security measures that we have implemented, including those measures to prevent cyber-attacks, our systems could be breached or damaged by computer viruses or unauthorized physical or electronic access. A breach of our information technology systems could result in theft of our intellectual property, disruption to business or unauthorized access to customer or personal information. Such a breach could adversely impact our operations and/or our reputation and may cause us to incur significant time and expense to cure or remediate the breach.

Further, we continually update and expand our information technology systems to enable us to more efficiently run our business. If these systems are not implemented successfully, our operations and business could be disrupted and our ability to report accurate and timely financial results could be adversely affected.

Our expected annual effective tax rate could be volatile and could materially change as a result of changes in many items including mix of earnings, debt and capital structure and other factors.

Many items could impact our effective tax rate including changes in our debt and capital structure, mix of earnings and many other factors. Our overall effective tax rate is based upon the consolidated tax expense as a percentage of consolidated earnings before tax. However, tax expenses and benefits are not recognized on a consolidated or global basis, but rather on a jurisdictional, legal entity basis. Further, certain jurisdictions in which we operate generate losses where no current financial statement tax benefit is realized. In addition, certain jurisdictions have statutory rates greater than or less than the United States statutory rate. As such, changes in the mix and source of earnings between jurisdictions could have a significant impact on our overall effective tax rate in future years. Changes in rules related to accounting for income taxes, changes in tax laws and rates or adverse outcomes from tax audits that occur regularly in any of our jurisdictions could also have a significant impact on our overall effective tax rate in future periods.

Impairment charges relating to our goodwill, long-lived assets or intangible assets could adversely affect our results of operations.

We regularly monitor our goodwill, long-lived assets and intangible assets for impairment indicators. In conducting our goodwill impairment testing, we compare the fair value of each of our reporting units to the related net book value. In conducting our impairment analysis of long-lived and intangible assets, we compare the undiscounted cash flows expected to be generated from the long-lived or intangible assets to the related net book values. Changes in economic or operating conditions impacting our estimates and assumptions could result in the impairment of our goodwill, long-lived assets or intangible assets. In the event that we determine that our goodwill, long-lived assets or intangible assets are impaired, we may be required to record a significant charge to earnings, which could adversely affect our results of operations.

We operate as a holding company and depend on our subsidiaries for cash to satisfy the obligations of the holding company.

Cooper-Standard Holdings Inc. is a holding company. Our subsidiaries conduct all of our operations and own substantially all of our assets. Our cash flow and our ability to meet our obligations depend on the cash flow of our subsidiaries. In addition, the payment of funds in the form of dividends, intercompany payments, tax sharing payments and otherwise may be subject to restrictions under the laws of the countries of incorporation of our subsidiaries or their governing documents.

Item 1B. Unresolved Staff Comments

None.

Item 2. Properties

As of December 31, 2018, our operations were conducted through 159 wholly-owned, leased and joint venture facilities in 21 countries (North America: Canada, Costa Rica, Mexico, United States; Asia Pacific: China, India, Japan, South Korea, Thailand; Europe: Czech Republic, France, Germany, Italy, Netherlands, Poland, Romania, Serbia, Spain, Sweden, United Kingdom; South America: Brazil), of which 104 are predominantly manufacturing facilities and 55 have design, engineering, administrative or logistics designation(s). Our corporate headquarters are located in Novi, Michigan. Our manufacturing facilities are located in North America, Europe, Asia and South America. We believe that substantially all of our properties are in generally good condition and there is sufficient capacity to meet current and projected manufacturing, product development and logistics requirements. The following table summarizes our key property holdings:

Segment	Type	Total Facilities*	Owned Facilities
North America	Manufacturing [a]	40	23
	Other [b]	21	—
Asia Pacific	Manufacturing [a]	34	10
	Other [b]	11	—
Europe	Manufacturing [a]	26	15
	Other [b]	22	—
South America	Manufacturing [a]	4	1
	Other [b]	1	—

(a) Includes multi-activity sites which are predominantly manufacturing.

(b) Includes design, engineering, administrative and logistics locations.

(*) Excludes 7 unutilized facilities: (3) Europe; (4) North America

(*) Includes 20 R&D facilities worldwide.

Item 3. Legal Proceedings

The litigation process is subject to many uncertainties, and the outcome of individual matters is not predictable with assurance. See Note 23. “Contingent Liabilities” to the consolidated financial statements included in Item 8. “Financial Statements and Supplementary Data” of this Report for discussion of loss contingencies.

On March 30, 2016, a putative class action complaint alleging conspiracy to fix the price of body sealing products used in automobiles and other light-duty vehicles was filed in Ontario against numerous automotive suppliers, including Cooper-Standard Holdings Inc., CSA U.S. and Cooper-Standard Automotive Canada Limited (“CS Defendants”) and Nishikawa Cooper LLC, a joint venture in which the Company holds a 40% interest. Plaintiffs purport to be direct or indirect purchasers of body sealing products supplied by the CS Defendants and/or the other defendants during the relevant period. The plaintiffs seek recovery of damages on behalf of direct and indirect purchasers against all defendants in an amount to be determined, punitive damages, as well as pre-judgment and post-judgment interest and related costs and expenses of the litigation. The Company believes the claims asserted against the CS Defendants are without merit and intends to vigorously defend against these claims. Further, the Company does not believe that there is a material loss that is probable and reasonably estimable related to these claims. In January 2019, Nishikawa Rubber Co. entered into a settlement agreement which provides for dismissal of the claims against the CS Defendants. The settlement is subject to court approval, which has not yet been granted.

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

Our common stock has been traded on the NYSE since October 17, 2013 under the symbol “CPS.”

Holders of Common Stock

As of February 8, 2019, there were approximately 8 holders of record of our common stock. This stockholder figure does not include a substantially greater number of holders whose shares are held of record by banks, brokers and other financial institutions.

Dividends

Cooper-Standard Holdings Inc. has never paid or declared a dividend on its common stock. The declaration of any prospective dividends is at the discretion of the Board of Directors and would be dependent upon sufficient earnings, capital requirements, financial position, general economic conditions, state law requirements and other relevant factors. Additionally, our credit agreements governing our ABL Facility, Term Loan Facility and Senior Notes contain covenants that, among other things, restrict our ability to pay certain dividends and distributions subject to certain qualifications and limitations. See “Financing Arrangements” under Item 7. “Management’s Discussion and Analysis of Financial Condition and Results of Operations” of this Report. We do not anticipate paying any dividends on our common stock in the foreseeable future.

Securities Repurchase Program

In March 2016, our Board of Directors approved a securities repurchase program (the “2016 Program”) authorizing us to repurchase, in the aggregate, up to $125.0 million of our outstanding common stock or warrants to purchase common stock. Under the 2016 Program, repurchases were authorized to be made on the open market or through private transactions, as determined by our management and in accordance with prevailing market conditions and federal securities laws and regulations. The 2016 Program was fully utilized as of December 31, 2018.

In June 2018, our Board of Directors approved a new common stock repurchase program (the “2018 Program”) authorizing us to repurchase, in the aggregate, up to $150.0 million of our outstanding common stock. Under the 2018 Program, repurchases may be made on the open market, through private transactions, accelerated share repurchases, round lot or block transactions on the New York Stock Exchange or otherwise, as determined by our management and in accordance with prevailing market conditions and federal securities laws and regulations. We expect to fund any future repurchases from cash on hand and future cash flows from operations. We are not obligated to acquire a particular amount of securities, and the 2018 Program may be discontinued at any time at the Company’s discretion. The 2018 Program was effective in November 2018.

As of December 31, 2018, we had approximately $134.7 million of repurchase authorization remaining.

A summary of shares of our common stock repurchased during the three months ended December 31, 2018 is shown below:

Period	Total Number of Shares Purchased (1)	Average Price Paid per Share	Total Number of Shares Purchased as Part of Publicly Announced Plans or Programs (2)	Approximate Dollar Value of Shares that May Yet be Purchased Under the Program (in millions)
October 1, 2018 through October 31, 2018	1,215	$105.81	—	$ 151.7
November 1, 2018 through November 30, 2018	—	$—	—	$ 151.7
December 1, 2018 through December 31, 2018	255,005	$66.80	255,005	$ 134.7
Total	256,220		255,005	$ 134.7

(1) Includes 1,215 shares repurchased by the Company to satisfy employee tax withholding requirements due upon the vesting of restricted stock awards and the exercise of stock option awards.
(2) Includes shares repurchased under the 2016 Program and 2018 Program.

Performance Graph

The following graph compares the cumulative total stockholder return for Cooper-Standard Holdings Inc. to the Standard & Poor’s 500 Index and the Standard & Poor’s Supercomposite Auto Parts & Equipment Index based on currently available data. The graph assumes an initial investment of $100 on December 31, 2013 and reflects the cumulative total return on that investment, including the reinvestment of all dividends where applicable, through December 31, 2018.

Comparison of Cumulative Return

	Ticker	12/31/2013	12/31/2014	12/31/2015	12/30/2016*	12/29/2017*	12/31/2018
Cooper-Standard Holdings Inc.	CPS	$ 100.00	$ 117.86	$ 157.99	$ 210.51	$ 249.44	$ 126.49
S&P 500	SPX	$ 100.00	$ 111.30	$ 112.62	$ 125.98	$ 153.03	$ 146.20
S&P Supercomposite Auto Parts & Equipment Index	S15AUTP	$ 100.00	$ 102.02	$ 95.21	$ 100.51	$ 131.95	$ 91.05

* Represents last trading day of the year

Item 6. Selected Financial Data

The selected financial data for the years ended December 31, 2018, 2017, 2016, 2015 and 2014 have been derived from our consolidated financial statements, which have been audited by Ernst & Young LLP, our independent registered public accounting firm. You should read the following data in conjunction with Item 7. "Management's Discussion and Analysis of Financial Condition and Results of Operations" and our consolidated financial statements and the notes thereto included in Item 8. "Financial Statements and Supplementary Data" of this Report.

	Year Ended December 31,				
	2018	2017	2016	2015	2014
	(Dollar amounts in millions except per share amounts)				
Statement of operations data:					
Sales	$3,629.3	$3,618.1	$3,472.9	$3,342.8	$3,244.0
Net income	104.6 [1]	138.6	140.4	111.8	45.5
Net income attributable to Cooper-Standard Holdings Inc.	107.8 [1]	135.3	139.0	111.9	42.8
Earnings per share:					
Basic	$6.02	$7.61	$7.96	$6.50	$2.56
Diluted	$5.89	$7.21	$7.42	$6.08	$2.39

	As of December 31,				
	2018	2017	2016	2015	2014
	(Dollar amounts in millions)				
Balance sheet data (at end of period):					
Cash and cash equivalents	$265.0	$516.0	$480.1	$378.2	$267.3
Net working capital [2]	237.0	118.8	90.2	175.3	294.3
Total assets	2,623.1	2,725.6	2,491.7	2,304.3	2,125.6
Total non-current liabilities	947.3	1,043.6	1,010.6	1,008.1	1,044.9
Total debt [3]	831.1	758.2	762.9	777.9	778.7
Total equity	859.5	855.1	721.8	614.8	548.7
Statement of cash flows data:					
Net cash provided by (used in):					
Operating activities	$149.4	$313.1	$365.5	$270.4	$171.0
Investing activities	(383.0)	(200.6)	(198.3)	(166.4)	(157.4)
Financing activities	(14.4)	(75.5)	(62.9)	(11.6)	49.4
Other financial data:					
Capital expenditures, including other intangible assets	$218.1	$186.8	$164.4	$166.3	$192.1

[1] 2018 net income amount includes impairment charges related to goodwill, intangible assets and fixed assets and the release of a valuation allowance against net deferred tax assets recorded in France and capital loss carryforwards in the U.S.

[2] Net working capital is defined as current assets (excluding cash and cash equivalents and assets held for sale) less current liabilities (excluding debt payable within one year and liabilities held for sale).

[3] Includes $394.4 of our Senior Notes, $328.5 of Term Loan, $10.3 in capital leases, $50.0 ABL Facility and $47.9 of other third-party debt as of December 31, 2018.

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

This management's discussion and analysis of financial condition and results of operations is intended to assist in understanding and assessing the trends and significant changes in our results of operations and financial condition. Our historical results may not indicate, and should not be relied upon as an indication of, our future performance. Our forward-looking statements reflect our current views about future events, are based on assumptions and are subject to known and unknown risks and uncertainties that could cause actual results to differ materially from those contemplated by these statements. See Item 1. "Business—Forward-Looking Statements" for a discussion of risks associated with reliance on forward-looking statements. Factors that may cause differences between actual results and those contemplated by forward-looking statements include, but are not limited to, those discussed below and in Item 1A. "Risk Factors." Management's discussion and analysis of financial condition and results of operations should be read in conjunction with Item 6. "Selected Financial Data" and our consolidated financial statements and the notes to those statements included in Item 8. "Financial Statements and Supplementary Data" of this Report.

Executive Overview

Our Business

We design, manufacture and sell sealing, fuel and brake delivery, fluid transfer and anti-vibration systems for use in passenger vehicles and light trucks manufactured by global OEMs. During the fourth quarter of 2018, we entered into a definitive agreement to sell the anti-vibration systems product line. The sale is expected to close in the first half of 2019 and is subject to customary closing conditions. In 2018, approximately 85% of our sales consisted of original equipment sold directly to OEMs for installation on new vehicles. The remaining 15% of our sales were primarily to Tier I and Tier II suppliers and non-automotive manufacturers. Accordingly, sales of our products are directly affected by the annual vehicle production of OEMs and, in particular, the production levels of the vehicles for which we provide specific parts. Most of our products are custom designed and engineered for a specific vehicle platform. Our sales and product development personnel frequently work directly with the OEMs' engineering departments in the design and development of our various products.

Although each OEM may emphasize different requirements as the primary criteria for judging its suppliers, we believe success as an automotive supplier generally requires outstanding performance with respect to quality, price, service, performance, design and engineering capabilities, innovation, timely delivery, financial stability and an extensive global footprint. Also, we believe our continued commitment to invest in global common processes is an important factor in servicing global customers with the same quality and consistency of product wherever we produce in the world. This is especially important when supplying products for global platforms.

In addition, to remain competitive and offset continued customer pricing pressure, we must also consistently achieve and sustain cost savings. In an ongoing effort to reduce our cost structure, we run a global continuous improvement program which includes training for our employees, as well as implementation of lean tools, structured problem solving, best business practices, standardized processes and change management. We also evaluate opportunities to consolidate facilities and to relocate certain operations to lower cost countries. We believe we will continue to be successful in our efforts to improve our design and engineering capability and manufacturing processes while achieving cost savings, including through our continuous improvement initiatives.

Our OEM sales are generally based upon purchase orders issued by the OEMs, with updated releases for volume adjustments. As such, we typically do not have a backlog of orders at any point in time. Once selected to supply products for a particular platform, we typically supply those products for the platform life, which is normally three to five years, although there is no guarantee that this will occur. In addition, when we are the incumbent supplier to a given platform, we believe we have a competitive advantage in winning the redesign or replacement platform.

In 2018, approximately 53% of our sales were generated in North America. Because of our significant international operations, we are subject to the risks associated with doing business in other countries, such as currency volatility, high interest and inflation rates, and the general political and economic risk that are associated with some of these markets.

Recent Trends and Conditions

General Economic Conditions and Outlook

The global automotive industry is susceptible to uncertain economic conditions that could adversely impact new vehicle demand. Business conditions may vary significantly from period to period or region to region.

In North America in 2019, growth is expected to continue, albeit at a more modest rate. Rising interest rates and continued uncertainty regarding global trade relationships, among other factors, could dampen economic momentum. Modest economic growth is also expected to continue in Canada and Mexico in 2019. The mix of vehicles produced and sold in the region continues to shift away from passenger cars in favor of crossover utility vehicles and light trucks.

In Europe, economic expansion continued in 2018 although momentum slowed in the second half of the year. Geopolitical concerns and the implementation of new environmental regulations in the automotive industry likely contributed to the slow-down. Looking ahead, we expect financial pressures in Italy, the continuation of global trade tensions and Britain's pending separation from the European Union ("Brexit") will challenge the regional economic outlook in 2019.

The Chinese government continues to manage the nation's economy with a goal of sustaining growth. The growth target for 2018 was approximately 6.5%. For 2019, the official target will likely be somewhat lower as rising debt, inflation and uncertainty are pressuring consumption and continuing tension within U.S.-China trade relationships is driving exports lower. Fiscal tools such as increased investment in infrastructure may be used to in order to meet government growth targets.

The Brazilian economy experienced a modest recovery in 2018. Stronger economic growth is forecasted in 2019 due to an improving labor market, rising credit growth and market-friendly government agenda. Based on this, our near-term outlook for South America is positive. We remain cautious for the mid to long-term outlook, however, given the long history of political instability and economic volatility in the region.

The current domestic and international political environment, including existing and potential changes to U.S. policies related to global trade and tariffs, have resulted in uncertainty surrounding the future state of the global economy. We continue to monitor the potential impacts of previously-announced tariffs; however we anticipate these and other tariffs to negatively impact material costs.

Raw Materials

Our business is susceptible to inflationary pressures with respect to raw materials which may place operational and profitability burdens on the entire supply chain. Costs related to raw materials, such as steel, aluminum, and oil and oil-derived commodities, continue to be volatile. In addition, we expect commodity cost volatility to have a continual impact on future earnings and operating cash flows. As such, on an ongoing basis, we work with our customers and suppliers to mitigate both inflationary pressures and our material-related cost exposures.

Production Levels

Our business is directly affected by the automotive vehicle production rates in North America, Europe, Asia Pacific and South America. New vehicle demand is driven by macroeconomic and other factors, such as interest rates, manufacturer and dealer sales incentives, fuel prices, consumer confidence, employment levels, income growth trends and government and tax incentives. The industry could face uncertainties that may adversely impact consumer demand for vehicles as well as the future production environment.

According to the forecasting firm IHS Markit, global light vehicle production was approximately 94 million units in 2018. This reflects a decline of approximately 1.0% globally.

Details on light vehicle production in certain regions for 2018 and 2017, as well as projections for 2019, are provided in the following table:

(In millions of units)	2019[1]	2018[1]	2017[1]	Projected % Change 2018-2019	% Change 2017-2018
North America	16.9	17.0	17.1	(0.5)%	(0.6)%
Europe	21.9	21.9	22.2	— %	(1.2)%
Asia Pacific [2]	50.3	49.4	50.0	1.9 %	(1.2)%
South America	3.6	3.4	3.3	6.5 %	3.1 %

[1] Production data based on IHS Automotive, January 2019.

[2] Includes Greater China units of 27.4, 27.0, and 28.0 for 2019, 2018 and 2017, respectively.

We anticipate that light vehicle production in North America and Europe will remain relatively stable over the next few years. In South America, we anticipate light vehicle production to be relatively strong in the near-term, but we remain cautious due to potential geo-political instability in the region.

Industry Overview

Competition in the automotive supplier industry is intense and has increased in recent years as OEMs have demonstrated a preference for stronger relationships with fewer suppliers. Because of a growing emphasis on global vehicle platforms, automotive suppliers with a global manufacturing footprint capable of fully servicing customers around the world will typically have a competitive advantage over smaller, regional competitors. This dynamic is likely to result in further consolidation of competing suppliers within our industry over time.

OEMs have shifted some research and development, design and testing responsibility to suppliers, while at the same time shortening new product cycle times. To remain competitive, suppliers must have state-of-the-art engineering and design capabilities and must be able to continuously improve their engineering, design and manufacturing processes to effectively service the customer. Suppliers are increasingly expected to collaborate on, or assume the product design and development of, key automotive components and to provide innovative solutions to meet evolving technologies aimed at improved emissions and fuel economy.

Increased competitiveness in the industry, as well as customer focus on costs, has resulted in continued pressure on suppliers for price reductions, reducing the overall profitability of the industry. Consolidations and market share shifts among vehicle manufacturers continue to put additional pressures on the supply chain. These pricing and market pressures will continue to drive our focus on reducing our overall cost structure through continuous improvement initiatives, capital redeployment, restructuring and other cost management processes.

In addition to the above, other factors will present opportunities for automotive suppliers who are positioned for the changing environment, including autonomous and connected vehicles, evolving government regulation, and consumer preference for environmentally friendly products and technology, including hybrid and electric vehicle architectures.

Critical Accounting Policies and Estimates

Our significant accounting policies are more fully described in Note 2. “Basis of Presentation and Summary of Significant Accounting Policies” to the consolidated financial statements included in Item 8. “Financial Statements and Supplementary Data” of this Report. Certain of our accounting policies require the application of significant judgment by management in selecting the appropriate assumptions for calculating financial estimates. These policies require the most difficult, subjective or complex judgments that management makes in the preparation of the financial statements and accompanying notes. We consider an accounting estimate to be critical if (i) it requires us to make assumptions about matters that were uncertain at the time we were making the estimate, and (ii) changes in the estimate or different estimates that we could have selected could have had a material impact on our financial condition or results of operations. Such critical accounting estimates are discussed below. For these, materially different amounts could be reported under varied conditions and assumptions. Other items in our consolidated financial statements require estimation, however, in our judgment, they are not as critical as those discussed below.

Acquisitions. Upon successful consummation of our 2018 acquisitions, we were subject to the accounting guidance as prescribed by ASC 805 - Business Combinations. We were required to allocate the purchase price of the acquired businesses to the identifiable assets and liabilities based on fair value. The excess purchase price over the fair value of identifiable assets and liabilities was recorded as goodwill. Determining the fair values of assets acquired and liabilities assumed, especially with regard to intangible assets, requires significant levels of estimates and assumptions made by management. In order to assist management, we utilized third party valuation experts in determining the fair values.

Goodwill. Our goodwill is tested for impairment as of October 1 of each year for all of our reporting units, and more frequently if events occur or circumstances change that would warrant such a review. For our goodwill analysis, fair values are based on the cash flows projected in the reporting units’ strategic plans and long-range planning forecasts, discounted at a risk-adjusted rate of return. Our long-range planning forecasts are based on our assessment of revenue growth rates generally based on industry specific data, external vehicle build assumptions published by widely used external sources, and customer market share data based on known and targeted awards over a five-year period. The projected profit margin assumptions included in the plans are based on the current cost structure and adjustments for anticipated cost reductions or increases. If different assumptions were used in these plans, the related cash flows used in measuring fair value could be different and impairment of goodwill might be recorded. We assess the reasonableness of the estimated fair values using market based multiples of comparable companies. In contemplation of our annual impairment analysis, we noted potential adverse changes in operating conditions. Our annual goodwill impairment analysis for 2018 resulted in impairment for the Europe and Asia Pacific segments. The annual goodwill impairment analysis for 2017 resulted in no impairment. See Note 9. “Goodwill and Intangibles” to the consolidated financial statements included in Item 8. “Financial Statements and Supplementary Data” of this Report for additional information.

Long-Lived Assets. We monitor our long-lived assets for impairment indicators on an ongoing basis. If impairment indicators exist, we analyze the undiscounted cash flows expected to be generated from the long-lived assets compared to the related net book values. If the net book value exceeds the undiscounted cash flows, an impairment loss is measured and recognized. An impairment loss is measured as the difference between the net book value and the fair value of the long-lived assets. Fair value is estimated based upon either a discounted cash flow analysis or estimated salvage values. Cash flows are estimated using internal budgets based on recent sales data, independent automotive production volume estimates and customer commitments, as well as assumptions related to discount rates. Changes in economic or operating conditions impacting these estimates and assumptions could result in the impairment of long-lived assets. In the fourth quarter of 2018, the Company completed an impairment analysis of our long-lived assets based on changes in economic and operating conditions. Due to the deterioration of financial results, the analysis resulted in impairment at various locations in our Europe and Asia Pacific segments. See Note 8. “Property, Plant and Equipment” to the consolidated financial statements included in Item 8. “Financial Statements and Supplementary Data” of this Report for additional information.

Restructuring. Specific accruals have been recorded in connection with restructuring initiatives. These accruals include estimates principally related to employee separation costs, the closure and/or consolidation of facilities and contractual obligations. Actual amounts recognized could differ from the original estimates. Restructuring-related reserves are reviewed on a quarterly basis, and changes to plans are appropriately recognized when identified. Changes to plans associated with the restructuring of existing businesses are generally recognized as employee separation and plant phase-out costs in the period the change occurs. See Note 7. “Restructuring” to the consolidated financial statements included in Item 8. “Financial Statements and Supplementary Data” of this Report for additional information.

Revenue Recognition and Sales Commitments. We generally enter into agreements with customers to produce products at the beginning of a vehicle’s life. Although such contracts do not usually include minimum quantities, fulfillment of customers’ purchasing requirements can be our obligation for the entire production life of the vehicle. These agreements generally may be terminated by our customer at any time, but such cancellations have historically been minimal. In limited cases, we may be committed to supply products at selling prices that do not cover our costs. In such situations, we recognize losses as they are incurred.

We receive blanket purchase orders from many customers annually. Generally, such purchase orders and related documents establish the annual terms, including pricing, related to a vehicle model. However, purchase orders generally do not specify quantities. We recognize revenue based on a point in time, generally when products are shipped or delivered to customers. As part of certain agreements, customers ask for cost reductions. We accrue for such concessions by reducing revenue as products are shipped. We also generally have ongoing adjustments to customer pricing arrangements based on the content and cost of our products. Such pricing accruals are adjusted as they are settled with customers.

Income Taxes. In determining the provision for income taxes for financial statement purposes, we make estimates and judgments which affect our evaluation of the carrying value of our deferred tax assets as well as our calculation of certain tax liabilities. We evaluate the carrying value of our deferred tax assets on a quarterly basis. In completing this evaluation, we consider all available positive and negative evidence. Such evidence includes historical operating results, the existence of cumulative earnings and losses in the most recent fiscal years, expectations for future pretax operating income, the time period over which our temporary differences will reverse, and the implementation of feasible and prudent tax planning strategies. Deferred tax assets are reduced by a valuation allowance if, based on the weight of this evidence, it is more likely than not that all or a portion of the recorded deferred tax assets will not be realized in future periods.

Concluding that a valuation allowance is not required is difficult when there is significant negative evidence which is objective and verifiable, such as cumulative losses in recent years. We utilize three years’ cumulative pre-tax book results adjusted for significant permanent book to tax differences as a measure of cumulative results in recent years. In certain foreign jurisdictions, our analysis indicates that we have cumulative three year historical losses on this basis. This is considered significant negative evidence which is difficult to overcome. However, the three-year loss position is not solely determinative, and, accordingly, management considers all other available positive and negative evidence in its analysis. Based upon this analysis, we concluded that it is more likely than not that the net deferred tax assets in certain foreign jurisdictions may not be realized in the future. Accordingly, we continue to maintain a valuation allowance related to those net deferred tax assets. However, since future financial results may differ from previous estimates, periodic adjustments to our valuation allowances may be necessary.

In addition, the calculation of our tax benefits and liabilities includes uncertainties in the application of complex tax regulations in a multitude of jurisdictions across our global operations. We recognize tax benefits and liabilities based on our estimate of whether, and the extent to which, additional taxes will be due. We adjust these liabilities based on changing facts and circumstances; however, due to the complexity of some of these uncertainties and the impact of any tax audits, the ultimate resolutions may be materially different from our estimated liabilities. See Note 16. “Income Taxes” to the consolidated financial statements included in Item 8. “Financial Statements and Supplementary Data” of this Report for additional information.

Pensions and Postretirement Benefits Other Than Pensions. Included in our results of operations are significant pension and postretirement benefit costs, which are measured using actuarial valuations. Inherent in these valuations are key assumptions, including discount rates, mortality rates, expected returns on plan assets and health care cost trend rates. These assumptions are determined as of the current year measurement date. We consider current market conditions, including changes in interest rates, in making these assumptions. Changes in pension and postretirement benefit costs may occur in the future due to changes in these assumptions. Our net pension and postretirement benefit costs were approximately $6.5 million and $1.4 million, respectively, for the year ended December 31, 2018.

To develop the discount rate for each pension plan, the expected cash flows underlying the plan’s benefit obligations were discounted using a December 31, 2018 pension index to determine a single equivalent rate. To develop our expected return on plan assets, we considered historical long-term asset return experience, the expected investment portfolio mix of plan assets and an estimate of long-term investment returns. To develop our portfolio of plan assets, we considered the duration of the plan liabilities and gave more weight to equity positions, including both public and private equity investments, than to fixed-income securities.

Weighted average assumptions used to determine pension benefit obligations as of December 31, 2018 were as follows:

	U.S.	Non-U.S.
Discount rate	4.25 %	2.34 %
Rate of compensation increase	N/A	2.99 %

Weighted average assumptions used to determine net periodic benefit costs for the year ended December 31, 2018 were as follows:

	U.S.	Non-U.S.
Discount rate	3.55 %	2.17 %
Expected return on plan assets	6.50 %	5.82 %
Rate of compensation increase	N/A	3.17 %

The sensitivity of our pension cost and obligations to changes in key assumptions, holding all other assumptions constant, is as follows:

Change in assumption	Impact on 2019 net periodic benefit cost	Impact on PBO as of December 31, 2018
1% increase in discount rate	- $1.5 million	- $49.9 million
1% decrease in discount rate	+ $1.6 million	+ $61.1 million
1% increase in expected return on plan assets	- $3.0 million	—
1% decrease in expected return on plan assets	+ $3.0 million	—

Aggregate pension net periodic benefit cost is forecasted to be approximately $7.9 million in 2019.

Health care cost trend rates are assumed to reflect market trend, actual experience and future expectations. Health care cost trend rate assumptions used to determine the postretirement benefit obligation as of December 31, 2018 were as follows:

	U.S.	Non-U.S.
Health care cost trend rate	5.31 %	5.00 %
Ultimate health care cost trend rate	4.20 %	5.00 %
Year that the rate reaches the ultimate trend rate	2025	2018

The sensitivity of our postretirement benefit cost and obligations to changes in the health care cost trend rate is as follows:

	Impact on service cost and interest cost	Impact on PBO as of December 31, 2018
1% increase in health care cost trend rate	+ $0.3 million	+ $4.0 million
1% decrease in health care cost trend rate	- $0.2 million	- $3.2 million

Aggregate other postretirement net periodic benefit is forecasted to be approximately $0.4 million in 2019.

The Company's policy is to fund pension plans such that sufficient assets will be available to meet future benefit requirements and contribute amounts deductible for United States federal income tax purposes or amounts required by local statute. During 2018, the Company made a discretionary contribution of $15.0 million to its U.S. pension plan. The Company estimates it will make funding cash contributions to its U.S. and non-U.S. pension plans of approximately $2.4 million and $6.3 million, respectively in 2019.

The Company does not prefund its postretirement benefit obligations. Rather, payments are made as costs are incurred by covered retirees. We expect net other postretirement benefit payments to be approximately $2.5 million in 2019.

Results of Operations

	Year Ended December 31,			Change	
	2018	2017	2016	2018 vs. 2017	2017 vs. 2016
	(Dollar amounts in thousands)				
Sales	$3,629,293	$3,618,126	$3,472,891	$11,167	$145,235
Cost of products sold	3,075,737	2,946,687	2,808,115	129,050	138,572
Gross profit	553,556	671,439	664,776	(117,883)	6,663
Selling, administration & engineering expenses	314,805	340,963	356,647	(26,158)	(15,684)
Amortization of intangibles	14,844	14,056	13,566	788	490
Gain on sale of land	(10,377)	—	—	(10,377)	—
Goodwill impairment charges	45,281	—	—	45,281	—
Other impairment charges	43,706	14,763	1,273	28,943	13,490
Restructuring charges	29,722	35,137	46,031	(5,415)	(10,894)
Other operating loss	—	—	155	—	(155)
Operating profit	115,575	266,520	247,104	(150,945)	19,416
Interest expense, net of interest income	(41,004)	(42,112)	(41,389)	1,108	(723)
Equity in earnings of affiliates	6,718	5,519	7,877	1,199	(2,358)
Loss on refinancing and extinguishment of debt	(770)	(1,020)	(5,104)	250	4,084
Other expense, net	(5,613)	(15,807)	(13,728)	10,194	(2,079)
Income before income taxes	74,906	213,100	194,760	(138,194)	18,340
Income tax (benefit) expense	(29,683)	74,527	54,321	(104,210)	20,206
Net income	104,589	138,573	140,439	(33,984)	(1,866)
Net (income) loss attributable to noncontrolling interests	3,177	(3,270)	(1,451)	6,447	(1,819)
Net income attributable to Cooper-Standard Holdings Inc.	$107,766	$135,303	$138,988	$(27,537)	$(3,685)

Year Ended December 31, 2018 Compared to Year Ended December 31, 2017.
Sales
Sales for the year ended December 31, 2018 increased 0.3%, compared to the year ended December 31, 2017.

	Year Ended December 31,			Variance Due To:		
	2018	2017	Change	Volume / Mix*	Foreign Exchange	Other**
	(Dollar amounts in thousands)					
Total sales	$3,629,293	$3,618,126	$11,167	$(77,650)	$ 41,588	$47,229

* Net of customer price reductions
** Other includes the net impact of acquisitions and divestitures

Gross Profit

	Year Ended December 31,			Variance Due To:		
	2018	2017	Change	Volume / Mix*	Foreign Exchange	Cost Increases / (Decreases)
	(Dollar amounts in thousands)					
Cost of products sold	$3,075,737	$2,946,687	$129,050	$48,428	$ 29,668	$ 50,954
Gross profit	553,556	671,439	(117,883)	(126,078)	11,920	(3,725)
Gross profit percentage of sales	15.3 %	18.6 %				

* Net of customer price reductions

Cost of products sold is primarily comprised of material, labor, manufacturing overhead, depreciation and amortization and other direct operating expenses. Cost of products sold for the year ended December 31, 2018, increased $129.1 million, or 4.4%, compared to the year ended December 31, 2017. Materials comprise the largest component of our cost of products sold and represented approximately 51% of total cost of products sold for each of the years ended December 31, 2018 and 2017. Cost of products sold was impacted by vehicle production mix, commodity price and foreign exchange pressures, as well as acquisitions. These items were partially offset by continuous improvement, restructuring savings and material cost reductions.

Gross profit for the year ended December 31, 2018 decreased $117.9 million compared to the year ended December 31, 2017. As a percentage of sales, gross profit was 15.3% and 18.6% for the years ended December 31, 2018 and 2017, respectively. The decrease in margin was driven by unfavorable vehicle production mix, customer price reductions, commodity price pressures and foreign exchange, partially offset by net favorable operational performance and acquisitions.

Selling, Administration and Engineering. Selling, administration and engineering expense for the year ended December 31, 2018 was $314.8 million, or 8.7% of sales, compared to $341.0 million, or 9.4% of sales, for the year ended December 31, 2017. Selling, administration and engineering expenses for the year ended December 31, 2018 were favorable as a result of lower compensation-related costs and efficiencies related to cost improvement initiatives, partially offset by wage inflation.

Impairment Charges. Non-cash asset impairment charges of $89.0 million for the year ended December 31, 2018 consisted of $45.3 million of goodwill impairment charges, $42.9 million of property, plant and equipment impairment charges and $0.8 million of intangible impairment charges. Non-cash asset impairment charges of $14.8 million for the year ended December 31, 2017 consisted of $4.3 million related to our decision to divest two of our inactive European sites, and $10.5 million related to the deterioration of financial results at one of our Asia Pacific facilities, two of our European locations and one of our North American locations.

Restructuring. Restructuring charges for the year ended December 31, 2018 decreased $5.4 million compared to the year ended December 31, 2017. The decrease was primarily driven by lower expenses of $8.1 million related to the substantial completion of our European initiatives, partially offset by higher restructuring charges in the Asia Pacific segment.

Interest Expense, net. Net interest expense for the year ended December 31, 2018 decreased $1.1 million compared to the year ended December 31, 2017, primarily due to the amendment of the Term Loan Facility in March 2018.

Loss on Refinancing and Extinguishment of Debt. Loss on refinancing and extinguishment of debt for the year ended December 31, 2018 was $0.8 million, which resulted from the partial write off of new and unamortized debt issuance costs and unamortized original issue discount related to the amendment of the Term Loan Facility in March 2018.

Other Expense, net. Other expense for the year ended December 31, 2018 decreased $10.2 million compared to the year ended December 31, 2017. The decrease was primarily due to a lower components of net periodic benefit cost other than service cost and foreign currency losses in the year ended December 31, 2018, partially offset by lower miscellaneous income.

Income Tax Expense (Benefit). Income tax benefit for the year ended December 31, 2018 was $29.7 million on earnings before taxes of $74.9 million. This compares to income tax expense of $74.5 million on earnings before taxes of $213.1 million for the year ended December 31, 2017. The tax benefit in 2018 differed from the statutory rate due to the reversal of valuation allowances recorded against net operating loss carryforwards and other timing items in France, in addition to a capital loss carryforward in the U.S. Additional items impacting income taxes were a discrete benefit resulting from the finalization of U.S. tax reform calculations, the mix of income between the U.S. and foreign sources, tax incentives, incremental valuation allowance recorded on tax losses generated in certain foreign jurisdictions, other tax credits, and other nonrecurring discrete items. Tax expense in 2017 differed from the statutory rate as a result of the Tax Cuts and Jobs Act enacted in 2017, the mix of income between the U.S. and foreign sources, tax incentives, incremental valuation allowance recorded on tax losses generated in certain foreign jurisdictions, other tax credits, and other nonrecurring discrete items.

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

Sales

Sales for the year ended December 31, 2017 increased 4.2% compared to the year ended December 31, 2016.

	Year Ended December 31,			Variance Due To:		
	2017	2016	Change	Volume / Mix*	Foreign Exchange	Other**
	(Dollar amounts in thousands)					
Total sales	$3,618,126	$3,472,891	$145,235	$62,476	$ 26,280	$56,479

* Net of customer price reductions

** Other includes the net impact of acquisitions and divestitures

Gross Profit

	Year Ended December 31,			Variance Due To:		
	2017	2016	Change	Volume / Mix*	Foreign Exchange	Cost Increases / (Decreases)
	(Dollar amounts in thousands)					
Cost of products sold	$2,946,687	$2,808,115	$138,572	$104,025	$ 12,511	$ 22,036
Gross profit	671,439	664,776	6,663	(41,549)	13,769	34,443
Gross profit percentage of sales	18.6 %	19.1 %				

* Net of customer price reductions

Cost of products sold is primarily comprised of material, labor, manufacturing overhead, depreciation and amortization and other direct operating expenses. Cost of products sold for the year ended December 31, 2017, increased $138.6 million or 4.9% compared to the year ended December 31, 2016. Materials comprise the largest component of our cost of products sold and represented approximately 51% of total cost of products sold for the years ended December 31, 2017 and 2016. Cost of products sold was impacted by higher production volumes, commodity price and foreign exchange pressures, as well as our acquisitions. These items were partially offset by continuous improvement, restructuring savings and material cost reductions.

Gross profit for the year ended December 31, 2017 increased $6.7 million compared to the year ended December 31, 2016. As a percentage of sales, gross profit was 18.6% and 19.1% of sales for the years ended December 31, 2017 and 2016, respectively. The decrease in margin was driven by unfavorable vehicle production mix, customer price reductions, commodity price pressures and foreign exchange, partially offset by net favorable operational performance and acquisitions.

Selling, Administration and Engineering. Selling, administration and engineering expense for the year ended December 31, 2017 was $341.0 million or 9.4% of sales compared to $356.6 million, or 10.3%, of sales for the year ended December 31, 2016. Selling, administration and engineering expenses for the year ended December 31, 2017 were favorable as a result of lower compensation-related costs, partially offset by investment for growth and innovation.

Impairment Charges. Non-cash asset impairment charges of $14.8 million for the year ended December 31, 2017 consisted of $4.3 million related to our decision to divest two of our inactive European sites, and $10.5 million related to the deterioration of financial results at one of our Asia Pacific facilities, two of our European locations and one of our North American locations. Non-cash asset impairment charges of $1.3 million for the year ended December 31, 2016 resulted from the deterioration of financial results at one of our Asia Pacific facilities.

Restructuring. Restructuring charges for the year ended December 31, 2017 decreased $10.9 million compared to the year ended December 31, 2016. The decrease was primarily driven by lower expenses of $16.1 million related to the substantial completion of our European initiatives, partially offset by higher restructuring charges of $5.2 million in other regions.

Interest Expense, net. Net interest expense for the year ended December 31, 2017 increased $0.7 million compared to the year ended December 31, 2016, which resulted primarily from higher interest rates related to the Senior Notes.

Loss on Refinancing and Extinguishment of Debt. Loss on refinancing and extinguishment of debt for the year ended December 31, 2017 was $1.0 million, which resulted from the partial write off of new and unamortized debt issuance costs and unamortized original issue discount related to the amendment of the Term Loan Facility in May 2017.

Other Expense, net. Other expense for the year ended December 31, 2017 increased $2.1 million compared to the year ended December 31, 2016. The increase was primarily due to the reclassification of components of net periodic benefit cost other than service cost and foreign currency losses, partially offset by the nonrecurrence of underwriting fees related to the secondary offering of $5.9 million recorded in the year ended December 31, 2016 and other miscellaneous income recorded in the year ended December 31, 2017.

Income Tax Expense (Benefit). Income taxes for the year ended December 31, 2017 were $74.5 million on earnings before taxes of $213.1 million. This compares to income tax expense of $54.3 million on earnings before taxes of $194.8 million for the year ended December 31, 2016. Tax expense in 2017 and 2016 differed from the statutory rate due to a charge of $33.5 million as a result of the Tax Cuts and Jobs Act enacted in 2017, the mix of income between the United States and foreign sources, tax incentives, incremental valuation allowance recorded on tax losses generated in certain foreign jurisdictions, other tax credits, and other nonrecurring discrete items.

Segment Results of Operations

The Company operates in four reportable segments: North America, Europe, Asia Pacific and South America. The Company evaluates segment performance based on segment profit before tax. The results of each segment include certain allocations for general, administrative, interest, and other shared costs. The accounting policies of the Company's segments are consistent with those described in Note 2. "Basis of Presentation and Summary of Significant Accounting Policies" to the consolidated financial statements included in Item 8. "Financial Statements and Supplementary Data" of this Report.

The following tables presents sales and segment profit (loss) for each of the reportable segments.

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

Sales

	Year Ended December 31,			Variance Due To:		
	2018	2017	Change	Volume / Mix*	Foreign Exchange	Other
	(Dollar amounts in thousands)					
Sales to external customers						
North America	$1,924,717	$1,882,670	$42,047	$709	$(780)	$42,118
Europe	1,030,102	1,043,738	(13,636)	(40,747)	48,937	(21,826)
Asia Pacific	576,411	585,161	(8,750)	(42,959)	7,272	26,937
South America	98,063	106,557	(8,494)	5,347	(13,841)	—
Consolidated	$3,629,293	$3,618,126	$11,167	$(77,650)	$41,588	$47,229

* Net of customer price reductions

- The impact of foreign currency exchange primarily related to the Euro, Chinese Renminbi and the Brazilian Real.
- Other includes the net impact of acquisitions and divestitures.

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Segment profit (loss)

	Year Ended December 31,			Variance Due To:			
	2018	2017	Change	Volume / Mix*	Foreign Exchange	Cost (Increases) / Decreases	Other
	(Dollar amounts in thousands)						
Income before income taxes							
North America	$224,578	$236,165	$(11,587)	$(41,690)	$ (319)	$ 25,137	$5,285
Europe	(63,259)	(18,872)	(44,387)	(49,964)	4,157	14,856	(13,436)
Asia Pacific	(75,189)	9,943	(85,132)	(37,189)	3,119	(3,140)	(47,922)
South America	(11,224)	(14,136)	2,912	2,765	(3,240)	(1,943)	5,330
Consolidated income before income taxes	$74,906	$213,100	$(138,194)	$(126,078)	$ 3,717	$ 34,910	$(50,743)

* Net of customer price reductions

- Volume / Mix includes changes in vehicle production volumes and shifts in consumer demand for specific vehicles particularly in Europe and China.
- The favorable impact of foreign currency exchange was primarily driven by the Euro and Chinese Renminbi, partially offset by the Polish Zloty, the Czech Koruna and the Brazilian Real.
- The Cost (Increases) / Decreases category above includes:

The increase in material cost pressure and wage inflation;

Net operational efficiencies of $80.2 million primarily driven by our North America and Europe segments; and

The decrease in selling, administrative and engineering expense, due to lower compensation-related costs and efficiencies related to cost improvement initiatives.

- The Other category above includes changes in the net impact of acquisitions and divestitures, minority interest, restructuring expense and non-recurring items, including:

The $74.2 million increase in impairment charges: $38.9 million in the Asia Pacific segment, $37.2 million in the Europe segment, partially offset by the non-recurrence of prior period charges of $1.9 million in the North America segment; and

The gain of $10.4 million related to the sale of land in our Europe segment in 2018;

The non-recurrence of the prior period pension settlement charges of $5.9 million in our Europe segment and the foreign tax amnesty program expense of $4.6 million in our South America segment;

The $5.4 million decrease in restructuring expenses primarily related to our Europe segment, partially offset by an increase in the Asia Pacific segment.

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

Sales

	Year Ended December 31,			Variance Due To:		
	2017	2016	Change	Volume / Mix*	Foreign Exchange	Other
	(Dollar amounts in thousands)					
Sales to external customers						
North America	$1,882,670	$1,816,486	$66,184	$13,183	$3,685	$49,316
Europe	1,043,738	1,031,538	12,200	17,572	18,934	(24,306)
Asia Pacific	585,161	540,684	44,477	16,651	(3,643)	31,469
South America	106,557	84,183	22,374	15,070	7,304	—
Consolidated	$3,618,126	$3,472,891	$145,235	$62,476	$26,280	$56,479

* Net of customer price reductions

- The impact of foreign currency exchange primarily related to the Euro, the Brazilian Real and the Chinese Renminbi.
- Other includes the net impact of acquisitions and divestitures.

Segment profit (loss)

	Year Ended December 31,			Variance Due To:			
	2017	2016	Change	Volume / Mix*	Foreign Exchange	Cost (Increases) / Decreases	Other
	(Dollar amounts in thousands)						
Income before income taxes							