

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

FORM 10-K

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

For the fiscal year ended December 31, 2019

Commission file number: 001-13337



STONERIDGE, INC.

(Exact name of registrant as specified in its charter)

Ohio

(State or other jurisdiction of
incorporation or organization)

34-1598949

(I.R.S. Employer
Identification No.)

39675 MacKenzie Drive, Suite 400, Novi, Michigan

(Address of principal executive offices)

48377

(Zip Code)

(248) 489-9300

Registrant's telephone number, including area code

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

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Shares, without par value	SRI	New York Stock Exchange

Securities registered pursuant to section 12(g) of the Act: **None**

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. ☐ Yes ☒ No

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

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. ☒ Yes ☐ No

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§ 232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). ☒

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company or an emerging growth company. See definition of "large accelerated filer," "accelerated filer," "smaller reporting company" and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer ☒
Smaller reporting company ☐

Accelerated filer ☐
Emerging growth company ☐

Non-accelerated filer ☐

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

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

As of June 30, 2019, the aggregate market value of the registrant's Common Shares held by non-affiliates of the registrant was approximately \$827.0 million. The closing price of the Common Shares on June 28, 2019 as reported on the New York Stock Exchange was \$31.55 per share. As of June 30, 2019, the number of Common Shares outstanding was 27,366,443.

The number of Common Shares outstanding as of February 20, 2020 was 27,408,272.

DOCUMENTS INCORPORATED BY REFERENCE

Definitive Proxy Statement for the Annual Meeting of Shareholders to be held on May 12, 2020, into Part III, Items 10, 11, 12, 13 and 14.

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Forward-Looking Statements

Portions of this report on Form 10-K contain “forward-looking statements” under the Private Securities Litigation Reform Act of 1995. These statements appear in a number of places in this report and may include statements regarding the intent, belief or current expectations of the Company, with respect to, among other things, our (i) future product and facility expansion, (ii) acquisition strategy, (iii) investments and new product development, (iv) growth opportunities related to awarded business and (v) operational expectations. Forward-looking statements may be identified by the words “will,” “may,” “should,” “designed to,” “believes,” “plans,” “projects,” “intends,” “expects,” “estimates,” “anticipates,” “continue,” and similar words and expressions. The forward-looking statements are subject to risks and uncertainties that could cause actual events or results to differ materially from those expressed in or implied by the statements. Important factors that could cause actual results to differ materially from those in the forward-looking statements include, among other factors:

- the reduced purchases, loss or bankruptcy of a major customer or supplier;
- the costs and timing of business realignment, facility closures or similar actions;
- a significant change in automotive, commercial, off-highway, motorcycle or agricultural vehicle production;
- competitive market conditions and resulting effects on sales and pricing;
- the impact on changes in foreign currency exchange rates on sales, costs and results, particularly the Argentinian peso, Brazilian real, Chinese renminbi, euro, Mexican peso and Swedish krona;
- our ability to achieve cost reductions that offset or exceed customer-mandated selling price reductions;
- customer acceptance of new products;
- our ability to successfully launch/produce products for awarded business;
- adverse changes in laws, government regulations or market conditions, including tariffs, affecting our products or our customers’ products;
- our ability to protect our intellectual property and successfully defend against assertions made against us;
- liabilities arising from warranty claims, product recall or field actions, product liability and legal proceedings to which we are or may become a party, or the impact of product recall or field actions on our customers;
- labor disruptions at our facilities or at any of our significant customers or suppliers;
- business disruptions due to natural disasters or other disasters outside our control, such as the recent coronavirus outbreak;
- the ability of our suppliers to supply us with parts and components at competitive prices on a timely basis, including the impact of potential tariffs and trade considerations on their operations and output;
- the amount of our indebtedness and the restrictive covenants contained in the agreements governing our indebtedness, including our revolving credit facility;
- capital availability or costs, including changes in interest rates or market perceptions;
- the failure to achieve the successful integration of any acquired company or business;
- risks related to a failure of our information technology systems and networks, and risks associated with current and emerging technology threats and damage from computer viruses, unauthorized access, cyber attack and other similar disruptions; and
- the items described in Part I, Item 1A (“Risk Factors”).

The forward-looking statements contained herein represent our estimates only as of the date of this filing and should not be relied upon as representing our estimates as of any subsequent date. While we may elect to update these forward-looking statements at some point in the future, we specifically disclaim any obligation to do so, whether to reflect actual results, changes in assumptions, changes in other factors affecting such forward-looking statements or otherwise.

PART I

Item 1. Business.

Overview

Founded in 1965, Stoneridge, Inc. (the “Company”) is a global designer and manufacturer of highly engineered electrical and electronic components, modules and systems for the automotive, commercial, off-highway, motorcycle and agricultural vehicle markets. Our products and systems are critical elements in the management of mechanical and electrical systems to improve overall vehicle performance, convenience and monitoring in areas such as emissions control, fuel efficiency, safety, security and intelligence. Our extensive footprint encompasses 24 locations in 12 countries and enables us to supply global and regional automotive, commercial, off-highway, motorcycle, agricultural and other vehicle markets.

Our custom-engineered products and systems are used to activate equipment and accessories, monitor and display vehicle performance and control, distribute electrical power and signals and provide vehicle security and convenience. Our product offerings consist of actuators, sensors, switches and connectors, driver information systems, camera-based vision systems, connectivity and compliance products, electronic control units, vehicle tracking devices and monitoring services, vehicle security alarms and convenience accessories, in-vehicle audio and infotainment devices and telematics solutions. We supply the majority of our products, predominantly on a sole-source basis, to many of the world’s leading automotive and commercial vehicle original equipment manufacturers (“OEMs”) and select non-vehicle OEMs, as well as certain automotive and commercial vehicle Tier 1 suppliers. Our customers are increasingly utilizing electronic technology to comply with more stringent regulations (particularly emissions and safety) and to meet end-user demand for improved vehicle performance and greater convenience. As a result of this trend, per-vehicle electronic content has been increasing. Our technology and our partnership-oriented approach to product design and development enables us to develop next-generation products for this trend.

On April 1, 2019, the Company entered into an Asset Purchase Agreement by and among the Company’s wholly owned subsidiary, Stoneridge Control Devices, Inc. (“SCD”), and with Standard Motor Products, Inc. (“SMP”). On the same day, the Company sold to SMP, product lines and assets related to certain non-core switches and connectors (the “Non-core Products”). The products related to the Non-core Products were manufactured in Juarez, Mexico and Canton, Massachusetts, and include ball switches, ignition switches, rotary switches, courtesy lamps, toggle switches, headlamp switches and other related components. See Note 2 to the consolidated financial statement for additional details regarding the disposal of Non-core Products.

On January 31, 2017, the Company acquired Exploitiemaatschappij Berghaaf B.V. (“Orlaco”), an electronics business which designs, manufactures and sells camera-based vision systems, monitors and related products. The acquisition was accounted for as a business combination, and accordingly, the Company’s consolidated financial statements herein include the results of Orlaco from the acquisition date to December 31, 2019. See Note 2 to the consolidated financial statements for additional details regarding the Orlaco acquisition.

The Company had a 74% controlling interest in PST Eletronica Ltda. (“Stoneridge Brazil”, also referred to as “PST” in prior filings) from December 31, 2011 through May 15, 2017. On May 16, 2017, the Company acquired the remaining 26% noncontrolling interest in Stoneridge Brazil, which was accounted for as an equity transaction. As such, Stoneridge Brazil is now a wholly owned subsidiary. See Note 4 to the consolidated financial statements for additional details regarding the acquisition of Stoneridge Brazil’s noncontrolling interest.

Beginning with the divestiture of our wiring business in 2014, we accelerated a shift in our product portfolio towards smart products, or those products which contain embedded electronics or logic. While the wiring business was our largest single business, based on revenues and employees, and the business that the Company was founded on, it was largely a commodity that did not provide a technology platform to drive our expected future growth. In addition to the divestiture of the wiring business, we deployed capital in 2017 to make strategic investments including the acquisition of Orlaco, our partner on the development of MirrorEye, our camera-based vision system, and the acquisition of 100 percent of our Stoneridge Brazil business. In 2019, the Company sold the Non-core Products business to SMP to further align with our strategic plan. These activities have acted

as a catalyst for the advancement of our smart product portfolio, increasing our smart content from just over 50 percent of our sales in 2014 to almost 68% of our sales in 2019. Our product portfolio shift focuses on the megatrends driving the transportation industry.

Segments and Products

We conduct our business in three reportable business segments which are the same as our operating segments: Control Devices, Electronics and Stoneridge Brazil.

Control Devices. Our Control Devices segment designs and manufactures products that monitor, measure or activate specific functions within a vehicle. This segment includes product lines such as actuators, sensors, switches and connectors. Actuator products enable OEMs to deploy power functions in a vehicle and can be designed to integrate switching and control functions including our park and shift by wire products. Sensor products are employed in major vehicle systems such as the emissions, safety, powertrain, braking, climate control, steering and suspension systems. Switches and connectors transmit signals that activate specific functions. Our switch and connector technology is principally used in two capacities, user-activated and hidden. User-activated switches are used by a vehicle's operator or passengers to manually activate in-vehicle accessories. Hidden switches are not typically visible to vehicle operators or passengers and are engaged to activate or deactivate selected functions as part of normal vehicle operations. We sell these products principally to the automotive market. To a lesser extent, we also sell these products to the commercial vehicle and agricultural markets.

Electronics. Our Electronics segment designs and manufactures driver information systems, camera-based vision systems, connectivity and compliance products and electronic control units. Driver information systems and connectivity and compliance products collect, store and display vehicle information such as speed, pressure, maintenance data, trip information, operator performance, temperature, distance traveled and driver messages related to vehicle performance. Camera-based vision products provide enhanced vehicle visibility to drivers. Electronic control units regulate, coordinate, monitor and direct the operation of the electrical system within a vehicle. These products are sold principally to the commercial vehicle market through both the OEM and aftermarket channels. In addition, camera-based vision systems are sold principally to the off-highway vehicle market.

Stoneridge Brazil. Our Stoneridge Brazil segment, formerly referred to as "PST", primarily serves the South American market and specializes in the design, manufacture and sale of vehicle tracking devices and monitoring services, vehicle security alarms and convenience accessories, in-vehicle audio and infotainment devices and telematics solutions primarily for the automotive and motorcycle markets. This segment includes product lines such as vehicle monitoring and tracking devices, security alarms, convenience applications such as parking sensors and review view cameras, audio and infotainment systems and telematics products used for fleet management. These products improve the performance, safety and convenience features of our customers' vehicles. Stoneridge Brazil sells its products through the aftermarket distribution channel, to factory authorized dealer installers, also referred to as original equipment services, direct to OEMs and through mass merchandisers. In addition, monitoring services and tracking devices are sold directly to corporate and individual customers.

The following table sets forth the periods indicated, the percentage of products by segment for the years ended December 31:

Segment	Product Category	2019	2018	2017
Control Devices	Actuators, sensors, switches and connectors	52%	51%	54%
Electronics	Driver information systems, camera-based vision systems, connectivity and compliance products and electronic control units	40	40	34
Stoneridge Brazil	Vehicle tracking devices and monitoring services, vehicle security alarms and convenience accessories, in-vehicle audio and infotainment devices and telematics solutions	8	9	12

Our products and systems are sold to numerous OEM and Tier 1 customers, as well as aftermarket distributors and mass merchandisers, for use on many different vehicle platforms. We supply multiple parts to many of our

principal OEM and Tier 1 customers under requirements contracts for a particular vehicle model. These contracts range in duration from one year to the production life of the model, which commonly extends for three to seven years.

The following table sets forth for the periods indicated, the percentage of net sales derived from our principal end markets for the years ended December 31:

Principal End Markets	2019	2018	2017
Automotive	41%	41%	46%
Commercial vehicle	33	33	29
Off-highway and other	18	17	13
Aftermarket distributors, mass merchandisers and monitoring services	8	9	12

For further information related to our reportable segments and financial information about geographic areas, see Note 14 to the consolidated financial statements.

Production Materials

The principal production materials used in the Company's manufacturing process are molded plastic components and resins, copper, steel, precious metals and certain electrical components such as printed circuit boards, semiconductors, microprocessors, memory devices, resistors, capacitors, fuses, relays, infotainment devices and cameras. We purchase production materials pursuant to both annual contract and spot purchasing methods. Such materials are available from multiple sources, but we generally establish collaborative relationships with a qualified supplier for each of our key production materials in order to lower costs and enhance service and quality. As global demand for our production materials increases, we may have difficulties obtaining adequate production materials from our suppliers to satisfy our customers. Any extended period of time for which we cannot obtain adequate production material or which we experience an increase in the price of production material would materially affect our results of operations and financial condition.

Patents, Trademarks and Intellectual Property

We maintain and have pending various U.S. and foreign patents, trademarks and other rights to intellectual property relating to the reportable segments of our business, which we believe are appropriate to protect the Company's interests in existing products, new inventions, manufacturing processes and product developments. We do not believe any single patent is material to our business, nor would the expiration or invalidity of any patent have a material adverse effect on our business or ability to compete.

Industry Cyclicity and Seasonality

The markets for products in each of our reportable segments have been cyclical. Because these products are used principally in the production of vehicles for the automotive, commercial, off-highway, motorcycle and agricultural vehicle markets, revenues and therefore results of operations, are significantly dependent on the general state of the economy and other factors, like the impact of environmental regulations on our customers and end market consumers, which affect these markets. A significant decline in automotive, commercial, off-highway, motorcycle and agricultural vehicle production of our principal customers could adversely impact the Company. Our Control Devices and Electronics and segments are typically not affected by seasonality, however the demand for our Stoneridge Brazil segment consumer products is typically higher in the second half of the year, the fourth quarter in particular.

Customers

We have several customers which account for a significant percentage of our sales. The loss of any significant portion of our sales to these customers, or the loss of a significant customer, would have a material adverse impact on our financial condition and results of operations. We supply numerous different products to each of our principal customers. Contracts with several of our customers provide for supplying their requirements for a particular model, rather than for manufacturing a specific quantity of products. Such contracts range from one year to the life of the model, which is generally three to seven years. These contracts are subject to potential

renegotiation from time to time, which may affect product pricing and generally may be terminated by our customers at any time. Therefore, the loss of a contract for a major model or a significant decrease in demand for certain key models or group of related models sold by any of our major customers would have a material adverse impact on the Company. We may enter into contracts to supply products, the introduction of which may then be delayed or cancelled. We also compete to supply products for successor models, and are therefore subject to the risk that the customer will not select the Company to produce products on any such model, which could have a material adverse impact on our financial condition and results of operations.

Due to the competitive nature of the markets we serve, we face pricing pressures from our customers in the ordinary course of business. In response to these pricing pressures we have been able to effectively manage our production costs by the combination of lowering certain costs and limiting the increase of others, the net impact of which has not been material. However, if we are unable to effectively manage production costs in the future to mitigate future pricing pressures, our results of operations would be adversely affected.

The following table presents our principal customers, as a percentage of net sales:

Year ended December 31	2019	2018	2017
Ford Motor Company	11%	12%	14%
Volvo	8	8	6
Daimler	6	6	6
MAN	5	5	3
American Axle	5	4	4
Other	65	65	67

Backlog

The Company typically enters into customer agreements at the beginning of a vehicle life cycle with the intent to fulfill customer-purchasing requirements for the entire vehicle production life cycle. The vehicle life cycle usually includes the two to four year pre-production period and production for a term covering the life of such vehicle model or platform, generally between three to seven years, although there is no guarantee that this will occur. Our customers make no firm commitments regarding volume and may terminate these agreements or orders at any time. The Company's estimated sourced future sales may also be impacted by various assumptions, including new program vehicle production levels, customer price reductions, foreign currency exchange rates and program launch timing. The Company's customer agreements may be terminated by customers at any time and, accordingly, estimated sourced future sales information does not represent firm orders or firm commitments. The Company defines backlog as the estimated cumulative awarded sales for the next five years (or "estimated sourced future sales"). The Company's estimated sourced future sales was \$3.2 billion as of December 31, 2019, compared to \$3.4 billion as of December 31, 2018. Sales related to the disposal of the Control Devices Non-core Products business are excluded from our estimated sourced future sales as of December 31, 2019.

Competition

The markets for our products in our reportable segments are highly competitive. We compete based on technological innovation, price, quality, performance, service and delivery. We compete for new business both at the beginning of the development of new models and upon the redesign of existing models for OEM customers. New model development generally begins two to five years before the marketing of such models to the public. Once a supplier has been selected to provide parts for a new program, an OEM customer will usually continue to purchase those parts from the selected supplier for the life of the program, although not necessarily for any model redesigns. We compete for aftermarket and mass merchandiser sales based on price, product functionality, quality and service.

Our diversity in products creates a wide range of competitors, which vary depending on both market and geographic location. We compete based on strong customer relations and a fast and flexible organization that develops technically effective solutions at or below target price. We compete against the following companies:

Control Devices. Our primary competitors include Aisin, American Axle and Manufacturing, BorgWarner, Bosch, Continental, Dana Incorporated, Denso Corporation, Dura Automotive, EFI Automotive, Ficosa Corporation, GHSP, GKN Automotive, Kongsberg Automotive, Nidec and ZF Friedrichshafen.

Electronics. Our primary competitors include Actia Group, Aptiv, Bosch, Continental, Delphi Technologies, Hella KGaA Hueck & Co., Magneti Marelli, Mekra Lang, Valeo, Visteon and ZF Frierichshafen.

Stoneridge Brazil. Our primary competitors include Autotrak, Bosch, CalAmp, Car System, Continental, Dalgas Precision Equipment, Harman Automotive, Hinor, Ituran, Kostal, Magneti Marelli, Maxtrack, MultiLaser, Onix, Pioneer Corporation, Quelink, Sascar, SOFT Automotiva, Suntech, Taramps, Tury and Visteon.

Product Development

Our research and development efforts for our reportable segments are largely product design and development oriented and consist primarily of applying known technologies to customer requests. We work closely with our customers to solve customer requests using innovative approaches. The majority of our development expenses are related to customer-sponsored programs where we are involved in designing custom-engineered solutions for specific applications or for next generation technology. To further our vehicle platform penetration, we have also developed collaborative relationships with the design and engineering departments of key customers. These collaborative efforts have resulted in the development of new and complimentary products and the enhancement of existing products.

While our engineering and product development departments are organized by market, our segments interact and collaborate on new products. The product development operations are complimented by technology groups in Barneveld, Netherlands; Campinas, Brazil; Juarez, Mexico; Lexington, Ohio; Novi, Michigan; Pune, India and Stockholm, Sweden.

We have invested, and will continue to invest heavily in technology to develop new products for our customers. Product development costs, other than capitalized software development costs, incurred in connection with the development of new products and manufacturing methods, to the extent not recoverable from the customer, are expensed as incurred. Such costs amounted to approximately \$52.2 million, \$51.1 million, and \$48.9 million for 2019, 2018, and 2017, respectively, or 6.3%, 5.9%, and 5.9% of net sales for these periods.

We will continue to prioritize investment spending toward the design and development of new products over sustaining existing product programs for specific customers, which allows us to sell our products to multiple customers. The typical product development process takes three to seven years to show tangible results. As part of our effort to evaluate our investment spending, we review our current product portfolio and adjust our spending to either accelerate or eliminate our investment in these products based on our position in the market and the potential of the market and product.

Environmental and Other Regulations

Our operations are subject to various federal, state, local and foreign laws and regulations governing, among other things, emissions to air, discharge to water and the generation, handling, storage, transportation, treatment and disposal of waste and other materials. We believe that our business, operations and facilities have been and are being operated in compliance, in all material respects, with applicable environmental and health and safety laws and regulations, many of which provide for substantial fines and criminal sanctions for violations.

Employees

As of December 31, 2019, we had approximately 4,700 employees, approximately 78% of whom were located outside of the United States. Although we have no collective bargaining agreements covering U.S. employees, a significant number of employees located in Brazil, China, Estonia, Mexico, Netherlands, Sweden and the United Kingdom either (i) are represented by a union and are covered by a collective bargaining agreement, or (ii) are covered by a work council or other employment arrangements required by law. We believe that relations with our employees are good.

Joint Ventures

We form joint ventures in various global markets in order to achieve several strategic objectives including (i) diversifying our business by expanding in high-growth regions, (ii) employing complementary design processes, growth technologies and intellectual capital, and (iii) realizing cost savings from combined sourcing.

We have a 49% noncontrolling equity interest in Minda Stoneridge Instruments Ltd. (“MSIL”). Based in India, MSIL manufactures electromechanical/electronic instrumentation equipment and sensors primarily for the automotive, motorcycle and commercial vehicle markets. We leverage our investment in MSIL by sharing our knowledge and expertise in electrical components and systems and expanding MSIL’s product offering through the joint development of our products designed for the market in India.

Information About Our Executive Officers

Each executive officer of the Company serves the Board of Directors at its pleasure. The Board of Directors appoints corporate officers annually. The following table sets forth the names, ages, and positions of the executive officers of the Company:

Name	Age	Position
Jonathan B. DeGaynor	53	President, Chief Executive Officer and Director
Robert R. Krakowiak	49	Executive Vice President, Chief Financial Officer and Treasurer
Susan Benedict	53	Chief Human Resources Officer and Assistant General Counsel
Laurent Borne	44	President of the Electronics Division and Chief Technology Officer
Thomas M. Dono, Jr.	47	Chief Legal Officer and Secretary
Caetano R. Ferraiolo	52	President of the PST Electronics Division
Robert J. Hartman Jr.	53	Chief Accounting Officer
Kevin Heigel	60	Vice President of Operations
Daniel M. Kusiak	50	Chief Procurement Officer
Robert Willig	57	President of the Control Devices Division

Jonathan B. DeGaynor, President, Chief Executive Officer and Director. Mr. DeGaynor was appointed as President and Chief Executive Officer in March 2015. He has served as a director since May 2015. Prior to joining Stoneridge, Mr. DeGaynor served as the Vice President of Strategic Planning and Innovation of Guardian Industries Corp. (“Guardian”), from October 2014 until March 2015. Mr. DeGaynor served as Vice President of Business Development, Managing Director Asia for SRG Global, Inc., a Guardian company, from 2008 through September 2014. Mr. DeGaynor served as Chief Operating Officer, International for Autocam Corporation from 2005 to 2008. Prior to that, Mr. DeGaynor held positions of increasing responsibility with Delphi Corporation from 1993 to 2005.

Robert R. Krakowiak, Executive Vice President, Chief Financial Officer and Treasurer. Mr. Krakowiak was appointed as Executive Vice President in October 2018 and Chief Financial Officer and Treasurer in August 2016. Prior to joining Stoneridge, Mr. Krakowiak served as Vice President, Treasurer and Investor Relations at Visteon Corporation from 2012 until August 2016. Prior to that, Mr. Krakowiak held the following positions at Owens Corning: from 2009 until 2012, Vice President of Finance (Composite Solutions Business); from 2008 until 2009, Vice President—Corporate Financial Planning and Analysis; from 2006 until 2008, Vice President and Controller (Roofing and Asphalt); and from 2005 until 2006, Assistant Treasurer.

Susan Benedict, Chief Human Resources Officer and Assistant General Counsel. Ms. Benedict was appointed chief human resources officer and assistant general counsel — labor and employment (CHRO) in June 2019. Ms. Benedict previously served as Stoneridge’s Director of Legal since November 2017. Prior to Stoneridge, Ms. Benedict served as Senior Counsel for Koch Industries in October 2017 and Corporate Counsel for Guardian Industries from December 2012 to September 2017.

Laurent Borne, President of the Electronics Division and Chief Technology Officer. Mr. Borne was appointed as President of the Electronics Division in January 2019. Mr. Borne joined the Company in August 2018 and has been serving as the Company’s Chief Technology Officer and will continue to serve in this role. Prior to joining Stoneridge, Mr. Borne served as Vice President of Product Development at Whirlpool Corporation from 2014 until August 2018.

Thomas M. Dono, Jr., Chief Legal Officer and Secretary. Mr. Dono was appointed as Chief Legal Officer and Secretary in January 2018. Prior to joining Stoneridge, Mr. Dono served as Executive Vice President, General Counsel and Corporate Secretary at Metaldyne Performance Group, Inc. from July 2016 to April 2017. Prior to

that, Mr. Dono served as Senior Vice President, Legal Affairs, General Counsel and Corporate Secretary at Key Safety Systems, Inc. from May 2009 to July 2016.

Caetano R. Ferraiolo, President of the PST Electronics Division. Mr. Ferraiolo was appointed to President of the Stoneridge Brazil Electronics Division in June 2017. Mr. Ferraiolo joined the Company in 2015 and previously served as the Chief Operating Officer of Stoneridge Brazil. From 2010 to 2015 he served as Vice President of Operations for Cannondale Sports Group in Brazil. Prior to that, Mr. Ferraiolo served as Director of European Commercial and Development, Autocam Corporation from 2005 to 2010.

Robert J. Hartman Jr., Chief Accounting Officer. Mr. Hartman was appointed as Chief Accounting Officer and to the role of principal accounting officer in July 2016. Prior to that, Mr. Hartman served as Corporate Controller of the Company since 2006 and prior to that as Stoneridge's Director of Internal Audit from 2003.

Kevin Heigel, Vice President of Operations. Mr. Heigel was appointed Vice President of Operations in January 2020. Prior to that Mr. Heigel had been employed at ALPHA Performance Group, LLC as its Co-Founder and Managing Director from 2009 until December 2019. Prior to that Mr. Heigel was at served in various roles at Delphi last serving as Managing Director, Delphi Electrical Centers from 2006 to 2009.

Daniel M. Kusiak, Chief Procurement Officer. Mr. Kusiak was appointed as Chief Procurement Officer in October 2018. Prior to that, Mr. Kusiak served as Vice President of Global Procurement since he joined Stoneridge in 2015. Prior to that, he served as head of Strategic Business Initiatives at Sypris Technologies, Inc. from 2013. Prior to that, Kusiak was employed at Meritor, Inc. where he held positions of increasing responsibility in the purchasing function over a 10-year tenure.

Robert Willig, President of the Control Devices Division. Mr. Willig was appointed to President of the Control Devices Division in October 2017. Until his employment with the Company, Mr. Willig served as President and Chief Executive Officer of Plasan Carbon Composites from April 2017 to October 2017. From April 2013 to July 2016, he served as President of Driveline Americas, GKN PLC and from September 2010 to April 2013 President of Sinter Americas, GKN, PLC. Prior to that, he served as President of the Power Transmission Division of Tomkins PLC from 2008.

Available Information

We make available, free of charge through our website (www.stoneridge.com), our Annual Report on Form 10-K ("Annual Report"), Quarterly Reports on Form 10-Q, Current Reports on Form 8-K, all amendments to those reports, and other filings with the U.S. Securities and Exchange Commission ("SEC"), as soon as reasonably practicable after they are filed with the SEC. Our Corporate Governance Guidelines, Code of Business Conduct and Ethics, Code of Ethics for Senior Financial Officers, Whistleblower Policy and Procedures and the charters of the Board of Director's Audit, Compensation and Nominating and Corporate Governance Committees are posted on our website as well. Copies of these documents will be available to any shareholder upon request. Requests should be directed in writing to Investor Relations at Stoneridge, Inc., 39675 MacKenzie Drive, Suite 400, Novi, Michigan 48377. The SEC maintains a website (www.sec.gov) that contains reports, proxy and information statements, and other information regarding issuers that file electronically with the SEC, including the Company.

Item 1A. Risk Factors.

Our business is cyclical and a downturn in the automotive, commercial, off-highway, motorcycle and agricultural vehicle markets as well as overall economic conditions could reduce the sales and profitability of our business.

The demand for products is largely dependent on the domestic and foreign production of automotive, commercial, off-highway, motorcycle and agricultural vehicles. The markets for our products have been cyclical, because new vehicle demand is dependent on, among other things, consumer spending and is tied closely to the overall strength of the economy. Because the majority of our products are used principally in the production of vehicles for the automotive, commercial, off-highway, motorcycle and agricultural vehicle markets, our net sales, and therefore our results of operations, are significantly dependent on the general state of the economy and other factors which affect these markets. A decline in automotive, commercial, off-highway, motorcycle or agricultural vehicle production, or a material decline in market share by our significant customers, could adversely affect our results of operations and financial condition.

In 2019, approximately 92% of our net sales were derived from automotive, commercial, off-highway, motorcycle and agricultural vehicle markets while approximately 8% were derived from aftermarket distributors, mass merchandisers and monitoring services markets.

We have foreign currency translation and transaction risks that may materially adversely affect our operating results, financial condition and liquidity.

The financial position and results of operations of our international subsidiaries are initially recorded in various foreign currencies and then translated into U.S. dollars at the applicable exchange rate for inclusion in our consolidated financial statements. The strengthening of the U.S. dollar against these foreign currencies ordinarily has a negative effect on our reported sales and operating margin (and conversely, the weakening of the U.S. dollar against these foreign currencies has a positive impact). The volatility of currency exchange rates may materially adversely affect our operating results.

We are subject to risks related to our international operations.

Approximately 45% of our net sales in 2019 were derived from sales outside of North America. At December 31, 2019, significant concentrations of net assets outside of North America included \$38.3 million in South America and \$207.4 million in Europe and Other. Non-current assets outside of North America accounted for approximately 68% of our non-current assets as of December 31, 2019. International sales and operations are subject to significant risks, including, among others:

- political and economic instability;
- restrictive trade policies;
- economic conditions in local markets;
- currency exchange controls;
- labor unrest;
- difficulty in obtaining distribution support and potentially adverse tax consequences; and
- the imposition of product tariffs and the burden of complying with a wide variety of international and U.S. export laws.

We operate our business on a global basis and policy changes affecting international trade could adversely impact the demand for our products and our competitive position.

We manufacture, sell and service products globally and rely upon a global supply chain to deliver the raw materials, components, systems and parts that we need to manufacture and service our products. Changes in government policies on foreign trade and investment can affect the demand for our products and services, cause non-U.S. customers to shift preferences toward domestically manufactured or branded products and impact the competitive position of our products or prevent us from being able to sell products in certain countries. Our business

benefits from free trade agreements, such as the new United States-Mexico-Canada Agreement and the U.S. trade relationship with China and Brazil and efforts to withdraw from, or substantially modify such agreements or arrangements, in addition to the implementation of more restrictive trade policies, such as more detailed inspections, higher tariffs import or export licensing requirements, exchange controls or new barriers to entry, could adversely impact our production costs, customer demand and our relationships with customers and suppliers. Any of these consequences could have a material adverse effect on our results of operations, financial condition and cash flows.

Our manufacturing and supply chain may be adversely impacted by an extended slowdown of our operations in China due to the recent coronavirus outbreak.

Beginning in December 2019, a novel strain of coronavirus began to impact the population of Wuhan, China. The outbreak uncertainties continue and has resulted in travel disruption and has effected certain companies' operations in China, including some of the Company's suppliers located in China. We rely upon our suppliers to support our business in China, as well as to export components for use in products in other parts of the world. Further government restrictions or health concerns in China, or in other countries in which we operate, could result in supply and labor instability. While the closures and limitations on movement in the region are expected to be temporary, the duration of the production and supply chain disruption, and related financial impact, cannot be estimated at this time. Should the production and distribution closures continue for an extended period of time, the impact on our supply chain in China and globally could have a material adverse effect on our results of operations and cash flows.

The prices that we can charge some of our customers are predetermined and we bear the risk of costs in excess of our estimates, in addition to the risk of adverse effects resulting from general customer demands for cost reductions and quality improvements.

Our supply agreements with some of our customers require us to provide our products at predetermined prices. In some cases, these prices decline over the course of the contract and may require us to meet certain productivity and cost reduction targets. In addition, our customers may require us to share productivity savings in excess of our cost reduction targets. The costs that we incur in fulfilling these contracts may vary substantially from our initial estimates. Unanticipated cost increases or the inability to meet certain cost reduction targets may occur as a result of several factors, including increases in the costs of labor, components or materials. In some cases, we are permitted to pass on to our customers the cost increases associated with specific materials. However, cost overruns that we cannot pass on to our customers could adversely affect our business, financial condition or results of operations.

OEM customers have exerted and continue to exert considerable pressure on component suppliers to reduce costs, improve quality and provide additional design and engineering capabilities and continue to demand and receive price reductions and measurable increases in quality through their use of competitive selection processes, rating programs and various other arrangements. We may be unable to generate sufficient production cost savings in the future to offset required price reductions. Additionally, OEMs have generally required component suppliers to provide more design engineering input at earlier stages of the product development process, the costs of which have, in some cases, been absorbed by the suppliers. Future price reductions, increased quality standards and additional engineering capabilities required by OEMs may reduce our profitability and have a material adverse effect on our business, financial condition or results of operations.

We have limited or no redundancy for certain of our manufacturing facilities, and therefore damage or disruption to those facilities could interrupt our operations, increase our costs of doing business and impair our ability to deliver our products on a timely basis.

If certain of our existing production facilities become incapable of manufacturing products for any reason, we may be unable to meet production requirements, we may lose revenue and we may not be able to maintain our relationships with our customers. Without operation of certain existing production facilities, we may be limited in our ability to deliver products until we restore the manufacturing capability at the particular facility, find an alternative manufacturing facility or arrange an alternative source of supply. We carry business interruption insurance to cover lost revenue and profits in an amount we consider adequate, this insurance does not cover all

possible situations and may be insufficient. Also, our business interruption insurance would not compensate us for the loss of opportunity and potential adverse impact on relations with our existing customers resulting from our inability to produce products for them.

Our business is very competitive and increased competition could reduce our sales and profitability.

The markets for our products are highly competitive. We compete based on technological innovation, price, quality, performance, service and delivery. Many of our competitors are more diversified and have greater financial and other resources than we do. In addition, with respect to certain products, some of our competitors are divisions of our OEM customers. We cannot assure that our business will not be adversely affected by competition or that we will be able to maintain our profitability if the competitive environment changes.

The loss or insolvency of any of our principal customers would adversely affect our future results.

We are dependent on several principal customers for a significant percentage of our net sales. In 2019, our top five customers were Ford Motor Company, Volvo, Daimler, MAN and American Axle which comprised 11%, 8%, 6%, 5% and 5% of our net sales, respectively. In 2019, our top ten customers accounted for 53% of our net sales. The loss of any significant portion of our sales to these customers would have a material adverse effect on our results of operations and financial condition. In addition, we have significant receivable balances related to these customers and other major customers that would be at risk in the event of their bankruptcy.

The discontinuation of, loss of business or lack of commercial success, with respect to a particular vehicle model for which the Company is a significant supplier could reduce the Company's sales and harm its profitability.

Although the Company has purchase orders from many of its customers, these purchase orders generally provide for the supply of a customer's annual requirements for a particular vehicle model and assembly plant, or in some cases, for the supply of a customer's requirements for the life of a particular vehicle model, rather than for the purchase of a specific quantity of products. In addition, it is possible that our customers could elect to manufacture components internally that are currently produced by outside suppliers, such as our Company. The discontinuation of, the loss of business with respect to or a lack of commercial success of a particular vehicle model for which the Company is a significant supplier, could reduce the Company's sales and have a material adverse effect on our business, financial condition or results of operations.

The Company's estimated sourced future sales from awarded programs may not be realized.

The Company typically enters into customer agreements at the beginning of a vehicle life cycle with the intent to fulfill customer-purchasing requirements for the entire vehicle production life cycle. The vehicle life cycle typically included the two to four year pre-production period and production for a term covering the life of such vehicle model or platform, generally between three to seven years, although there is no guarantee that this will occur. The Company's customers make no firm commitments regarding volume and may terminate these agreements or orders at any time. Therefore, these arrangements do not represent firm orders. The Company's estimated sourced future sales from awarded programs, also referred to as backlog, is the estimated remaining cumulative awarded life-of-program sales. Several factors may change forecasted revenue from awarded programs; namely, new business wins, vehicle production volume changes, customer price reductions, foreign currency exchange rates, component take rates by customers and short cycled or cancelled models or platforms.

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 obligate ourselves to deliver new products and services that are subject to our customers' timing, performance and quality standards. Additionally, as a Tier 1 supplier, we must effectively coordinate the activities of numerous suppliers in order for the program launches of our products to be successful. Given the 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 business, financial condition or results of operations.

We are dependent on the availability and price of raw materials and other supplies.

We require substantial amounts of raw materials and other supplies, and substantially all such materials we require are purchased from outside sources. The availability and prices of raw materials and other supplies may be subject to curtailment or change due to, among other things, new laws or regulations, suppliers' allocations to other purchasers and interruptions in production by suppliers, weather emergencies, natural disasters, commercial disputes, acts of terrorism or war, changes in exchange rates and worldwide price levels. If demand for raw materials we require increases, we may have difficulties obtaining adequate raw materials and other supplies from our suppliers to satisfy our customers. At times, we have experienced difficulty obtaining adequate supplies of semiconductors and memory chips. In addition, there have been challenges at times in obtaining timely supply of nylon and resins for our Control Devices segment and audio component parts for our Stoneridge Brazil segment. If we cannot obtain adequate raw materials and other supplies, or if we experience an increase in the price of raw materials and other supplies, our business, financial condition or results of operations could be materially adversely affected.

We use a variety of commodities, including copper, zinc, resins and certain other commodities. Increasing commodity costs could have a negative impact on our results. We have sought at times to alleviate the effect of increasing costs by selectively hedging a portion of our exposure. The inability to effectively hedge any commodity cost increase may have a material adverse effect on our business, financial condition or results of operations.

We must implement and sustain a competitive technological advantage in producing our products to compete effectively.

Our products are subject to changing technology, which could place us at a competitive disadvantage relative to alternative products introduced by competitors. Our success will depend on our ability to continue to meet customers' changing specifications with respect to technological innovation, price, quality, performance, service and delivery by implementing and sustaining competitive technological advances. Our business may, therefore, require significant recurring additional capital expenditures and investment in product development and manufacturing and management information systems. We cannot assure that we will be able to achieve technological advances or introduce new products that may be necessary to remain competitive. Our inability to continuously improve existing products, to develop new products and to achieve technological advances could have a material adverse effect on our business, financial condition or results of operations.

We rely on independent dealers and distributors to sell certain products in the aftermarket sales channel and a disruption to this channel would harm our business.

Because we sell certain products such as security accessories and driver information products to independent dealers and distributors, we are subject to many risks, including risks related to their inventory levels and support for our products. If dealers and distributors do not maintain sufficient inventory levels to meet customer demand, our sales could be negatively impacted.

Our dealer network also sells products offered by our competitors. If our competitors offer our dealers more favorable terms, those dealers may de-emphasize or decline to carry our products. In the future, we may not be able to retain or attract a sufficient number of qualified dealers and distributors. Our inability to maintain successful relationships with dealers and distributors, or to expand our distribution channels, could have a material adverse effect on our business, financial condition or results of operations.

Our Global Positioning Systems ("GPS") products depend upon satellites maintained by the United States Department of Defense. If a significant number of these satellites become inoperable, unavailable or are not replaced, or if the policies of the United States government for the use of the GPS without charge are changed, our business will suffer.

The GPS is a satellite-based navigation and positioning system consisting of a constellation of orbiting satellites. The satellites and their ground control and monitoring stations are maintained and operated by the United

States Department of Defense. The Department of Defense does not currently charge users for access to the satellite signals. These satellites and their ground support systems are complex electronic systems subject to electronic and mechanical failures and possible sabotage.

If a significant number of satellites were to become inoperable, unavailable or are not replaced, it would impair the current utility of our GPS products and the growth of market opportunities. In addition, there can be no assurance that the U.S. government will remain committed to the operation and maintenance of GPS satellites over a long period, or that the policies of the U.S. government that provide for the use of the GPS without charge and without accuracy degradation will remain unchanged. Because of the increasing commercial applications of the GPS, other U.S. government agencies may become involved in the administration or the regulation of the use of GPS signals. Any of the foregoing factors could affect the willingness of buyers of our products to select GPS-based products instead of products based on competing technologies, which could adversely affect our operational revenues, financial condition and results of operation.

We may incur material product liability costs.

We may be subject to product liability claims in the event that the failure of any of our products results in personal injury or death and we cannot assure that we will not experience material product liability losses in the future. We cannot assure that our product liability insurance will be adequate for liabilities ultimately incurred or that it will continue to be available on terms acceptable to us. In addition, if any of our products prove to be defective, we may be required to participate in government-imposed or customer OEM-instituted recalls involving such products. A successful claim brought against us that exceeds available insurance coverage or a requirement to participate in any product recall could have a material adverse effect on our business, financial condition or results of operations.

Increased or unexpected product warranty claims could adversely affect us.

We typically provide our customers a warranty covering workmanship, and in some cases materials, on products we manufacture. Our warranty generally provides that products will be free from defects and adhere to customer specifications. If a product fails to comply with the warranty, we may be obligated or compelled, at our expense, to correct any defect by repairing or replacing the defective product. Our customers are increasingly seeking to hold suppliers responsible for product warranties, which could negatively impact our exposure to these costs. We maintain warranty reserves in an amount based on historical trends of units sold and costs incurred, combined with our current understanding of the status of existing claims. To estimate the warranty reserves, we must forecast the resolution of existing claims, as well as expected future claims on products previously sold. The costs of claims estimated to be due and payable could differ materially from what we may ultimately be required to pay. An increase in the rate of warranty claims or the occurrence of unexpected warranty claims could have a material adverse effect on our customer relations, our business, our financial condition or results of operations.

If we fail to protect our intellectual property rights or maintain our rights to use licensed intellectual property or are found liable for infringing the rights of others, our business could be adversely affected.

Our intellectual property, including our patents, trademarks, copyrights, trade secrets and license agreements, are important in the operation of our businesses, and we rely on the patent, trademark, copyright and trade secret laws of the United States and other countries, as well as nondisclosure agreements, to protect our intellectual property rights. We may not, however, be able to prevent third parties from infringing, misappropriating or otherwise violating our intellectual property, breaching any nondisclosure agreements with us, or independently developing technology that is similar or superior to ours and not covered by our intellectual property. Any of the foregoing could reduce any competitive advantage we have developed, cause us to lose sales or otherwise harm our business. We cannot assure that any intellectual property will provide us with any competitive advantage or will not be challenged, rejected, cancelled, invalidated or declared unenforceable. In the case of pending patent applications, we may not be successful in securing issued patents, or securing patents that provide us with a competitive advantage for our businesses. In addition, our competitors may design products around our patents that avoid infringement and violation of our intellectual property rights.

We cannot be certain that we have rights to all intellectual property currently used in the conduct of our businesses or that we have complied with the terms of agreements by which we acquire such rights, which could expose us to infringement, misappropriation or other claims alleging violations of third party intellectual property rights. Third parties have asserted and may assert or prosecute infringement claims against us in connection with the services and products that we offer, and we may or may not be able to successfully defend these claims. Litigation, either to enforce our intellectual property rights or to defend against claims regarding intellectual property rights of others, could result in substantial costs and a diversion of our resources. Any such claims and resulting litigation could require us to enter into licensing agreements (if available on acceptable terms or at all), pay damages and cease making or selling certain products and could result in a loss of our intellectual property protection. Moreover, we may need to redesign some of our products to avoid future infringement liability. We also may be required to indemnify customers or other third parties at significant expense in connection with such claims and actions. Recently, the Company has seen an increase in customer requests for indemnification in connection with third party patent claims related to connectivity-enabled products. These claims are being made by patent-holders seeking royalties and who may enter into litigation based on patent infringement allegations. Any of the foregoing could have a material adverse effect on our business, financial condition or results of operations.

We may not be able to successfully integrate acquisitions into our business or may otherwise be unable to benefit from pursuing acquisitions.

Failure to successfully identify, complete and/or integrate acquisitions could have a material adverse effect on us. A portion of our growth in sales and earnings has been generated from acquisitions and subsequent improvements in the performance of the businesses acquired. We expect to continue a strategy of selectively identifying and acquiring businesses with complementary products. We cannot assure you that any business acquired by us will be successfully integrated with our operations or prove to be profitable. We could incur substantial indebtedness in connection with our acquisition strategy, which could significantly increase our interest expense.

We anticipate that acquisitions could occur in foreign markets in which we do not currently operate. As a result, the process of integrating acquired operations into our existing operations may result in unforeseen operating difficulties and may require significant financial resources that would otherwise be available for the ongoing development or expansion of existing operations. Any failure to successfully integrate such acquisitions could have a material adverse effect on our business, financial condition or results of operations.

Our debt obligations could limit our flexibility in managing our business and expose us to risks.

As of December 31, 2019, there was \$126.0 million in borrowings outstanding on our revolving credit facility (the "2019 Credit Facility"). In addition, we are permitted under our 2019 Credit Facility to incur additional debt, subject to specified limitations. Our leverage and the terms of our indebtedness may have important consequences including the following:

- we may have difficulty satisfying our obligations with respect to our indebtedness, and if we fail to comply with these requirements, an event of default could result;
- we may be required to dedicate a substantial portion of our cash flow from operations to required payments on indebtedness, thereby reducing the availability of cash flow for working capital, capital expenditures and other general corporate activities;
- covenants relating to our debt may limit our ability to obtain additional financing for working capital, capital expenditures and other general corporate activities;
- covenants relating to our debt may limit our flexibility in planning for, or reacting to, changes in our business and the industry in which we operate; and
- we may be placed at a competitive disadvantage against any less leveraged competitors.

These and other consequences of our leverage and the terms of our indebtedness could have a material adverse effect on our business, financial condition or results of operations.

Covenants in our 2019 Credit Facility may limit our ability to pursue our business strategies.

Our 2019 Credit Facility limits our ability to, among other things:

- incur additional debt and guarantees;
- pay dividends and repurchase our shares;
- make other restricted payments, including investments;
- create liens;
- sell or otherwise dispose of assets, including capital shares of subsidiaries;
- enter into agreements that restrict dividends from subsidiaries;
- consolidate, merge or sell or otherwise dispose of all or substantially all of our assets; and
- substantially change the nature of our business.

The agreement governing our 2019 Credit Facility requires us to maintain a maximum leverage ratio of 3.50 to 1.00, and a minimum interest coverage ratio of 3.50 to 1.00 and places a maximum annual limit on capital expenditures. Our ability to comply with these covenants as well as the negative covenants under the terms of our indebtedness, may be affected by events beyond our control.

A breach of any of the negative covenants under our indebtedness or our inability to comply with the leverage and interest ratio requirements in the 2019 Credit Facility could result in an event of default. If an event of default occurs, the lenders under the 2019 Credit Facility could elect to declare all outstanding borrowings, together with accrued interest and other fees, to be immediately due and payable and terminate any commitments they have to provide further borrowings, and the 2019 Credit Facility lenders could pursue foreclosure and other remedies against us and our assets.

A failure of our information technology (IT) networks and systems, or the inability to successfully implement upgrades to our enterprise resource planning (ERP) systems, could adversely impact our business and operations.

We rely upon information technology networks and systems to process, transmit and store electronic information, and to manage or support a variety of business processes and/or activities. The secure operation of these IT networks and systems and the proper processing and maintenance of this information are critical to our business operations. Despite the implementation of security measures, our IT networks and systems are at risk to damages from computer viruses, unauthorized access, cyber-attack and other similar disruptions. The occurrence of any of these events could compromise our IT networks and systems, and the information stored there could be accessed, publicly disclosed or lost. Any such access, disclosure, loss of information or disruption of our operations could cause significant damage to our reputation, affect our relationships with our customers, suppliers and employees, lead to claims against the Company and ultimately harm our business. We may be required to incur significant costs to protect against damage caused by these disruptions or security breaches in the future.

Also, we continually expand and update our IT networks and systems in response to the changing needs of our business and periodically upgrade our ERP systems. Should our networks or systems not be implemented successfully, or if the systems do not perform in a satisfactory manner once implementation is complete, our business and operations could be disrupted and our results of operations could be adversely affected, including our ability to report accurate and timely financial results.

We may be subject to risks relating to our information technology systems and cybersecurity.

We rely on information technology systems to process, transmit and store electronic information and manage and operate our business. A breach in security could expose us and our customers and suppliers to risks of misuse of confidential information, manipulation and destruction of data, production downtimes and operations disruptions, which in turn could adversely affect our reputation, competitive position, business or results of operations. While we have taken reasonable steps to protect the Company from cybersecurity risks and security breaches (including enhancing our firewall, workstation, email security and network monitoring and alerting

capabilities, and training employees around phishing, malware and other cybersecurity risks), and we have policies and procedures to prevent or limit the impact of systems failures, interruptions, and security breaches, there can be no assurance that such events will not occur or that they will be adequately addressed if they do. Although we rely on commonly used security and processing systems to provide the security and authentication necessary to effect the secure transmission of data, these precautions may not protect our systems from all potential compromises or breaches of security.

Privacy and security concerns relating to the Company's current or future products and services could damage its reputation and deter current and potential users from using them.

We may gain access to sensitive, confidential or personal data or information that is subject to privacy and security laws, regulations and customer-imposed controls. Concerns about our practices with regard to the collection, use, disclosure, or security of personal information or other privacy related matters, even if unfounded, could damage our reputation and adversely affect our financial condition or operating results. Furthermore, regulatory authorities around the world are considering a number of legislative and regulatory proposals concerning cybersecurity and data protection. In addition, the interpretation and application of consumer and data protection laws in the U.S., Europe and elsewhere are often uncertain and in flux. Complying with these various laws could cause the Company to incur substantial costs.

Compliance with environmental and other governmental regulations could be costly and require us to make significant expenditures.

Our operations are subject to various federal, state, local and foreign laws and regulations governing, among other things:

- the discharge of pollutants into the air and water;
- the generation, handling, storage, transportation, treatment, and disposal of waste and other materials;
- the cleanup of contaminated properties; and
- the health and safety of our employees.

Our business, operations and facilities are subject to environmental and health and safety laws and regulations, many of which provide for substantial fines for violations. The operation of our manufacturing facilities entails risks and we cannot assure you that we will not incur material costs or liabilities in connection with these operations. In addition, potentially significant expenditures could be required in order to comply with evolving environmental, health and safety laws, regulations or requirements that may be adopted or imposed in the future. Changes in environmental, health and safety laws, regulations and requirements or other governmental regulations could increase our cost of doing business or adversely affect the demand for our products.

Our annual effective tax rate could be volatile and materially change as a result of changes in the mix of earnings and other factors including changes in the recognition and/or release of valuation allowances against deferred tax assets.

Our overall effective tax rate is computed by dividing our total tax expense (benefit) by our total earnings (loss) before tax. However, tax expense and benefits are not recognized on a global basis, but rather on a jurisdictional or legal entity basis. Losses in certain jurisdictions may not provide a current financial statement tax benefit as a result of the need to maintain a valuation allowance against the associated deferred tax asset. Also, management periodically evaluates the realizability of our deferred tax assets which may result in the recognition and/or release of valuation allowances. As a result, changes in the mix of earnings between jurisdictions and changes in the recognition and/or release of valuation allowances, among other factors, could have a significant effect on our overall effective tax rate.

Item 1B. Unresolved Staff Comments.

None.

Item 2. Properties.

At December 31, 2019, the Company and its joint venture owned or leased ten manufacturing facilities, which together contain approximately 1.1 million square feet of manufacturing space. Of these manufacturing facilities, five are used by our Control Devices reportable segment, five are used by our Electronics reportable segment, one is used by our Stoneridge Brazil reportable segment and two are used by our joint venture, MSIL. The following table provides information regarding our facilities:

Location	Owned/ Leased	Use	Square Footage
Control Devices			
Lexington, Ohio	Owned	Manufacturing/Engineering	219,612
Juarez, Mexico ^(A)	Owned	Manufacturing/Engineering	199,989
Suzhou, China ^(A)	Leased	Manufacturing/Engineering/Sales Office	145,033
Canton, Massachusetts ^(B)	Owned	Manufacturing	132,560
El Paso, Texas ^(A)	Leased	Warehouse	57,000
Lexington, Ohio	Leased	Warehouse	15,000
Novi, Michigan	Leased	Engineering	6,398
Lexington, Ohio	Leased	Warehouse	2,700
Electronics			
Tallinn, Estonia ^(C)	Leased	Manufacturing/Engineering	85,911
Orebro, Sweden	Leased	Manufacturing	77,472
Barneveld, Netherlands	Owned	Manufacturing/Engineering	62,700
Stockholm, Sweden	Leased	Engineering/Division Office	39,600
Dundee, Scotland	Leased	Engineering/Sales Office	34,605
Bayonne, France	Leased	Sales Office/Warehouse	9,655
Jasper, Georgia	Leased	Sales Office/Warehouse	6,250
Ottobrunn, Germany	Leased	Sales Office	1,119
Stoneridge Brazil			
Manaus, Brazil	Owned	Manufacturing	102,247
Campinas, Brazil	Owned	Engineering/Division Office	45,467
Campinas, Brazil	Leased	Sales Office	9,246
Buenos Aires, Argentina	Leased	Sales Office	2,906
Corporate and Other			
Novi, Michigan ^(C)	Leased	Headquarters/Division Office	37,713
Stuttgart, Germany	Leased	Sales Office/Engineering	2,000
Joint Venture			
Pune, India	Owned	Manufacturing/Engineering/Sales Office	80,000
Chennai, India	Leased	Manufacturing	25,629

(A) This facility is also used in the Electronics reportable segment.

(B) This facility will close by March 31, 2020 as a result of a restructuring plan and the consolidation of operations at this site into other Company locations. Refer to Note 13 to the consolidated financial statements.

(C) This facility is also used in the Control Devices reportable segment.

Item 3. Legal Proceedings.

From time to time we are subject to various legal actions and claims incidental to our business, including those arising out of breach of contracts, product warranties, product liability, patent infringement, regulatory matters, and employment-related matters. It is our opinion that the outcome of such matters will not have a material adverse impact on our consolidated financial position, results of operations, or cash flows. However, the final amounts required to resolve these matters could differ materially from our recorded estimates. See Note 11 to the consolidated financial statements.

Item 4. Mine Safety Disclosure.

Not Applicable.

PART II

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

Our shares are listed on the New York Stock Exchange ("NYSE") under the symbol "SRI." As of February 20, 2020, we had 27,408,272 Common Shares, without par value, outstanding which were owned by approximately 160 shareholders of record. This does not include persons whose stock is in nominee or "street name" accounts held by brokers.

The following table presents information with respect to repurchases of Common Shares made by us during the three months ended December 31, 2019. There were 2,725 Common Shares delivered to us by employees as payment for withholding taxes due upon vesting of performance share awards and share unit awards during the three months ended December 31, 2019.

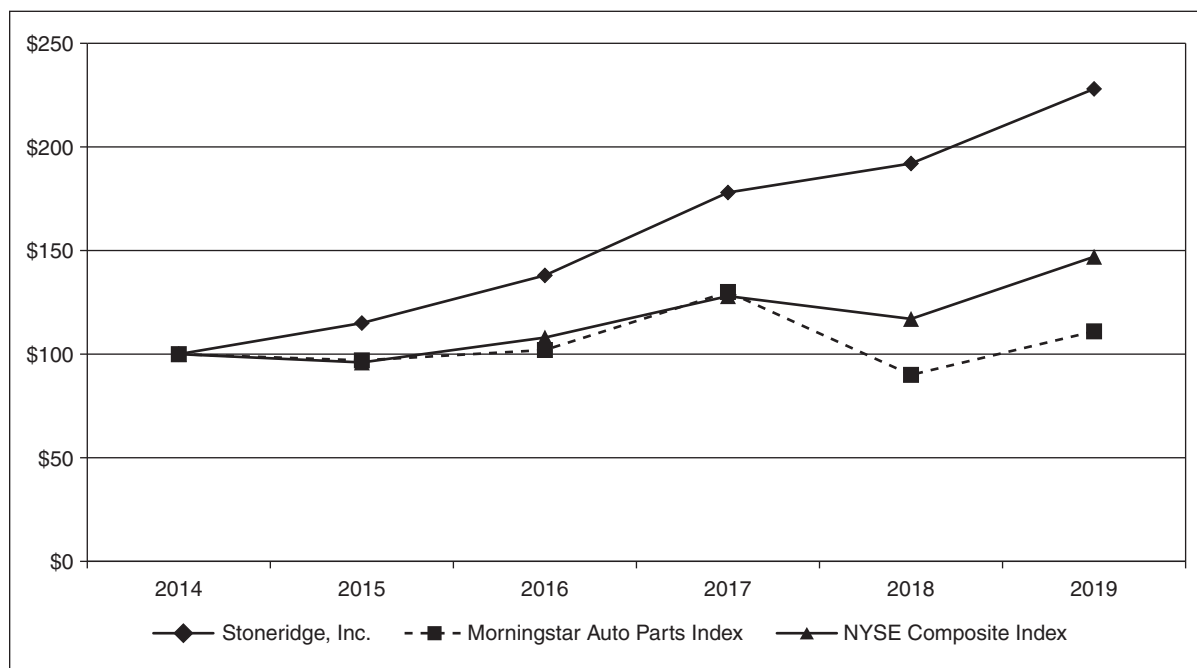
Period	Total number of shares purchased	Average price paid per share	Total number of shares purchased as part of publicly announced plans or programs	Maximum number of shares that may yet be purchased under the plans or programs
10/1/19 – 10/31/19	957	\$30.93	N/A	(1)
11/1/19 – 11/30/19	291	30.14	N/A	(1)
12/1/19 – 12/31/19	1,477	29.36	N/A	(1)
Total	2,725			

- (1) On October 26, 2018 the Company announced a Board approved repurchase program authorizing Stoneridge to repurchase up to \$50.0 million of our Common Shares. Thereafter, on May 7, 2019, we announced that the Company had entered into an accelerated share repurchase agreement with Citibank N.A. to repurchase an aggregate of \$50.0 million of our Common Shares. Pursuant to the accelerated share repurchase agreement in the second quarter of 2019 we made an upfront payment of \$50.0 million and received an initial delivery of 1,349,528 Common Shares which became treasury shares and were recorded as a \$40.0 million reduction to shareholder equity. The remaining \$10.0 million of the initial payment was recorded as a reduction to shareholders' equity as an unsettled forward contract indexed to our Common Shares. The number of shares to be ultimately purchased by the Company will be determined based on the volume weighted-average price of our Common Shares during the terms of the transaction, minus an agreed upon discount between the parties. The program is expected to be completed by May 8, 2020.

Other than the repurchase of Common Shares in May 2019 there were no other repurchases of Common Shares made by us during the years ended December 31, 2019 or 2018, other than the repurchase of Common Shares of 136,644 and 153,397, respectively, to satisfy employee tax withholdings associated with the delivery of Common Shares earned by employees pursuant to equity-base awards under the Company's Long-Term Incentive Plan.

Performance Graph

Set forth below is a line graph comparing the cumulative total return of a hypothetical investment in our Common Shares with the cumulative total return of hypothetical investments in the Morningstar Auto Parts Industry Group Index and the NYSE Composite Index based on the respective market price of each investment as of December 31, 2014, 2015, 2016, 2017, 2018 and 2019 assuming in each case an initial investment of \$100 on December 31, 2014, and reinvestment of dividends.



	2014	2015	2016	2017	2018	2019
Stoneridge, Inc.	\$100	\$115	\$138	\$178	\$192	\$228
Morningstar Auto Parts Index	\$100	\$ 97	\$102	\$130	\$ 90	\$111
NYSE Composite Index	\$100	\$ 96	\$108	\$128	\$117	\$147

For information on “Related Stockholder Matters” required by Item 201(d) of Regulation S-K, refer to Item 12 of this report.

Item 6. Selected Financial Data.

The following table sets forth selected historical financial data and should be read in conjunction with the consolidated financial statements and notes related thereto and other financial information included elsewhere herein. The selected historical data was derived from our consolidated financial statements.

Year ended December 31 (in thousands, except per share data)	2019^(A)	2018	2017	2016	2015
Statement of Operations Data:					
Net sales:					
Control Devices	\$431,560	\$441,297	\$447,528	\$408,132	\$333,010
Electronics ^(B)	335,195	344,727	282,383	205,256	216,544
Stoneridge Brazil	67,534	81,075	94,533	82,589	95,258
Total net sales	\$834,289	\$866,199	\$824,444	\$695,977	\$644,812
Gross profit	\$213,733	\$256,631	\$248,140	\$195,439	\$176,978
Operating income (loss):					
Control Devices	\$ 73,327	\$ 64,191	\$ 72,555	\$ 61,815	\$ 44,690
Electronics ^(B)	25,006	28,236	18,119	14,798	13,784
Stoneridge Brazil	6,539	4,989	2,661	(3,462)	(7,542)
Unallocated Corporate ^(G)	(33,591)	(30,412)	(35,965)	(29,069)	(23,117)
Total operating income	\$ 71,281	\$ 67,004	\$ 57,370	\$ 44,082	\$ 27,815
Equity in earnings of investees	\$ 1,578	\$ 2,038	\$ 1,636	\$ 1,233	\$ 608
Income before income taxes from continuing operations ^(B)	\$ 68,393	\$ 65,058	\$ 52,582	\$ 39,185	\$ 20,230
Income from continuing operations ^{(B)(C)(D)(E)}	\$ 60,291	\$ 53,848	\$ 45,049	\$ 75,574	\$ 20,777
Loss from discontinued operations ^(F)	—	—	—	—	(210)
Net income ^{(B)(C)(D)(E)(F)}	60,291	53,848	45,049	75,574	20,567
Net loss attributable to noncontrolling interest ^(E)	—	—	(130)	(1,887)	(2,207)
Net income attributable to Stoneridge, Inc.^{(B)(C)(D)(E)}	\$ 60,291	\$ 53,848	\$ 45,179	\$ 77,461	\$ 22,774
Basic earnings per share from continuing operations attributable to Stoneridge, Inc.	\$ 2.17	\$ 1.90	\$ 1.61	\$ 2.79	\$ 0.84
Diluted earnings per share from continuing operations attributable to Stoneridge, Inc.	\$ 2.13	\$ 1.85	\$ 1.57	\$ 2.74	\$ 0.82
Basic loss per share attributable to discontinued operations	\$ —	\$ —	\$ —	\$ —	\$ (0.01)
Diluted loss per share attributable to discontinued operations	\$ —	\$ —	\$ —	\$ —	\$ (0.01)
Basic earnings per share attributable to Stoneridge, Inc.	\$ 2.17	\$ 1.90	\$ 1.61	\$ 2.79	\$ 0.83
Diluted earnings per share attributable to Stoneridge, Inc.	\$ 2.13	\$ 1.85	\$ 1.57	\$ 2.74	\$ 0.81
Other Continuing Operations Data:					
Design and development	\$ 52,198	\$ 51,074	\$ 48,877	\$ 40,212	\$ 38,792
Capital expenditures	\$ 35,824	\$ 29,027	\$ 32,170	\$ 24,476	\$ 28,735
Depreciation and amortization ^(H)	\$ 30,859	\$ 29,191	\$ 27,930	\$ 23,258	\$ 22,274
Balance Sheet Data (as of December 31):					
Working capital	\$192,670	\$172,870	\$167,245	\$128,184	\$123,859
Total assets	\$602,209	\$559,519	\$559,037	\$394,529	\$364,252
Long-term debt, net of current portion	\$126,454	\$ 96,983	\$124,852	\$ 75,060	\$104,458
Shareholders' equity	\$289,904	\$283,266	\$244,072	\$192,077	\$106,429

- (A) The amounts for 2019 include the effect of the disposal of Non-core Products which is disclosed in Note 2 to the Company's consolidated financial statements. The Company recognized a gain on disposal of Non-core Products, net of \$33,599 which is included within our Control Devices segment.
- (B) The amounts for 2019, 2018 and 2017 include the Orlaco business as of the acquisition date which is included within our Electronics operating segment and is disclosed in Note 2 to the Company's consolidated financial statements.
- (C) The amounts for 2017 include the impact of the Tax Legislation, a net tax benefit of \$(9,062), consisting of an increase in tax expense of \$6,207 due to the one-time deemed repatriation tax, offset by the favorable impact of the reduced tax rate on the Company's net deferred tax liabilities and other deferred tax adjustments of \$(15,269) related to certain earnings included in the one-time transition tax.
- (D) The Company recorded a release of a valuation allowance associated with its U.S. federal, certain state and foreign deferred tax assets of \$48.5 million for the year ended December 31, 2016.
- (E) The Company recorded a full valuation allowance on Stoneridge Brazil's net deferred tax assets of \$1,237 for the year ended December 31, 2016 of which \$322 was attributable to noncontrolling interest.
- (F) The Company sold its Wiring business during the year ended December 31, 2014. As such, for all periods presented the Company reported this business as discontinued operations in the Company's consolidated financial statements.
- (G) Unallocated corporate expenses include, among other items, accounting/finance, human resources, information technology and legal costs as well as share-based compensation.
- (H) These amounts represent depreciation and amortization on fixed and certain finite-lived intangible assets.

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

We are a global designer and manufacturer of highly engineered electrical and electronic components, modules and systems primarily for the automotive, commercial, off-highway, motorcycle and agricultural vehicle markets.

On January 31, 2017, the Company acquired Exploitiemaatschappij Berghaaf B.V. ("Orlaco"). As such, the Company's consolidated financial statements herein include the results of Orlaco from the date of acquisition. On May 16, 2017, the Company also acquired the remaining 26% noncontrolling interest in Stoneridge Brazil.

The following discussion and analysis should be read in conjunction with the consolidated financial statements and notes related thereto and other financial information included elsewhere herein.

Segments

We are organized by products produced and markets served. Under this structure, our operations have been reported using the following segments:

Control Devices. This segment includes results of operations that manufacture actuators, sensors, switches and connectors.

Electronics. This segment includes results of operations from the production of driver information systems, camera-based vision systems, connectivity and compliance products and electronic control units.

Stoneridge Brazil (formerly referred to as "PST"). This segment includes results of operations that design and manufacture vehicle tracking devices and monitoring services, vehicle security alarms and convenience accessories, in-vehicle audio and infotainment devices and telematics solutions.

Overview

The Company had net income attributable to Stoneridge, Inc. of \$60.3 million, or \$2.13 per diluted share, for the year ended December 31, 2019.

Net income attributable to Stoneridge, Inc. in 2019 increased by \$6.4 million, or \$0.28 per diluted share, from \$53.8 million, or \$1.85 per diluted share, for the year ended December 31, 2018 primarily due to the gain on disposal of Control Devices' Non-core Products of \$33.6 million, or \$0.98 per diluted share, and the recovery of Brazilian indirect taxes of \$6.5 million, or \$0.20 per diluted share, which were offset by decreased sales and gross margin and an increase in restructuring costs of \$9.6 million, or \$0.23 per diluted share, mostly related to our previously announced closure of our Canton facility ("Canton Restructuring"). Pursuant to our Common Share repurchase program, we purchased 1,349,528 outstanding Common Shares on May 8, 2019 which increased earnings per share by reducing diluted weighted-average shares outstanding.

In 2019, our net sales decreased by \$31.9 million, or 3.7%, while our operating income increased \$4.3 million, or 6.4%.

Our Control Devices segment net sales decreased by 2.2% primarily as a result of decreased sales volume in the North American automotive market due to certain program volume reductions related to our legacy shift-by-wire programs, the disposal of Non-core Products and the impact of the labor strike at a major customer that occurred in the second half of 2019. In addition, we experienced decreased sales volume in our North American commercial vehicle and agricultural markets. These decreases were partially offset by sales volume increases in our China automotive, European automotive and European commercial vehicle markets as well as the one-time sale of Non-core Product inventory. Segment gross margin decreased due to lower sales and higher direct material costs as a percentage of sales from the adverse effects of the impact of Non-Core Product sales pursuant to the contract manufacturing agreement at an average gross margin of 5.5%, Canton Restructuring costs and tariffs. Segment operating income increased 14.2% relative to 2018 due to the gain on disposal of Non-core Products offset by Canton Restructuring costs and lower segment margin.

Our Electronics segment net sales decreased by 2.8% primarily due to a decrease in sales volume in our European commercial vehicle market and unfavorable foreign currency translation which was offset by an increase in sales volume in our North American and China commercial vehicle markets as well as increased sales of European and North American off-highway vehicle products. Segment gross margin decreased slightly due to lower sales, unfavorable product mix and higher costs for electronic components. Operating income for the segment decreased 11.4% compared to 2018 due to lower segment margin being partially offset by lower wages, the capitalization of software development costs and the impact of 2018 restructuring costs.

Our Stoneridge Brazil segment net sales decreased by 15.8% due to lower volumes for our Argentina aftermarket channel, audio and alarm products, tracking devices and monitoring service revenues. This decrease was offset by higher volumes for our OEM and factory authorized dealer installer products. Segment gross margin declined due to the reduction in sales volume and adverse sales mix. Operating income increased 31.1% compared to 2018 primarily due to the recovery of Brazilian indirect taxes offsetting the impact of lower sales and gross margin.

In 2019, SG&A expenses were favorably impacted by Stoneridge Brazil's recovery of indirect taxes and Control Device's transitional service cost reimbursement associated with the disposal of its Non-core Products offset by an increase in year-over-year restructuring and business realignment costs.

At December 31, 2019 and 2018, we had cash and cash equivalents of \$69.4 million and \$81.1 million, respectively. Cash and cash equivalents decreased during 2019 primarily due to the repurchase of our Common Shares and lower cash flows from operations as well as the cash payment of the Orlaco earn-out consideration which were offset by proceeds from the disposal of Non-core Products and net borrowings on the 2019 Credit Facility. At December 31, 2019 and 2018 we had \$126.0 million and \$96.0 million, respectively, in borrowings outstanding on our 2019 Credit Facility and the Amended Agreement, as applicable.

Outlook

The Company believes that focusing on products that address industry megatrends will have a positive impact on both our top-line growth and underlying margins.

The North American automotive market is expected to increase from 16.3 million units in 2019 to 16.7 million units in 2020. Based on our product mix and expected certain program volume reductions related to the legacy shift-by-wire programs, the Company expects sales volumes in our Control Devices segment to be consistent with the prior year excluding the impact of the sale of Non-core Products.

We expect full year 2020 European commercial vehicle volumes to decline compared to prior year volumes. The North American commercial vehicle market increased in 2019, however we expect it to decline significantly in 2020.

Our 2019 Stoneridge Brazil segment revenues declined compared to the prior year due to lower volumes in our Brazilian served markets for our audio and alarm products, monitoring products and service revenues. In addition, revenues were adversely affected by the continued decline in the Argentinian economy. In January 2020, the

International Monetary Fund (“IMF”) forecasted the Brazil gross domestic product to grow 2.2% in 2020 and 2.3% in 2021. We expect our served market channels to improve with improvements in the Brazilian economy and expect higher OEM related revenues from new program launches occurring in 2020. Our financial performance in our Stoneridge Brazil segment is also subject to uncertainty from movements in the Brazilian Real and Argentina Peso foreign currencies.

Because of the recent coronavirus outbreak in China, we are currently experiencing operational limitations at our Suzhou, China facility. We continue to be impacted due to national and regional Chinese government declarations requiring closures, quarantines and travel restrictions. Numerous variables and uncertainties related to this outbreak limit our ability to calculate the overall impact on our business; however, we expect that the impact will be material in the first quarter of fiscal year 2020.

Trade actions initiated by the U.S. imposing tariffs on imports have been met with retaliatory tariffs by other countries, adding a level of uncertainty to the global economic environment. These and other actions are likely to impact trade policies with other countries and the overall global economy which could adversely impact our results of operations.

Other Matters

A significant portion of our sales are outside of the United States. These sales are generated by our non-U.S. based operations, and therefore, movements in foreign currency exchange rates can have a significant effect on our results of operations, which are presented in U.S. dollars. A significant portion of our raw materials purchased by our Electronics and Stoneridge Brazil segments are denominated in U.S. dollars, and therefore movements in foreign currency exchange rates can also have a significant effect on our results of operations. The U.S. Dollar strengthened against the Swedish krona, euro, Brazilian real and Argentinian peso in 2019 and 2018, unfavorably impacting our material costs and reported results.

In January 2019, we committed to a restructuring plan that will result in the closure of our Canton, Massachusetts facility (“Canton Facility”) which is expected by March 31, 2020 and the consolidation of manufacturing operations at that site into other Company locations. The estimated costs for the Canton Restructuring include employee severance and termination costs, contract termination costs, professional fees and other related costs such as moving and set-up costs for equipment and costs to restore the engineering function previously located at the Canton Facility. We recognized \$12.5 million of expense as a result of these actions during the year ended December 31, 2019. We expect to incur additional costs related to the Canton Restructuring of \$1.5 million to \$1.9 million through December 2020.

On April 1, 2019, the Company entered into an Asset Purchase Agreement by and among the Company, the Company’s wholly owned subsidiary, Stoneridge Control Devices, Inc. (“SCD”), and Standard Motor Products, Inc. (“SMP”). On the same day pursuant to the APA, in exchange for \$40.0 million (subject to a post-closing inventory adjustment which was a payment to SMP of \$1.6 million) and the assumption of certain liabilities, the Company and SCD sold to SMP product lines and assets related to certain non-core switches and connectors (the “Non-core Products”). On April 1, 2019, the Company and SMP also entered into certain ancillary agreements, including a transition services agreement, a contract manufacturing agreement and a supply agreement, pursuant to which the Company provided and was compensated for certain manufacturing, transitional, administrative and support services to SMP on a short-term basis. The products related to the Non-core Products were manufactured in Juarez, Mexico and Canton, Massachusetts, and include ball switches, ignition switches, rotary switches, courtesy lamps, toggle switches, headlamp switches and other related components. On April 1, 2019, the Company’s Control Devices segment recognized net sales and costs of goods sold of \$4.2 million and \$2.8 million, respectively, for the one-time sale of finished goods inventory and a gain on disposal of \$33.9 million for the sale of fixed assets, intellectual property and customer lists associated with the Non-core Products less transaction costs.

On October 26, 2018 the Company announced a Board approved share repurchase program authorizing Stoneridge to repurchase up to \$50.0 million of our Common Shares. Thereafter, on May 7, 2019, we announced that the Company had entered into an accelerated share repurchase agreement with Citibank N.A. to repurchase an aggregate of \$50.0 million of our Common Shares. Pursuant to the accelerated share repurchase agreement

in the second quarter of 2019 we made an upfront payment of \$50.0 million and received an initial delivery of 1,349,528 Common Shares which became treasury shares and were recorded as a \$40.0 million reduction to shareholder' equity. The remaining \$10.0 million of the initial payment was recorded as a reduction to shareholders' equity as an unsettled forward contract indexed to our Common Shares. The number of shares to be ultimately purchased by the Company will be determined based on the volume weighted-average price of our Common Shares during the terms of the transaction, minus an agreed upon discount between the parties. The program is expected to be completed by May 8, 2020.

In March 2017, the Supreme Court of Brazil issued a decision concluding that a certain state value added tax should not be included in the calculation of federal gross receipts taxes. The decision reduced Stoneridge Brazil's gross receipts tax prospectively and, potentially, retrospectively. In April 2019, the Company received judicial notification that the Superior Judicial Court of Brazil rendered a favorable decision on Stoneridge Brazil's case granting the Company the right to recover, through offset of federal tax liabilities, amounts collected by the government from June 2010 to February 2017. Based on the Company's determination that these tax credits will be used prior to expiration, we recorded a pre-tax benefit of \$6.5 million as a reduction to SG&A expense which is inclusive of related interest income of \$2.4 million, net of applicable professional fees of \$1.0 million in the year ended December 31, 2019. The Company received administrative approval in January 2020 and is now able to offset eligible federal tax with the tax credit. The Brazilian tax authorities have sought clarification before the Supreme Court of Brazil (in a leading case involving another taxpayer) of certain matters that could affect the rights of Brazilian taxpayers regarding these credits, and a hearing is scheduled for April 2020. If the Brazilian tax authorities challenge our rights to these credits, we may become subject to new litigation that could impact the amount ultimately realized by Stoneridge Brazil.

In the fourth quarter of 2018, we undertook restructuring actions for our Electronics segment affecting our European Aftermarket business and China operations. For the years ended December 31, 2019 and 2018, we recognized expense of \$0.6 million and \$3.5 million, respectively, as a result of these actions for related costs and non-cash accelerated depreciation. We expect to incur additional costs related to the Electronics segment restructuring actions of \$0.4 million through 2020.

In addition, we regularly evaluate the performance of our businesses and their cost structures, including personnel, and make necessary changes thereto in order to optimize our results. We also evaluate the required skill sets of our personnel and periodically make strategic changes. As a consequence of these actions, we incur severance related costs which we refer to as business realignment charges.

Because of the competitive nature of the markets we serve, we face pricing pressures from our customers in the ordinary course of business. In response to these pricing pressures we have been able to effectively manage our production costs by the combination of lowering certain costs and limiting the increase of others, the net impact of which to date has not been material. However, if we are unable to effectively manage production costs in the future to mitigate future pricing pressures, our results of operations would be adversely affected.

Year Ended December 31, 2019 Compared To Year Ended December 31, 2018

Consolidated statements of operations as a percentage of net sales are presented in the following table (in thousands):

Year ended December 31,		2019		2018	Dollar increase/ (decrease)
Net sales	\$834,289	100.0%	\$866,199	100.0%	\$(31,910)
Costs and expenses:					
Cost of goods sold	620,556	74.4	609,568	70.4	10,988
Selling, general and administrative	123,853	14.8	138,553	16.0	(14,700)
Gain on disposal of Non-core Products, net	(33,599)	(4.0)	—	—	(33,599)
Design and development	52,198	6.3	51,074	5.9	1,124
Operating income	71,281	8.5	67,004	7.7	4,277
Interest expense, net	4,324	0.5	4,720	0.5	(396)
Equity in earnings of investee	(1,578)	(0.2)	(2,038)	(0.2)	460
Other expense (income), net	142	—	(736)	(0.1)	878
Income before income taxes	68,393	8.2	65,058	7.5	3,335
Provision for income taxes	8,102	1.0	11,210	1.3	(3,108)
Net income	\$ 60,291	7.2%	\$ 53,848	6.2%	\$ 6,443

Net Sales. Net sales for our reportable segments, excluding inter-segment sales are summarized in the following table (in thousands):

Year ended December 31,		2019		2018	Dollar decrease	Percent decrease
Control Devices	\$431,560	51.7%	\$441,297	50.9%	\$ (9,737)	(2.2)%
Electronics	335,195	40.2	344,727	39.8	(9,532)	(2.8)%
Stoneridge Brazil	67,534	8.1	80,175	9.3	(12,641)	(15.8)%
Total net sales	\$834,289	100.0%	\$866,199	100.0%	\$(31,910)	(3.7)%

Our Control Devices segment net sales decreased primarily as a result of decreased sales volume in the North American automotive market of \$28.0 million due to certain program volume reductions related to the legacy shift-by-wire programs, the disposal of Non-core Products and the impact of a fourth quarter labor strike at a major customer. In addition, Control Devices experienced decreased sales volume in our North American commercial vehicle and agriculture markets of \$3.0 million and \$1.7 million, respectively. These decreases were partially offset by sales volume increases in our China automotive, European automotive and European commercial vehicle markets of \$15.3 million, \$4.5 million and \$3.2 million, respectively, as well as the one-time sale of Non-core Product inventory of \$4.2 million.

Our Electronics segment net sales decreased primarily due to a decrease in sales volume in our European commercial vehicle market of \$14.8 million and unfavorable foreign currency translation of \$7.4 million. This decrease was offset by an increase in sales volume in our North American and China commercial vehicle markets of \$7.1 million and \$1.7 million, respectively and increased sales of European and North American off-highway vehicle products of \$3.6 million and \$1.2 million, respectively.

Our Stoneridge Brazil segment net sales decreased due to lower volumes for our Argentina aftermarket channel, audio and alarm products, tracking devices and monitoring service revenues. This decrease was offset by higher volumes for our OEM and factory authorized dealer installer products.

Net sales by geographic location are summarized in the following table (in thousands):

Year ended December 31,		2019		2018	Dollar increase/ (decrease)	Percent increase/ (decrease)
North America	\$457,633	54.8%	\$480,869	55.5%	\$(23,236)	(4.8)%
South America	67,534	8.1	80,175	9.3	(12,641)	(15.8)%
Europe and Other	309,122	37.1	305,155	35.1	3,967	1.3%
Total net sales	\$834,289	100.0%	\$866,199	100.0%	\$(31,910)	(3.7)%

The decrease in North American net sales was primarily attributable to a decrease in sales volume in our North American automotive market of \$28.0 million resulting from certain program volume reductions related to the legacy shift-by-wire programs, the disposal of Non-core Products and the impact of the labor strike at a major customer that occurred in the second half of 2019. In addition, we experienced decreased sales volume in our agriculture market of \$1.8 million. These decreases were partially offset by increased sales volume in our North American commercial vehicle and off-highway markets of \$3.3 million and \$1.2 million, respectively as well as the one-time sale of Non-core Product inventory of \$4.2 million. The decrease in net sales in South America was primarily due to lower volumes for our Argentina aftermarket channel, audio and alarm products, tracking devices and monitoring service revenues. This decrease was offset by higher volumes for our OEM and factory authorized dealer installer products. The increase in net sales in Europe and Other was primarily due to an increase in sales volume in our China automotive, European automotive, European off-highway and China commercial vehicle markets of \$15.3 million, \$4.2 million, \$3.6 million and \$1.7 million, respectively. This increase was offset by a decrease in sales volume of our European commercial vehicle market of \$11.6 million. In addition, Europe and Other sales were unfavorably impacted by foreign currency translation of \$8.0 million.

Cost of Goods Sold and Gross Margin. Cost of goods sold increased compared to 2018 and our gross margin decreased to 25.6% in 2019 compared to 29.6% in 2018. Our material cost as a percentage of net sales increased by 1.6% to 53.1% in 2019 compared to 51.5% in 2018. Direct material costs in our Control Devices segment were negatively impacted by adverse product mix primarily from the impact of Non-core Product sales pursuant to the contract manufacturing agreement at an average margin of 5.5% and higher tariffs while our Electronics and Stoneridge Brazil segments were negatively impacted by adverse product mix and higher costs for electronic components. Overhead as a percentage of net sales increased by 2.0% to 15.9% in 2019 compared to 13.9% in 2018 primarily due to the Canton Restructuring costs of \$7.6 million in our Control Devices segment.

Our Control Devices segment gross margin decreased due to lower sales and higher direct material costs as a percentage of sales, adversely affected by tariffs, Canton Restructuring costs of \$7.6 million and the unfavorable impact of Non-Core Product sales pursuant to the contract manufacturing agreement at an average margin of 5.5%.

Our Electronics segment gross margin decreased primarily due to lower sales, unfavorable product mix and higher costs for electronic components.

Our Stoneridge Brazil segment gross margin decreased due to a reduction in sales volume and adverse sales mix.

Selling, General and Administrative ("SG&A"). SG&A expenses decreased by \$14.7 million compared to 2018 primarily due to a decrease in Stoneridge Brazil SG&A costs from the recovery of Brazilian indirect taxes of \$6.5 million and lower selling costs. Electronics SG&A expense decreased due to lower restructuring expenses of \$2.1 million, a reduction in expense related to the fair value adjustment for the Orlaco earn-out consideration of \$0.4 million and lower wages. Control Devices SG&A costs decreased due to transitional service cost reimbursement associated with the disposal of its Non-core Products and lower wages offset by Canton Restructuring costs of \$1.5 million and higher business realignment costs of \$0.6 million. Unallocated corporate SG&A costs increased primarily due to higher business realignment costs of \$1.0 million, accelerated share-based compensation expense of \$0.7 million associated with a retirement and higher wages offset by lower incentive compensation.

Gain on Disposal of Non-core Products, net. The gain on disposal in 2019 relates to the disposal of Control Devices' Non-core Products.

Design and Development ("D&D"). D&D costs increased by \$1.1 million compared to the prior year due to higher D&D costs in our Control Devices segment due to Canton Restructuring costs of \$3.4 million and in our unallocated corporate segment for the establishment of the chief technology office. This increase was offset by lower D&D costs in our Electronics and Control Devices segments from the capitalization of software development costs of \$2.2 million and \$1.4 million, respectively.

Operating Income. Operating income (loss) is summarized in the following table by reportable segment (in thousands):

Year ended December 31,	2019	2018	Dollar increase/ (decrease)	Percent increase/ (decrease)
Control Devices	\$ 73,326	\$ 64,191	\$ 9,135	14.2%
Electronics	25,007	28,236	(3,229)	(11.4)%
Stoneridge Brazil	6,539	4,989	1,550	31.1%
Unallocated corporate	(33,591)	(30,412)	(3,179)	(10.5)%
Operating income	\$ 71,281	\$ 67,004	\$ 4,277	6.4%

Our Control Devices segment operating income increased primarily due to the gain on disposal of Non-core Products and the favorable impact to D&D from the capitalization of software development costs offset by Canton Restructuring of \$12.5 million and lower sales and margin including the adverse impact of tariffs,

Our Electronics segment operating income decreased primarily due to lower sales, unfavorable mix and higher costs for electronic components partially offset by a decrease in SG&A expense from lower restructuring costs and lower wages, and from lower D&D costs due to capitalization of software development costs.

Our Stoneridge Brazil segment operating income increased primarily due to the recovery of Brazilian indirect taxes, lower selling costs offsetting the impact of lower sales and gross margin.

Our unallocated corporate operating loss increased primarily due to higher SG&A costs from increase in business realignment costs of \$1.0 million, accelerated share-based compensation expense associated with a retirement of eligible employees of \$0.7 million, higher wages offset by lower incentive compensation. In addition, D&D expenses increased for the establishment of the chief technology office.

Operating income by geographic location is summarized in the following table (in thousands):

Year ended December 31,	2019	2018	Dollar increase/ (decrease)	Percent increase/ (decrease)
North America	\$66,398	\$63,552	\$2,846	4.5%
South America	6,539	4,989	1,550	31.1%
Europe and Other	(1,656)	(1,537)	(119)	(7.7)%
Operating income	\$71,281	\$67,004	\$4,277	6.4%

Our North American operating results increased primarily due to the gain on disposal of Non-core Products and higher sales volume in the North American commercial vehicle and off-highway markets offset by lower sales in our automotive market, Canton Restructuring costs as well as higher SG&A and D&D costs. The increase in operating income in South America was primarily due to lower SG&A from the recovery of Brazilian indirect taxes and lower selling costs and lower overhead costs offsetting lower sales. Our operating results in Europe and Other decreased slightly primarily due to lower gross margin from adverse product mix offset by lower SG&A and D&D costs.

Interest Expense, net. Interest expense, net decreased by \$0.4 million compared to the prior year primarily due to lower interest expense at our Stoneridge Brazil segment from lower outstanding debt offset by the write-off of deferred financing fees as a result of refinancing the 2019 Credit Facility.

Equity in Earnings of Investee. Equity earnings for MSIL were \$1.6 million and \$2.0 million for the years ended December 31, 2019 and 2018, respectively. The decrease compared to the prior period is primarily due to lower gross margin from lower sales volumes in served markets as well as unfavorable changes in foreign currency exchange rates.

Other Expense (Income), net. We record certain foreign currency transaction and forward currency hedge contract (gains) losses as a component of other expense (income), net on the consolidated statement of operations. Other expense (income), net decreased by \$0.8 million to other expense (income), net of \$0.1 million in 2019 compared to other expense (income), net of (\$0.7) million in 2018 primarily due to lower foreign currency transaction gains in our Electronics segment.

Provision for Income Taxes. We recognized income tax expense of \$8.1 million and \$11.2 million for federal, state and foreign income taxes for 2019 and 2018, respectively. The decrease in tax expense for the year ended December 31, 2019 compared to the same period for 2018 was primarily due to the impact of certain tax incentives, which did not impact 2018. The effective tax rate decreased to 11.8% in 2019 from 17.2% in 2018 primarily due to the impact of certain tax incentives, which did not impact 2018.

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

Consolidated statements of operations as a percentage of net sales are presented in the following table (in thousands):

Year ended December 31,		2018		2017	Dollar increase/ (decrease)
Net sales	\$866,199	100.0%	\$824,444	100.0%	\$41,755
Costs and expenses:					
Cost of goods sold	609,568	70.4	576,304	69.9	33,264
Selling, general and administrative	138,553	16.0	141,893	17.2	(3,340)
Design and development	51,074	5.9	48,877	5.9	2,197
Operating income	67,004	7.7	57,370	7.0	9,634
Interest expense, net	4,720	0.5	5,783	0.7	(1,063)
Equity in earnings of investee	(2,038)	(0.2)	(1,636)	(0.2)	(402)
Other expense (income), net	(736)	(0.1)	641	0.1	(1,377)
Income before income taxes	65,058	7.5	52,582	6.4	12,476
Provision for income taxes	11,210	1.3	7,533	0.9	3,677
Net income	53,848	6.2	45,049	5.5	8,799
Net loss attributable to noncontrolling interest	—	—	(130)	—	130
Net income attributable to Stoneridge, Inc.	\$ 53,848	6.2%	\$ 45,179	5.5%	\$ 8,669

Net Sales. Net sales for our reportable segments, excluding inter-segment sales are summarized in the following table (in thousands):

Year ended December 31,		2018		2017	Dollar increase/ (decrease)	Percent increase/ (decrease)
Control Devices	\$441,297	50.9%	\$447,528	54.3%	\$ (6,231)	(1.4)%
Electronics	344,727	39.8	282,383	34.2	62,344	22.1%
Stoneridge Brazil	80,175	9.3	94,533	11.5	(14,358)	(15.2)%
Total net sales	\$866,199	100.0%	\$824,444	100.0%	\$ 41,755	5.1%

Our Control Devices segment net sales decreased primarily as a result of decreased sales volume in the North American automotive market of \$24.4 million as a result of certain program volume reductions partially offset by an increase in sales volume in our commercial vehicle and China automotive markets of \$15.9 million and \$1.3 million, respectively, and favorable foreign currency translation of \$0.5 million.

Our Electronics segment net sales increased primarily due to an increase in sales volume in our European and North American commercial vehicle products of \$20.2 million and \$19.6 million, respectively, and increased sales of European and North American off-highway vehicle products of \$15.9 million and \$4.6 million, respectively, as well as favorable foreign currency translation of \$1.6 million.

Our Stoneridge Brazil segment net sales decreased primarily due to unfavorable foreign currency translation that decreased sales by \$11.9 million, or 12.6%, as well as lower volumes for our audio products and our Argentina aftermarket channel. This reduction was partially offset by an increase in sales of new products to our factory authorized dealer installers and higher sales of monitoring products and services.

Net sales by geographic location are summarized in the following table (in thousands):

Year ended December 31,	2018		2017		Dollar increase/ (decrease)	Percent increase/ (decrease)
North America	\$480,511	55.5%	\$471,770	57.2%	\$ 8,741	1.9%
South America	80,175	9.3	94,533	11.5	(14,358)	(15.2)%
Europe and Other	305,513	35.2	258,141	31.3	47,372	18.4%
Total net sales	\$866,199	100.0%	\$824,444	100.0%	\$ 41,755	5.1%

The increase in North American net sales was primarily attributable to increased sales volume in our North American commercial vehicle and off-highway markets of \$28.4 million and \$4.6 million, respectively, which was offset by a decrease in sales volume in our North American automotive of \$24.4 million resulting from certain program volume reductions. The decrease in net sales in South America was primarily due to an unfavorable foreign currency translation that decreased sales by \$11.9 million, or 12.6%, as well as lower sales volume for our audio products and our Argentina aftermarket channel partially offset by an increase in sales of new products to our factory authorized dealer installers and higher sales of monitoring products and services. The increase in net sales in Europe and Other was primarily due to the increase in our European commercial vehicle and off-highway markets of \$27.1 million and \$15.9 million, respectively, as well as an increase in sales volume in our China automotive market of \$1.3 million. Additionally, Europe and Other sales were favorably impacted by foreign currency translation of \$2.1 million.

Cost of Goods Sold and Gross Margin. Cost of goods sold increased by 5.8% and our gross margin decreased from 30.1% in 2017 to 29.7%. Our material cost as a percentage of net sales increased by 0.9% to 51.5% during 2018 compared to 50.6% for 2017. The higher direct material costs in our Control Devices segment resulted from the adverse effects of tariffs while our Electronics and Stoneridge Brazil segments were negatively impacted by U.S. denominated material purchases at non-U.S. based operations offset by favorable product mix. Overhead as a percentage of net sales decreased by 0.4% to 13.9% during 2018 compared to 14.3% for 2017.

Our Control Devices segment gross margin decreased slightly due to lower sales and higher direct material costs due to tariffs, partially offset by a decrease in overhead costs primarily from a reduction in warranty costs.

Our Electronics segment gross margin increased primarily due to higher sales offset and favorable product mix offset by the adverse effect of U.S denominated material purchases at non-U.S. based operations.

Our Stoneridge Brazil segment gross margin improved slightly due to a favorable sales mix related to lower sales of audio products that resulted in lower direct material costs as a percentage of sales which was partially offset by lower sales primarily due to unfavorable foreign currency translation.

Selling, General and Administrative ("SG&A"). SG&A expenses decreased by \$3.3 million compared to 2017 primarily due to a decrease in expense for the fair value of the Orlaco and Stoneridge Brazil earn-out consideration of \$4.5 million and \$2.8 million in our Electronics and Stoneridge Brazil segments, respectively, offset by our Electronics segment 2018 restructuring actions for its aftermarket business and China operations of \$2.7 million. Control Devices and Electronics SG&A costs increased due to higher wages and fringe benefits as well as higher direct support charges for procurement support. Stoneridge Brazil SG&A costs decreased during the current period due to lower wage and fringe benefits, professional service costs and selling costs. Unallocated corporate SG&A costs decreased primarily due to higher allocation of direct support costs to operating segments

for procurement and manufacturing support due to the centralization of these activities as well as lower incentive compensation costs which were partially offset by higher professional service fees.

Design and Development ("D&D"). D&D costs increased by \$2.2 million primarily due to higher D&D costs in our Electronics and Control Devices segments related to program launches and investment in development activities. Customer reimbursement for development projects increased \$1.6 million in 2018.

Operating Income. Operating income (loss) is summarized in the following table by reportable segment (in thousands):

Year ended December 31,	2018	2017	Dollar increase/ (decrease)	Percent increase/ (decrease)
Control Devices	\$ 64,191	\$ 72,555	\$ (8,364)	(11.5)%
Electronics	28,236	18,119	10,117	55.8%
Stoneridge Brazil	4,989	2,661	2,328	87.5%
Unallocated corporate	(30,412)	(35,965)	5,553	15.4%
Operating income	\$ 67,004	\$ 57,370	\$ 9,634	16.8%

Our Control Devices segment operating income decreased primarily due to lower sales and higher SG&A and D&D costs partially related to program launches.

Our Electronics segment operating income increased primarily due to higher sales and gross margin partially offset by higher SG&A including restructuring expenses as well as higher D&D related to product launch and development activities.

Our Stoneridge Brazil segment operating income increased primarily due to lower SG&A, including the decrease in expense for the fair value of earn-out consideration of \$2.8 million during 2018, partially offset by a decrease in sales.

Our unallocated corporate operating loss decreased primarily due to higher allocations of direct support costs to operating segments for procurement and manufacturing activities due to the centralization of these activities as well as lower incentive compensation costs which were offset by higher professional service fees.

Operating income by geographic location is summarized in the following table (in thousands):

Year ended December 31,	2018	2017	Dollar increase/ (decrease)	Percent increase/ (decrease)
North America	\$33,219	\$37,937	\$ (4,718)	(12.4)%
South America	4,989	2,661	2,328	87.5%
Europe and Other	28,796	16,772	12,024	71.7%
Operating income	\$67,004	\$57,370	\$ 9,634	16.8%

Our North American operating results decreased primarily due to lower sales volume in the North American automotive market as well as higher D&D costs, which were partially offset by increased sales volume in the commercial vehicle and off-highway markets. The increase in operating income in South America was primarily due to a decrease in expense for the fair value of Stoneridge Brazil earn-out consideration. Our operating results in Europe and Other increased due to higher sales in our European commercial vehicle and off-highway markets which were partially offset by higher SG&A and D&D costs.

Interest Expense, net. Interest expense, net decreased by \$1.1 million compared to the prior year primarily due to lower interest expense at our unallocated corporate and Stoneridge Brazil segments as a result of the decrease in outstanding credit facility and debt balances, respectively, from voluntary principal prepayments of our credit facility.

Equity in Earnings of Investee. Equity earnings for MSIL were \$2.0 million and \$1.6 million for the years ended December 31, 2018 and 2017, respectively. The increase compared to the prior period was due to higher sales which was offset by an unfavorable change in foreign currency exchange rates.

Other Expense (Income), net. We record certain foreign currency transaction and forward currency hedge contract (gains) losses as a component of other expense (income), net on the consolidated statement of operations. Other expense (income), net decreased by \$1.4 million to other income of \$0.7 million in 2018 compared to other expense of \$0.6 million for 2017 primarily due to the favorable impact of foreign currency exchange rates of non-functional currency denominated cash balances in our Electronics segment.

Provision for Income Taxes. We recognized income tax expense of \$11.2 million and \$7.5 million for federal, state and foreign income taxes for 2018 and 2017, respectively. The change in tax expense for the year ended December 31, 2018 compared to the same period for 2017 was predominantly due to the impact of the enactment of the Tax Cuts and Jobs Act ("Tax Legislation") in the United States on December 22, 2017. The change in the effective tax rate to 17.2% in 2018 from 14.3% in 2017, was predominantly due to impact of the Tax Legislation in 2017.

Liquidity and Capital Resources

Summary of Cash Flows for the years ended December 31, 2019 and 2018 (in thousands):

Years ended December 31,	2019	2018	Dollar increase (decrease)
Net cash provided by (used for):			
Operating activities	\$ 24,505	\$ 80,772	\$(56,267)
Investing activities	(6,299)	(27,950)	21,651
Financing activities	(28,258)	(33,870)	5,612
Effect of exchange rate changes on cash and cash equivalents	(1,637)	(3,863)	2,226
Net change in cash and cash equivalents	\$(11,689)	\$ 15,089	\$(26,778)

Cash provided by operating activities decreased compared to 2018 primarily due to the lower net income excluding the gain on disposal related to Control Devices' Non-core Products and a higher use of cash to fund working capital levels. This decrease includes a portion of the cash payment of the Orlaco earn-out consideration obligation of \$5.0 million paid during 2019. The higher working capital levels mostly relate to higher inventory levels from bank builds attributable to the Canton Restructuring activities and the disposal of Non-core Products as well as the delay of a product launch in our Electronics segment. Our receivable terms have remained consistent between 2019 and 2018 however we have experienced a timing related decline in 2019 year-end collection rates.

Net cash provided by investing activities increased compared to 2018 due to the cash proceeds received from the disposal of Control Devices' Non-core Products offset by higher capital expenditures, 2019 capitalized software development costs, 2019 investments in the Autotech venture capital fund and insurance proceeds received in 2018.

Net cash used for financing activities increased compared to the prior year primarily due to the repurchase of Common Shares during the second quarter of 2019 and the cash payment of Orlaco earn-out consideration offset by higher net Credit Facility borrowings.

Summary of Cash Flows for the years ended December 31, 2018 and 2017 (in thousands):

Years ended December 31,	2018	2017
Net cash provided by (used for):		
Operating activities	\$ 80,772	\$ 78,908
Investing activities	(27,950)	(108,640)
Financing activities	(33,870)	40,785
Effect of exchange rate changes on cash and cash equivalents	(3,863)	4,561
Net change in cash and cash equivalents	\$ 15,089	\$ 15,614

Cash provided by operating activities increased compared to 2017 primarily due to an increase in net income and lower cash used to support working capital levels offset by cash outflows for income taxes and incentive compensation. Our receivable terms and collections rates have remained consistent between periods presented.

Net cash used for investing activities decreased primarily due to the business acquisition of Orlaco and insurance proceeds received in 2017 as well as lower capital expenditures in 2018.

Net cash provided by (used for) financing activities decreased primarily due to the significant decrease in borrowing activity on our Credit Facility as we borrowed \$77.3 million to fund the acquisition of the Orlaco business in the first quarter of 2017 and an increase in voluntary principal repayments of our Credit Facility and Stoneridge Brazil debt obligations in 2018.

Summary of Future Cash Flows

The following table summarizes our future cash outflows resulting from financial contracts and commitments, as of December 31, 2019 (in thousands):

	Total	Less than 1 year	2 – 3 years	4 – 5 years	After 5 years
Credit Facility	\$126,000	\$ —	\$ —	\$126,000	\$ —
Debt	3,126	3,126	—	—	—
Interest payments ^(A)	15,719	3,628	7,065	5,026	—
Operating leases	27,432	5,238	8,206	6,660	7,328
Total contractual obligations^(B)	\$172,277	\$11,992	\$15,271	\$137,686	\$7,328

(A) Includes estimated payments under the Company's 2019 Credit Facility and other debt obligations using the most current interest rate and principal balance information available at December 31, 2019, extended through the end of the term.

(B) In December 2018, the Company entered into an agreement to make a \$10.0 million investment in a fund managed by Autotech Ventures ("Autotech"), a venture capital firm focused on ground transportation technology. The Company's \$10.0 million investment in the Autotech fund will be contributed over the expected ten year life of the fund. The Company has contributed \$2.1 million to the Autotech fund since December 2018.

Management will continue to focus on efficiently managing its weighted-average cost of capital and believes that cash flows from operations and the availability of funds from our 2019 Credit Facility provides sufficient liquidity to meet our future growth and operating needs.

As outlined in Note 5 to our consolidated financial statements, the 2019 Credit Facility increased our borrowing capacity by \$100.0 million and permits borrowing up to a maximum level of \$400.0 million which includes an accordion feature which allows the Company to increase the availability by up to \$150.0 million upon the satisfaction of certain conditions. This variable rate facility provides the flexibility to refinance other outstanding debt or finance acquisitions through June 2024. The 2019 Credit Facility contains certain financial covenants that require the Company to maintain less than a maximum leverage ratio and more than a minimum interest coverage ratio. The 2019 Credit Facility also contains affirmative and negative covenants and events of default that are customary for credit arrangements of this type including covenants which place restrictions and/or limitations on the Company's ability to borrow money, make capital expenditures and pay dividends. The 2019 Credit Facility had an outstanding balance of \$126.0 million at December 31, 2019. The Company was in compliance with all covenants at December 31, 2019. The covenants included in 2019 Credit Facility to date have not and are not expected to limit our financing flexibility. The Company expects to make additional repayments on the Credit Facility when cash exceeds the amount needed for operations.

Stoneridge Brazil maintains several short-term obligations and long-term loans used for working capital purposes. At December 31, 2019, there was \$1.0 million outstanding on the Stoneridge Brazil term loans. The Stoneridge Brazil loans at December 31, 2019 mature as follows: \$0.5 million in 2020 and \$0.5 million in 2021.

In December 2019, Stoneridge Brazil established an overdraft credit line which allows overdrafts on Stoneridge Brazil's bank account up to a maximum level of Brazilian real 5.0 million, or \$1.2 million, at December 31, 2019. There was no balance outstanding on the overdraft credit line as of December 31, 2019.

The Company's wholly-owned subsidiary located in Stockholm, Sweden, has an overdraft credit line which allows overdrafts on the subsidiary's bank account up to a maximum level of 20.0 million Swedish krona, or \$2.1 million, at December 31, 2019. At December 31, 2019, there was no balance outstanding on this overdraft credit line.

The Company's wholly-owned subsidiary located in Suzhou, China, has two credit lines which allow up to a maximum borrowing level of 60.0 million Chinese yuan, or \$8.6 million at December 31, 2019. At December 31, 2019 there was \$2.2 million in borrowings outstanding recorded within current portion of debt. At December 31, 2018, there was no balance outstanding on these credit lines.

Although the Company's notes and credit facilities contain various covenants, the Company has not experienced a violation which would limit or preclude their use or accelerate the maturity and does not expect these covenants to restrict our financing flexibility. The Company has been and expects to continue to remain in compliance with these covenants during the term of the credit facilities and loans.

On October 26, 2018 the Company announced a Board approved share repurchase program authorizing Stoneridge to repurchase up to \$50.0 million of our Common Shares. Thereafter, on May 7, 2019, we announced that the Company had entered into an accelerated share repurchase agreement with Citibank N.A. to repurchase an aggregate of \$50.0 million of our Common Shares. Pursuant to the accelerated share repurchase agreement in the second quarter of 2019 we made an upfront payment of \$50.0 million and received an initial delivery of 1,349,528 Common Shares which became treasury shares and were recorded as a \$40.0 million reduction to shareholder' equity. The remaining \$10.0 million of the initial payment was recorded as a reduction to shareholders' equity as an unsettled forward contract indexed to our Common Shares. The number of shares to be ultimately purchased by the Company will be determined based on the volume weighted-average price of our Common Shares during the terms of the transaction, minus an agreed upon discount between the parties. The program is expected to be completed by May 8, 2020.

In January 2020, Stoneridge Brazil paid dividends to former noncontrolling interest holders of Brazilian real ("R\$") 24,154 (\$6,010) as of December 31, 2019. The dividend payable related to Stoneridge Brazil was recorded within other current liabilities on the consolidated balance sheet as of December 31, 2019. See Note 4 to the consolidated financial statements for additional details.

Our future results could also be adversely affected by unfavorable changes in foreign currency exchange rates. We have significant foreign denominated transaction exposure in certain locations, especially in Brazil, Argentina, Mexico, Sweden, Estonia, the Netherlands, United Kingdom and China. We have entered into foreign currency forward contracts to reduce our exposure related to certain foreign currency fluctuations. See Note 10 to the consolidated financial statements for additional details. Our future results could also be unfavorably affected by increased commodity prices as commodity fluctuations impact the cost of our raw material purchases.

At December 31, 2019, we had cash and cash equivalents of \$69.4 million, of which 97.0% was held in foreign locations. The Company has recognized deferred taxes related to the expected foreign currency impact upon repatriation from foreign subsidiaries not considered indefinitely reinvested. Any foreign tax on repatriation of earnings not considered to be indefinitely reinvested is expected to be immaterial. The decrease in cash and cash equivalents from \$81.1 million at December 31, 2018 was primarily due to the repurchase of our Common Shares, lower cash flows from operations and the cash payment of the Orlaco earn-out consideration which were offset by proceeds from the disposal of Non-core Products and net borrowings on the 2019 Credit Facility and the Amended Agreement, as applicable.

Commitments and Contingencies

See Note 11 to the consolidated financial statements for disclosures of the Company's commitments and contingencies.

Seasonality

Our Control Devices and Electronics segments are not typically materially affected by seasonality, however the demand for our Stoneridge Brazil segment consumer products is generally higher in the second half of the year, the fourth quarter in particular.

Inflation and International Presence

By operating internationally, we are affected by foreign currency exchange rates and the economic conditions of certain countries. Furthermore, given the current economic climate and recent fluctuations in certain commodity prices, we believe that an increase in such items could significantly affect our profitability. See Note 10 to the consolidated financial statements for additional details on the Company's commodity price and foreign currency exchange rate risks.

Off-balance Sheet Arrangements

At December 31, 2019, we do not have any off-balance sheet arrangements that have, or are, in the opinion of management, reasonably likely to have, a current or future material effect on our financial condition or results of operations.

Critical Accounting Policies and Estimates

The preparation of financial statements in conformity with U.S. Generally Accepted Accounting Principles ("GAAP") requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and the disclosure of contingent liabilities at the date of the consolidated financial statements, and the reported amounts of revenues and expenses during the reporting period.

On an ongoing basis, we evaluate estimates and assumptions used in our consolidated financial statements. We base our estimates on historical experience and on various other factors that we believe to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets and liabilities that are not readily apparent from other sources. Actual results could differ from these estimates.

Our critical accounting policies, those most important to the financial presentation and those that are the most complex, subjective or require significant judgment, are as follows.

Revenue Recognition and Sales Commitments. We recognize revenue when obligations under the terms of a contract with our customer are satisfied; generally this occurs with the transfer of control of our products and services, which is usually when the parts are shipped or delivered to the customer's premises. Revenue is measured as the amount of consideration we expect to receive in exchange for transferring goods or providing services. The transaction price will include estimates of variable consideration to the extent it is probable that a significant reversal of revenue recognized will not occur. Incidental items that are not significant in the context of the contract are recognized as expense. Revenue for OEM and Tier 1 supplier customers and aftermarket products are recognized at the point in time it satisfies a performance obligation by transferring control of a part to the customer. A small portion of our sales are comprised of monitoring services of which the revenue is recognized over the life of the contract. See Note 3 for additional information on our revenue recognition policies, including recognizing revenue based on satisfying performance obligations.

Warranties. Our warranty liability is established based on our best estimate of the amounts necessary to settle existing and future claims on products sold as of the balance sheet dates. These accruals are based on several factors including past experience, production changes, industry developments and various other considerations. Our estimate is based on historical trends of units sold and claim payment amounts, combined with our current understanding of the status of existing claims and discussions with our customers. The key factors in our estimate are the stated or implied warranty period, the customer source, customer policy decisions regarding warranties and customers seeking to holding the company responsible for their product warranties. Although we believe that our warranty liability is adequate and that the judgment applied is appropriate, such amounts estimated to be due and payable could differ materially from what will actually transpire in the future.

Contingencies. We are subject to legal proceedings and claims, including product liability claims, commercial or contractual disputes, environmental enforcement actions and other claims that arise in the normal course of business. We routinely assess the likelihood of any adverse judgments or outcomes to these matters, as well as ranges of probable losses, by consulting with internal personnel principally involved with such matters and with our outside legal counsel handling such matters.

We have accrued for estimated losses when it is probable that a liability or loss has been incurred and the amount can be reasonably estimated. Contingencies by their nature relate to uncertainties that require the exercise of judgment both in assessing whether or not a liability or loss has been incurred and estimating that amount of probable loss. The liabilities may change in the future due to new developments or changes in circumstances. The inherent uncertainty related to the outcome of these matters can result in amounts materially different from any provisions made with respect to their resolution.

Goodwill. Goodwill is tested for impairment at least annually and whenever events or changes in circumstances indicate that the carrying value may not be recoverable. In conducting our annual impairment assessment testing, we first perform a qualitative assessment of whether it is more likely than not that a reporting unit's fair value is less than its carrying amount. If not, no further goodwill impairment testing is performed. If it is more likely than not that a reporting unit's fair value is less than its carrying amount, or if we elect not to perform a qualitative assessment of a reporting unit, we then compare the fair value of the reporting unit to the related net book value. If the net book value of a reporting unit exceeds its fair value, an impairment loss is measured and recognized.

The Company utilizes an income statement approach to estimate the fair value of a reporting unit and a market valuation approach to further support this analysis. The income approach is based on projected debt-free cash flow which is discounted to the present value using discount factors that consider the timing and risk of cash flows. We believe that this approach is appropriate because it provides a fair value estimate based on the reporting unit's expected long-term operating cash flow performance. This approach also mitigates the impact of cyclical trends that occur in the industry. Fair value is estimated using internally developed forecasts, as well as commercial and discount rate assumptions. The discount rate used is the value-weighted average of our estimated cost of equity and of debt ("cost of capital") derived using both known and estimated customary market metrics. Our weighted average cost of capital is adjusted to reflect a risk factor, if necessary. Other significant assumptions include terminal value growth rates, terminal value margin rates, future capital expenditures and changes in future working capital requirements. While there are inherent uncertainties related to the assumptions used and to management's application of these assumptions to this analysis, we believe that the income statement approach provides a reasonable estimate of the fair value of a reporting unit. The market valuation approach is used to further support our analysis.

Income Taxes. Deferred income taxes are provided for temporary differences between the amount of assets and liabilities for financial reporting purposes and the basis of such assets and liabilities as measured by tax laws and regulations. Our deferred tax assets include, among other items, net operating loss carryforwards and tax credits that can be used to offset taxable income in future periods and reduce income taxes payable in those future periods. Our U.S. state and foreign net operating losses expire at various times or have indefinite expiration dates. Our U.S. federal general business credits, if unused, begin to expire in 2025, and the state and foreign tax credits expire at various times.

Accounting standards require that deferred tax assets be reduced by a valuation allowance if, based on all available evidence, it is considered more likely than not that some portion or all of the recorded deferred tax assets will not be realized in future periods. This assessment requires significant judgment, and in making this evaluation, the Company considers available positive and negative evidence, including the potential to carryback net operating losses and credits, the future release of certain taxable temporary differences, actual and forecasted results, and tax planning strategies that are both prudent and feasible. Risk factors include U.S. and foreign economic conditions that affect the automotive and commercial vehicle markets of which the Company has significant operations.

The Company has recognized deferred taxes related to the expected foreign currency impact upon repatriation from foreign subsidiaries not considered indefinitely reinvested. Any foreign tax on repatriation of earnings not considered to be indefinitely reinvested is expected to be immaterial.

The Tax Legislation also created a provision known as Global Intangible Low-Taxed Income ("GILTI") that imposes a tax on certain earnings of foreign subsidiaries. The Company has made an accounting policy election to reflect GILTI taxes, if any, as a current period tax expense when incurred.

Recently Adopted Accounting Standards

In January 2018, the Financial Accounting Standards Board ("FASB") issued Accounting Standards Update ("ASU") 2018-02, "Income Statement — Reporting Comprehensive Income (Topic 220): Reclassification of Certain Tax Effects from Accumulated Other Comprehensive Income." This guidance gives entities the option to reclassify to retained earnings the tax effects resulting from the enactment of the Tax Cuts and Jobs Act related to items in accumulated other comprehensive income ("AOCI") that the FASB refers to as having been stranded in AOCI. The new guidance was effective for fiscal years beginning after December 15, 2018 and interim periods within those fiscal years. The Company adopted this standard on January 1, 2019, which did not have a material impact on the Company's consolidated financial statements.

In February 2016, the FASB issued ASU 2016-02, "Leases (Topic 842)", which requires that a lessee recognize assets and liabilities on the balance sheet for all leases with a lease term of more than twelve months, with the result being the recognition of a right of use asset and a lease liability. The new standard was effective for fiscal years, and interim periods within those fiscal years, beginning after December 15, 2018. The Company adopted this standard as of January 1, 2019 using the modified retrospective approach and elected the transition option to use the effective date January 1, 2019, as the date of initial application. The Company did not adjust its comparative period financial statements for effects of the ASU 2016-02, or make the new required lease disclosures for periods before the effective date. The Company recognized its transition adjustment as of the effective date. In addition, the Company elected the package of practical expedients permitted under the transition guidance within the new standard. The impact of the adoption resulted in the recognition of right-of-use ("ROU") assets and lease liabilities on the consolidated balance sheet of \$20,618 and \$20,856, respectively, as of January 1, 2019. This standard did not have a material impact on the Company's consolidated results of operations and cash flows upon adoption.

Recently Issued Accounting Standards Not Yet Adopted as of December 31, 2019

In December 2019, the FASB issued ASU 2019-12, "Income Taxes (Topic 740): Simplifying the Accounting for Income Taxes." The amendments in this update remove certain exceptions of Topic 740 including: exception to the incremental approach for intraperiod tax allocation when there is a loss from continuing operations and income or gain from other items; exception to the requirement to recognize a deferred tax liability for equity method investments when a foreign subsidiary becomes an equity method investment; exception to the ability not to recognize a deferred tax liability for a foreign subsidiary when a foreign equity method investment becomes a subsidiary; exception to the general methodology for calculating income taxes in an interim period when a year-to-date loss exceeds the anticipated loss for the year. There are also additional areas of guidance in regards to: franchise and other taxes partially based on income and the interim recognition of enactment of tax laws and rate changes. The provisions of this ASU are effective for years beginning after December 15, 2020, with early adoption permitted. We are currently evaluating the impact of this ASU on our consolidated financial statements.

In August 2018, the FASB issued ASU 2018-15, "Intangibles — Goodwill and Other — Internal-Use Software (Subtopic 350-40): Customer's Accounting for Implementation Costs Incurred in a Cloud Computing Arrangement That Is a Service Contract." The guidance in ASU 2018-15 clarifies the accounting for implementation costs in cloud computing arrangements. ASU 2018-15 is effective for fiscal years, and interim periods within those years, beginning after December 15, 2019, and earlier adoption is permitted including adoption in any interim period. The Company is currently evaluating the impact of its pending adoption of ASU 2018-15. The Company will adopt this standard as of January 1, 2020 and it is not expected to have a material impact on the Company's consolidated financial statements.

In August 2018, the FASB issued ASU 2018-13, "Fair Value Measurement (Topic 820) — Disclosure Framework — Changes to the Disclosure Requirements for Fair Value Measurement." The guidance in ASU 2018-13 changes disclosure requirements related to fair value measurements as part of the disclosure framework project. The disclosure framework project aims to improve the effectiveness of disclosures in the notes to the financial statements by focusing on requirements that clearly communicate the most important information to users of the financial statements. This guidance is effective for fiscal years beginning after December 15, 2019,

with early adoption permitted. The Company is currently evaluating the impact of its pending adoption of ASU 2018-13. The Company will adopt this standard as of January 1, 2020 and determined the impact is not material to its consolidated financial statements.

In June 2016, the FASB issued ASU 2016-13, "Financial Instruments — Credit Losses (Topic 326) Measurement of Credit Losses on Financial Instruments", which requires measurement and recognition of expected credit losses for financial assets held and requires enhanced disclosures regarding significant estimates and judgments used in estimating credit losses. ASU 2016-13 is effective for public business entities for annual periods beginning after December 15, 2019, and early adoption is permitted for annual periods beginning after December 15, 2018. The Company is currently evaluating the impact of its pending adoption of ASU 2016-13 on the consolidated financial statements. The Company will adopt this standard as of January 1, 2020 and determined the impact is not material to its consolidated financial statements.

Item 7A. Quantitative and Qualitative Disclosures About Market Risk.

Interest Rates

We are exposed to interest rate risk primarily from the effects of changes in interest rates. At December 31, 2019, approximately 99.25% of our outstanding debt was floating-rate and 0.75% was fixed-rate. We estimate that a 1.0% change in the interest costs of our floating-rate debt outstanding as of December 31, 2019 would change interest expense on an annual basis by approximately \$1.3 million.

Currency Exchange Rates

In addition to the United States, we have significant operations in Europe, South America, Mexico and China. As a result we are subject to translation risk because of the transactions of our foreign operations are in local currency (particularly the Brazilian real, Chinese renminbi, Mexican peso, euro, Swedish krona and Argentinian peso) and must be translated into U.S. dollars. As currency exchange rates fluctuate, the translation of our consolidated statements of operations into U.S. dollars affects the comparability of revenues, expenses, operating income, net income and earnings per share between years.

We have previously used derivative financial instruments, including foreign currency forward contracts, to mitigate our exposure to fluctuations in foreign currency exchange rates by reducing the effect of such fluctuations on foreign currency denominated intercompany transactions, inventory material purchases and other foreign currency exposures.

As discussed in detail in Note 10 to our consolidated financial statements, we entered into foreign currency forward contracts the purpose of which is to reduce exposure related to the Company's future Mexican peso-denominated purchases. These foreign currency contracts expired throughout 2019.

We estimate that a 10.0% unidirectional change in currency exchange rates relative to the U.S dollar would have changed our income before income taxes for the year ended December 31, 2019 by approximately \$3.8 million.

Commodity Price Risk

The competitive marketplace in which we operate may limit our ability to recover increased costs through higher prices. As such, we are subject to market risk with respect to commodity price fluctuations principally related to our purchases of purchase of copper, steel, zinc, resins and certain other commodities through a combination of fixed price agreements, staggered short-term contract maturities and commercial negotiations with our suppliers and customers. In the future, if we believe that the terms of a fixed price agreement become beneficial to us, we will enter into another such instrument. We may also consider pursuing alternative commodities or alternative suppliers to mitigate this risk over a period of time.

Item 8. Financial Statements and Supplementary Data.

INDEX TO CONSOLIDATED FINANCIAL STATEMENTS AND FINANCIAL STATEMENT SCHEDULE

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Report of Independent Registered Public Accounting Firm

To the Shareholders and the Board of Directors of Stoneridge, Inc.

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of Stoneridge, Inc. and subsidiaries (the Company) as of December 31, 2019 and 2018, the related consolidated statements of operations, comprehensive income, cash flows and shareholders' equity for each of the three years in the period ended December 31, 2019, and the related notes and financial statement schedule listed in the Index at Item 15 (collectively referred to as the "consolidated financial statements"). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company at December 31, 2019 and 2018, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2019, in conformity with U.S. generally accepted accounting principles.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the Company's internal control over financial reporting as of December 31, 2019, based on criteria established in Internal Control-Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework) and our report dated February 27, 2020 expressed an unqualified opinion thereon.

Basis for Opinion

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

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audits provide a reasonable basis for our opinion.

Critical Audit Matters

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

Product warranty and recall reserves

Description of the Matter

The Company's reserves for product warranty and recall totaled \$10.8 million at December 31, 2019. As described in Note 2 to the consolidated financial statements, the Company's reserve for product warranty and recall is based on several factors, including the historical trends of units sold and payment amounts, combined with the Company's current understanding of existing warranty and recall claims. The warranty liability requires a forecast of the resolution of existing claims as well as expected future claims on products previously sold.

Auditing the Company's reserve for product warranty and recall is complex due to the measurement uncertainty associated with the estimate, management's judgment in determining the cost and volume estimates used in the computation as well as volume and costing assumptions in determining the expected future claims on products previously sold.

How We Addressed the Matter in Our Audit

We evaluated the design and tested the operating effectiveness of the Company's controls over the product warranty and recall process. For example, we tested management review controls over the appropriateness of assumptions management used in the calculation and the completeness of warranty claims.

To evaluate the reserve for product warranty and recall, we performed audit procedures that included, among others, testing the completeness and accuracy of the underlying claims data and costs used in the computation of management's estimate, performing inquiries of the Company's quality control team, and obtaining legal confirmation letters to evaluate the status and assessment of certain reserves. We assessed the historical accuracy of management's product warranty and recall reserves and performed sensitivity analyses of significant assumptions to evaluate the impact to the reserve that would result from changes in the assumptions.

Description of the Matter

Valuation of earn-out consideration

As discussed in Notes 4 and 10 of the consolidated financial statements, in 2017 the Company acquired the remaining 26% noncontrolling interest in Stoneridge Brazil for \$1.5 million in cash along with earn-out consideration. The Company will be required to pay additional earn-out consideration, which is not capped, based on Stoneridge Brazil's financial performance in either 2020 or 2021. The fair value of the Stoneridge Brazil earn-out consideration, which approximated \$12.0 million as of December 31, 2019, is based on discounted cash flows utilizing forecasted earnings before taxes, interest, depreciation, and amortization.

Auditing management's estimate of the fair value of the earn-out consideration was complex and highly judgmental due to the significant estimation required. In particular, the fair value estimate was sensitive to significant assumptions such as forecasted sales, expected operating income, and the discount rate.

*How We Addressed the Matter in
Our Audit*

We obtained an understanding, evaluated the design and tested the operating effectiveness of controls over the Company's process for measuring the Stoneridge Brazil earn-out consideration. This included testing management review controls over projected financial information over the Stoneridge Brazil business and other key inputs to the calculation.

To test the estimated fair value of the Company's earn-out consideration, we performed audit procedures that included, among others, testing the significant assumptions discussed above and the underlying data used by the Company in its calculation. We compared the significant assumptions used by management to current industry and economic trends, changes to the company's customer base or product mix and other relevant factors. We assessed the historical accuracy of management's estimates and performed sensitivity analyses of significant assumptions to evaluate the changes in the fair value of the calculated earn-out consideration that would result from changes in the assumptions. We also involved a valuation specialist to assist in our evaluation of the significant assumptions in the Company's calculation, including the discount rate used in the fair value estimate.

Ernst & Young LLP

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

Detroit, MI

February 27, 2020

CONSOLIDATED BALANCE SHEETS

December 31, (in thousands)	2019	2018
ASSETS		
Current assets:		
Cash and cash equivalents	\$ 69,403	\$ 81,092
Accounts receivable, less reserves of \$1,289 and \$1,243, respectively	138,564	139,076
Inventories, net	93,449	79,278
Prepaid expenses and other current assets	29,850	20,731
Total current assets	331,266	320,177
Long-term assets:		
Property, plant and equipment, net	122,483	112,213
Intangible assets, net	58,122	62,032
Goodwill	35,874	36,717
Operating lease right-of-use asset	22,027	—
Investments and other long-term assets, net	32,437	28,380
Total long-term assets	270,943	239,342
Total assets	\$602,209	\$559,519
LIABILITIES AND SHAREHOLDERS' EQUITY		
Current liabilities:		
Current portion of debt	\$ 2,672	\$ 1,533
Accounts payable	80,701	87,894
Accrued expenses and other current liabilities	55,223	57,880
Total current liabilities	138,596	147,307
Long-term liabilities:		
Revolving credit facility	126,000	96,000
Long-term debt, net	454	983
Deferred income taxes	12,530	14,895
Operating lease long-term liability	17,971	—
Other long-term liabilities	16,754	17,068
Total long-term liabilities	173,709	128,946
Shareholders' equity:		
Preferred Shares, without par value, 5,000 shares authorized, none issued	—	—
Common Shares, without par value, 60,000 shares authorized, 28,966 and 28,966 shares issued and 27,408 and 28,488 shares outstanding at December 31, 2019 and 2018, respectively, with no stated value	—	—
Additional paid-in capital	225,607	231,647
Common Shares held in treasury, 1,558 and 478 shares at December 31, 2019 and 2018, respectively, at cost	(50,773)	(8,880)
Retained earnings	206,542	146,251
Accumulated other comprehensive loss	(91,472)	(85,752)
Total shareholders' equity	289,904	283,266
Total liabilities and shareholders' equity	\$602,209	\$559,519

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

CONSOLIDATED STATEMENTS OF OPERATIONS

Year ended December 31, (in thousands, except per share data)	2019	2018	2017
Net sales	\$834,289	\$866,199	\$824,444
Costs and expenses:			
Cost of goods sold	620,556	609,568	576,304
Selling, general and administrative	123,853	138,553	141,893
Gain on disposal of Non-core Products, net	(33,599)	—	—
Design and development	52,198	51,074	48,877
Operating income	71,281	67,004	57,370
Interest expense, net	4,324	4,720	5,783
Equity in earnings of investee	(1,578)	(2,038)	(1,636)
Other expense (income), net	142	(736)	641
Income before income taxes	68,393	65,058	52,582
Provision for income taxes	8,102	11,210	7,533
Net income	60,291	53,848	45,049
Net loss attributable to noncontrolling interest	—	—	(130)
Net income attributable to Stoneridge, Inc.	\$ 60,291	\$ 53,848	\$ 45,179
Earnings per share attributable to Stoneridge, Inc.:			
Basic	\$ 2.17	\$ 1.90	\$ 1.61
Diluted	\$ 2.13	\$ 1.85	\$ 1.57
Weighted-average shares outstanding:			
Basic	27,792	28,402	28,082
Diluted	28,270	29,080	28,772

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

CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME

Year ended December 31, (in thousands)	2019	2018	2017
Net income	\$60,291	\$ 53,848	\$45,049
Less: Net loss attributable to noncontrolling interest	—	—	(130)
Net income attributable to Stoneridge, Inc.	60,291	53,848	45,179
Other comprehensive income (loss), net of tax attributable to Stoneridge, Inc.:			
Foreign currency translation	(5,428)	(16,627)	15,473
Unrealized (loss) gain on derivatives ⁽¹⁾	(292)	435	(125)
Other comprehensive loss, net of tax attributable to Stoneridge, Inc.	(5,720)	(16,192)	15,348
Comprehensive income attributable to Stoneridge, Inc.	\$54,571	\$ 37,656	\$60,527

(1) Net of tax (benefit) expense of \$(78), \$156 and \$(68) for the years ended December 31, 2019, 2018 and 2017, respectively.

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

CONSOLIDATED STATEMENTS OF CASH FLOWS

Year ended December 31, (in thousands)	2019	2018	2017
OPERATING ACTIVITIES:			
Net income	\$ 60,291	\$ 53,848	\$ 45,049
Adjustments to reconcile net income to net cash provided by (used for) operating activities:			
Depreciation	24,904	22,786	21,490
Amortization, including accretion and write-off of deferred financing costs	6,579	6,731	6,764
Deferred income taxes	5,586	2,552	(5,959)
Earnings of equity method investee	(1,578)	(2,038)	(1,636)
(Gain) loss on sale of fixed assets	(98)	333	(1,796)
Share-based compensation expense	6,191	5,632	7,265
Excess tax benefit related to share-based compensation expense	(1,289)	(1,584)	(858)
Gain on disposal of Non-core Products, net	(33,599)	—	—
Intangible impairment charge	—	202	—
Change in fair value of earn-out contingent consideration	2,308	213	7,485
Changes in operating assets and liabilities, net of effect of business combination:			
Accounts receivable, net	(1,353)	(3,575)	(15,156)
Inventories, net	(15,653)	(10,002)	(2,132)
Prepaid expenses and other assets	(8,898)	2,291	(10,177)
Accounts payable	(6,980)	11,054	10,492
Accrued expenses and other liabilities	(11,906)	(7,671)	18,077
Net cash provided by operating activities	24,505	80,772	78,908
INVESTING ACTIVITIES:			
Capital expenditures, including intangibles	(39,467)	(29,027)	(32,170)
Proceeds from sale of fixed assets	382	111	77
Insurance proceeds for fixed assets	—	1,403	711
Proceeds from disposal of Non-core Products	34,386	—	—
Business acquisitions, net of cash acquired	—	—	(77,258)
Investment in venture capital fund	(1,600)	(437)	—
Net cash used for investing activities	(6,299)	(27,950)	(108,640)
FINANCING ACTIVITIES:			
Acquisition of noncontrolling interest, including transaction costs	—	—	(1,848)
Revolving credit facility borrowings	112,000	27,500	95,000
Revolving credit facility payments	(82,000)	(52,500)	(41,000)
Proceeds from issuance of debt	2,208	415	2,748
Repayments of debt	(1,587)	(5,071)	(11,573)
Earn-out consideration cash payment	(3,394)	—	—
Other financing costs	(1,366)	—	(61)
Common Share repurchase program	(50,000)	—	—
Repurchase of Common Shares to satisfy employee tax withholding	(4,119)	(4,214)	(2,481)
Net cash (used for) provided by financing activities	(28,258)	(33,870)	40,785
Effect of exchange rate changes on cash and cash equivalents	(1,637)	(3,863)	4,561
Net change in cash and cash equivalents	(11,689)	15,089	15,614
Cash and cash equivalents at beginning of period	81,092	66,003	50,389
Cash and cash equivalents at end of period	\$ 69,403	\$ 81,092	\$ 66,003
Supplemental disclosure of cash flow information:			
Cash paid for interest	\$ 4,401	\$ 4,997	\$ 5,746
Cash paid for income taxes, net	\$ 12,222	\$ 13,213	\$ 7,093

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

CONSOLIDATED STATEMENTS OF SHAREHOLDERS' EQUITY

(in thousands)	Number of Common Shares outstanding	Number of treasury shares	Additional paid-in capital	Common Shares held in treasury	Retained earnings	Accumulated other comprehensive loss	Noncontrolling interest	Total shareholders' equity
BALANCE DECEMBER 31, 2016	27,850	1,116	\$206,504	\$ (5,632)	\$ 45,356	\$(67,913)	\$ 13,762	\$192,077
Net income (loss)	—	—	—	—	45,179	—	(130)	45,049
Unrealized gain on derivatives, net	—	—	—	—	—	(125)	—	(125)
Currency translation adjustments	—	—	—	—	—	15,473	826	16,299
Acquisition of noncontrolling interest, net	—	—	15,820	—	—	(16,995)	(14,458)	(15,633)
Issuance of Common Shares	462	(462)	—	—	—	—	—	—
Repurchased Common Shares for treasury, net	(132)	132	—	(1,486)	—	—	—	(1,486)
Share-based compensation	—	—	6,162	—	—	—	—	6,162
Adoption of ASU 2016-09 (Note 2)	—	—	—	—	1,729	—	—	1,729
BALANCE DECEMBER 31, 2017	28,180	786	\$228,486	\$ (7,118)	\$ 92,264	\$(69,560)	\$ —	\$244,072
Net income	—	—	—	—	53,848	—	—	53,848
Unrealized loss on derivatives, net	—	—	—	—	—	435	—	435
Currency translation adjustments	—	—	—	—	—	(16,627)	—	(16,627)
Issuance of Common Shares	461	(461)	—	—	—	—	—	—
Repurchased Common Shares for treasury, net	(153)	153	—	(1,762)	—	—	—	(1,762)
Share-based compensation	—	—	3,161	—	—	—	—	3,161
Cumulative effect of an accounting change	—	—	—	—	139	—	—	139
BALANCE DECEMBER 31, 2018	28,488	478	\$231,647	\$ (8,880)	\$146,251	\$(85,752)	\$ —	\$283,266
Net income	—	—	—	—	60,291	—	—	60,291
Unrealized gain on derivatives, net	—	—	—	—	—	(292)	—	(292)
Currency translation adjustments	—	—	—	—	—	(5,428)	—	(5,428)
Issuance of Common Shares	407	(407)	—	—	—	—	—	—
Repurchased Common Shares for treasury, net	(137)	137	—	(1,893)	—	—	—	(1,893)
Common Share repurchase program	(1,350)	1,350	(10,000)	(40,000)	—	—	—	(50,000)
Share-based compensation	—	—	3,960	—	—	—	—	3,960
BALANCE DECEMBER 31, 2019	27,408	1,558	\$225,607	\$(50,773)	\$206,542	\$(91,472)	\$ —	\$289,904

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

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

(in thousands, except share and per share data, unless otherwise indicated)

1. Organization and Nature of Business

Stoneridge, Inc. and its subsidiaries are global designers and manufacturers of highly engineered electrical and electronic components, modules and systems for the automotive, commercial, off-highway, motorcycle and agricultural vehicle markets.

2. Summary of Significant Accounting Policies

Basis of Presentation

The accompanying consolidated financial statements include the accounts of Stoneridge, Inc. and its wholly-owned and majority-owned subsidiaries (collectively, the “Company”). Intercompany transactions and balances have been eliminated in consolidation. The Company analyzes its ownership interests in accordance with Accounting Standards Codification (“ASC”) “Consolidations (Topic 810)” to determine whether they are a variable interest entity and, if so, whether the Company is the primary beneficiary.

On January 31, 2017, the Company acquired Exploitatiemaatschappij Berghaaf B.V. (“Orlaco”), an electronics business which designs, manufactures and sells camera-based vision systems, monitors and related products. The acquisition was accounted for as a business combination, and accordingly, the Company’s consolidated financial statements herein include the results of Orlaco from the date of acquisition. See Acquisitions in Note 2 below to the consolidated financial statements for additional details regarding the Orlaco acquisition.

The Company had a 74% controlling interest in PST Eletrônica Ltda. (“Stoneridge Brazil”) from December 31, 2011 through May 15, 2017. On May 16, 2017, the Company acquired the remaining 26% noncontrolling interest in Stoneridge Brazil, which was accounted for as an equity transaction. As such, Stoneridge Brazil is now a wholly owned subsidiary. See Note 4 to the consolidated financial statements for additional details regarding the acquisition of Stoneridge Brazil’s noncontrolling interest.

The Company’s investment in Minda Stoneridge Instruments Ltd. (“MSIL”) for the years ended December 31, 2019, 2018 and 2017 has been determined to be an unconsolidated entity, and therefore is accounted for under the equity method of accounting based on the Company’s 49% ownership in MSIL.

Accounting Estimates

The preparation of financial statements in conformity with U.S. Generally Accepted Accounting Principles (“GAAP”) requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities, including certain self-insured risks and liabilities, disclosure of contingent assets and liabilities at the date of the consolidated financial statements and the reported amounts of revenues and expenses during the reporting period. Because actual results could differ from those estimates, the Company revises its estimates and assumptions as new information becomes available.

Cash and Cash Equivalents

The Company’s cash and cash equivalents include actively traded money market funds with short-term investments in marketable securities, primarily U.S. government securities. Cash and cash equivalents are stated at cost, which approximates fair value, due to the highly liquid nature and short-term duration of the underlying securities with original maturities of 90 days or less.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

(in thousands, except share and per share data, unless otherwise indicated)

2. Summary of Significant Accounting Policies – (continued)

Accounts Receivable and Concentration of Credit Risk

Revenues are principally generated from the automotive, commercial, off-highway, motorcycle and agricultural vehicle markets. The Company's largest customers are Ford Motor Company and Volvo, primarily related to the Control Devices and Electronics reportable segments and accounted for the following percentages of consolidated net sales for the years ended December 31, 2019, 2018 and 2017:

Year Ended December 31	2019	2018	2017
Ford Motor Company	11%	12%	14%
Volvo	8%	8%	6%

Accounts receivable are recorded at the invoice price, net of an estimate of allowance for doubtful accounts and other reserves.

Allowance for Doubtful Accounts

The Company evaluates the collectability of accounts receivable based on a combination of factors. In circumstances where the Company is aware of a specific customer's inability to meet its financial obligations, a specific allowance for doubtful accounts is recorded against amounts due to reduce the net recognized receivable to the amount the Company reasonably believes will be collected. Additionally, the Company reviews historical trends for collectability in determining an estimate for its allowance for doubtful accounts. If economic circumstances change substantially, estimates of the recoverability of amounts due to the Company could be reduced by a material amount. The Company does not have collateral requirements with its customers.

Sales of Accounts Receivable

In prior years, the Company's Stoneridge Brazil segment sold selected accounts receivable on a full recourse basis to an unrelated financial institution in Brazil. Stoneridge Brazil accounts for these transactions as sales of accounts receivable. As such, in accordance with ASC 860, "Transfers and Servicing", the sales of accounts receivable are reflected as a reduction of accounts receivable in the consolidated balance sheets and the loss on sale is recorded within interest expense, net in the consolidated statements of operations while the proceeds received from the sale are included in the cash flows from operating activities in the consolidated statements of cash flows.

During 2017, Stoneridge Brazil sold \$2,520 (7,983 Brazilian real ("R\$")) of accounts receivable at a loss of \$86 (R\$273), which represents the implicit interest on the transaction, and received proceeds of \$2,434 (R\$7,710). Stoneridge Brazil did not have any remaining credit exposure at December 31, 2017 related to the receivables sold. During 2019 and 2018, Stoneridge Brazil did not sell any of its accounts receivable.

Inventories

Inventories are valued at the lower of cost (using either the first-in, first-out ("FIFO") or average cost methods) or net realizable value. The Company evaluates and adjusts as necessary its excess and obsolescence reserve on a quarterly basis. Excess inventories are quantities of items that exceed anticipated sales or usage for a reasonable period. The Company has guidelines for calculating provisions for excess inventories based on the number of months of inventories on hand compared to anticipated sales or usage. Management uses its judgment to forecast sales or usage and to determine what constitutes a reasonable period. Inventory cost includes material, labor and overhead. Inventories consist of the following:

As of December 31,	2019	2018
Raw materials	\$66,357	\$54,382
Work-in-progress	5,582	4,710
Finished goods	21,510	20,186
Total inventories, net	\$93,449	\$79,278

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(in thousands, except share and per share data, unless otherwise indicated)

2. Summary of Significant Accounting Policies – (continued)

Inventory valued using the FIFO method was \$82,910 and \$64,745 at December 31, 2019 and 2018, respectively. Inventory valued using the average cost method was \$10,539 and \$14,533 at December 31, 2019 and 2018, respectively.

Pre-production Costs Related to Long-term Supply Arrangements

Engineering, research and development and other design and development costs for products sold on long-term supply arrangements are expensed as incurred unless the Company has a contractual guarantee for reimbursement from the customer which are capitalized as pre-production costs. Costs for molds, dies and other tools used to make products sold on long-term supply arrangements for which the Company either has title to the assets or has the noncancelable right to use the assets during the term of the supply arrangement are capitalized in property, plant and equipment and amortized to cost of sales over the shorter of the term of the arrangement or over the estimated useful lives of the assets, typically three to seven years. Costs for molds, dies and other tools used to make products sold on long-term supply arrangements for which the Company has a contractual guarantee to a lump sum reimbursement from the customer are capitalized either as a component of prepaid expenses and other current assets or an investment and other long term assets, net within the consolidated balance sheets. Capitalized pre-production costs were \$7,666 and \$6,875 at December 31, 2019 and 2018, respectively. At December 31, 2019 and 2018, \$7,544 and \$6,875, respectively, were recorded as a component of prepaid expenses and other current assets on the consolidated balance sheets while the remaining amounts were recorded as a component of investments and other long-term assets, net.

Disposal of Non-Core Products

On April 1, 2019, the Company entered into an Asset Purchase Agreement by and among the Company, the Company's wholly owned subsidiary, Stoneridge Control Devices, Inc. ("SCD"), and Standard Motor Products, Inc. ("SMP"). On the same day pursuant to the APA, in exchange for \$40,000 (subject to a post-closing inventory adjustment which was a payment to SMP of \$1,573) and the assumption of certain liabilities, the Company and SCD sold to SMP, product lines and assets related to certain non-core switches and connectors (the "Non-core Products"). On April 1, 2019, the Company and SMP also entered into certain ancillary agreements, including a transition services agreement, a contract manufacturing agreement and a supply agreement, pursuant to which the Company will provide and be compensated for certain manufacturing, transitional, and administrative and support services to SMP on a short-term basis. The products related to the Non-core Products were manufactured in Juarez, Mexico and Canton, Massachusetts, and include ball switches, ignition switches, rotary switches, courtesy lamps, toggle switches, headlamp switches and other related components.

On April 1, 2019, the Company's Control Devices segment recognized net sales and costs of goods sold of \$4,160 and \$2,775, respectively, for the one-time sale of Non-core Product finished goods inventory and a gain on disposal of \$33,921, net for the sale of fixed assets, intellectual property and customer lists associated with the Non-core Products less transaction costs. During the three months ended March 31, 2019, the Company recognized transaction costs associated with the disposal of Control Devices' Non-core Products of \$322 within SG&A.

The Company received \$1,824 for services provided pursuant to the transition services agreement which were recognized as a reduction in SG&A for the year ended December 31, 2019. Pursuant to the contract manufacturing agreement, the Company recognized sales and operating income for the production of Non-core Products of \$26,304 and \$1,458 for the year ended December 31, 2019, respectively. The Company also received \$745 for reimbursement of retention and facility costs from SMP pursuant to the contract manufacturing agreement which was recognized as a reduction to SG&A for the year ended December 31, 2019.

Non-core Products net sales and operating income, including sales to SMP pursuant to the contract manufacturing agreement, were \$41,560 and \$4,831 for the year ended December 31, 2019, respectively, \$44,537 and

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(in thousands, except share and per share data, unless otherwise indicated)

2. Summary of Significant Accounting Policies – (continued)

\$9,086 for the year ended December 31, 2018, respectively, and \$43,339 and \$7,991 for the year ended December 31, 2017, respectively.

Acquisitions

Orlaco

On January 31, 2017, Stoneridge B.V., an indirect wholly-owned subsidiary of Stoneridge, Inc., acquired Orlaco. Orlaco designs, manufactures and sells camera-based vision systems, monitors and related products primarily to the heavy off-road machinery, commercial vehicle, lifting crane and warehousing and logistics industries. Stoneridge and Orlaco jointly developed the MirrorEye camera monitor system, which is a vision-based system solution to improve the safety and fuel economy for commercial vehicles. The MirrorEye camera monitor system integrates Orlaco's vision processing technology and Stoneridge's driver information capabilities as well as the combined software capabilities of both businesses. The acquisition of Orlaco enhanced the Stoneridge's Electronics segment global technical capabilities in vision systems and facilitated entry into new markets.

The aggregate consideration for the Orlaco acquisition was €74,939 (\$79,675), which included customary estimated adjustments to the purchase price. The Company paid €67,439 (\$71,701) in cash. The purchase price was subject to certain customary adjustments set forth in the purchase agreement. The Company was required to pay an additional amount up to €7,500 as contingent consideration ("earn-out consideration") if certain performance targets are achieved during the first two years. See Note 9 for additional details on the Orlaco contingent consideration.

The Company recognized \$1,259 of acquisition related costs in the consolidated statement of operations as a component of selling, general and administrative ("SG&A") expense for the year ended December 31, 2017. There were no acquisition related costs for the years ended December 31, 2019 or 2018.

The Company's statement of operations included \$1,636 of expense in cost of goods sold ("COGS") for the year ended December 31, 2017 associated with the step-up of the Orlaco inventory to fair value. The Company's statement of operations included \$369 and \$4,853 of expense for the fair value adjustment for earn-out consideration in SG&A expenses for the years ended December 31, 2018 and 2017, respectively.

The earn-out consideration obligation related to Orlaco of \$8,474 was paid in March 2019 and recorded in the consolidated statement of cash flows within operating and financing activities in the amounts of \$5,080 and \$3,394, respectively, for the year ended December 31, 2019.

The Orlaco earn-out consideration reached the capped amount of €7,500 as of the quarter ended March 31, 2018 due to actual performance exceeding forecasted performance and remained at the capped amount until it was paid in March 2019.

The following unaudited pro forma information reflects the Company's consolidated results of operations as if the acquisition had taken place on January 1, 2017. The unaudited pro forma information is not necessarily indicative of the results of operations that the Company would have reported had the transaction actually occurred at the beginning of these periods, nor is it necessarily indicative of future results.

Year ended December 31,	2017
Net sales	\$829,474
Net income attributable to Stoneridge, Inc. and subsidiaries	\$ 45,283

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(in thousands, except share and per share data, unless otherwise indicated)

2. Summary of Significant Accounting Policies – (continued)

Property, Plant and Equipment

Property, plant and equipment are recorded at cost and consist of the following:

As of December 31,	2019	2018
Land and land improvements	\$ 4,550	\$ 4,619
Buildings and improvements	39,263	37,234
Machinery and equipment	226,076	212,225
Office furniture and fixtures	9,708	9,929
Tooling	76,933	75,620
Information technology	32,410	27,179
Vehicles	614	872
Leasehold improvements	4,588	2,799
Construction in progress	17,312	23,064
Total property, plant, and equipment	411,454	393,541
Less: accumulated depreciation	(288,971)	(281,328)
Property, plant and equipment, net	\$ 122,483	\$ 112,213

Depreciation is provided using the straight-line method over the estimated useful lives of the assets. Depreciation expense for the years ended December 31, 2019, 2018 and 2017 was \$24,904, \$22,786 and \$21,490, respectively. Depreciable lives within each property classification are as follows:

Buildings and improvements	10 – 40 years
Machinery and equipment	3 – 10 years
Office furniture and fixtures	3 – 10 years
Tooling	2 – 7 years
Information technology	3 – 7 years
Vehicles	3 – 7 years
Leasehold improvements	shorter of lease term or 3 – 10 years

Maintenance and repair expenditures that are not considered improvements and do not extend the useful life of the property, plant and equipment are charged to expense as incurred. Expenditures for improvements and major renewals are capitalized. When assets are retired or otherwise disposed of, the related cost and accumulated depreciation are removed from the accounts, and any gain or loss on the disposition is recorded in the consolidated statements of operations as a component of SG&A expenses.

Impairment of Long-Lived or Finite-Lived Assets

The Company reviews the carrying value of its long-lived assets and finite-lived intangible assets for impairment when events or circumstances indicate that their carrying value may not be recoverable. Factors the Company considers important that could trigger testing of the related asset groups for an impairment include current period operating or cash flow losses combined with a history of operating or cash flow losses, a projection or forecast that demonstrates continuing losses, significant adverse changes in the business climate within a particular business or current expectations that a long-lived asset will be sold or otherwise disposed of significantly before the end of its estimated useful life. To test for impairment, the estimated undiscounted cash flows expected to be generated from the use and disposal of the asset or asset group is compared to its carrying value. An asset group is established by identifying the lowest level of cash flows generated by the group of assets that are largely independent of cash flows of other assets. If cash flows cannot be separately and independently identified for a single asset, we will determine whether an impairment has occurred for the group of assets for which we can identify projected cash flows. If these undiscounted cash flows are less than their respective carrying

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

(in thousands, except share and per share data, unless otherwise indicated)

2. Summary of Significant Accounting Policies – (continued)

values, an impairment charge would be recognized to the extent that the carrying values exceed estimated fair values. The estimation of undiscounted cash flows and fair value requires us to make assumptions regarding future operating results over the life of the asset or the life of the primary asset in the asset group. The results of the impairment testing are dependent on these estimates which require judgment. The occurrence of certain events, including changes in economic and competitive conditions, could impact cash flows eventually realized and management's ability to accurately assess whether an asset is impaired.

Goodwill and Other Intangible Assets

Goodwill

The total purchase price associated with acquisitions is allocated to the acquisition date fair values of identifiable assets acquired and liabilities assumed with the excess purchase price assigned to goodwill.

Goodwill was \$35,874 and \$36,717 at December 31, 2019 and 2018, respectively, all of which relates to the Electronics segment. Goodwill is not amortized, but instead is tested for impairment at least annually, or earlier when events and circumstances indicate that it is more likely than not that such assets have been impaired, by applying a fair value-based test. In conducting our annual impairment assessment testing, we first perform a qualitative assessment of whether it is more likely than not that a reporting unit's fair value is less than its carrying amount. If not, no further goodwill impairment testing is performed. If it is more likely than not that a reporting unit's fair value is less than its carrying amount, or if we elect not to perform a qualitative assessment of a reporting unit, we then compare the fair value of the reporting unit to the related net book value. If the net book value of a reporting unit exceeds its fair value, an impairment loss is measured and recognized.

The Company utilizes an income statement approach to estimate the fair value of a reporting unit and a market valuation approach to further support this analysis. The income approach is based on projected debt-free cash flow which is discounted to the present value using discount factors that consider the timing and risk of cash flows. We believe that this approach is appropriate because it provides a fair value estimate based on the reporting unit's expected long-term operating cash flow performance. This approach also mitigates the impact of cyclical trends that occur in the industry. Fair value is estimated using internally developed forecasts, as well as commercial and discount rate assumptions. The discount rate used is the value-weighted average of our estimated cost of equity and of debt ("cost of capital") derived using both known and estimated customary market metrics. Our weighted average cost of capital is adjusted to reflect a risk factor, if necessary. Other significant assumptions include terminal value growth rates, terminal value margin rates, future capital expenditures and changes in future working capital requirements. While there are inherent uncertainties related to the assumptions used and to management's application of these assumptions to this analysis, we believe that the income statement approach provides a reasonable estimate of the fair value of a reporting unit. The market valuation approach is used to further support our analysis. There was no impairment of goodwill for the years ended December 31, 2019, 2018 or 2017.

Goodwill and changes in the carrying amount of goodwill for the Electronics segment for the years ended December 31, 2019 and 2018 were as follows:

Balance at January 1, 2019	\$36,717
Currency translation	(843)
Balance at December 31, 2019	\$35,874
Balance at January 1, 2018	\$38,419
Currency translation	(1,702)
Balance at December 31, 2018	\$36,717

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

(in thousands, except share and per share data, unless otherwise indicated)

2. Summary of Significant Accounting Policies – (continued)

The Company's cumulative goodwill impairment loss since inception was \$300,083 at December 31, 2019 and 2018, which includes Stoneridge Brazil's goodwill impairment in 2014 and goodwill impairment recorded by the Company's Control Devices segment in 2008 and 2004.

Other Intangible Assets

Other intangible assets, net at December 31, 2019 and 2018 consisted of the following:

As of December 31, 2019	Acquisition cost	Accumulated amortization	Net
Customer lists	\$50,750	\$(17,466)	\$33,284
Tradenames	20,041	(6,687)	13,354
Technology	15,231	(7,353)	7,878
Capitalized software development	3,606	—	3,606
Total	\$89,628	\$(31,506)	\$58,122

As of December 31, 2018	Acquisition cost	Accumulated amortization	Net
Customer lists	\$52,200	\$(14,549)	\$37,651
Tradenames	20,689	(5,884)	14,805
Technology	15,581	(6,005)	9,576
Total	\$88,470	\$(26,438)	\$62,032

Other intangible assets, net at December 31, 2019 for customer lists, tradenames, technology and capitalized software development include \$23,019, \$4,561, \$3,498 and \$2,233, respectively, related to the Electronics segment. Customer lists, tradenames and technology of \$10,265, \$8,793 and \$4,270, respectively, related to the Stoneridge Brazil segment at December 31, 2019. Capitalized software development and technology of \$1,373 and \$110, respectively, related to the Control Devices segment at December 31, 2019.

The Company designs and develops software that will be embedded into certain products and sold to customers. Software development costs are capitalized after the software product development reaches technological feasibility and until the software product becomes available for general release to customers. These intangible assets will be amortized using the straight-line method over estimated useful lives generally ranging from three to seven years.

The Company recognized \$5,955, \$6,406 and \$6,440 of amortization expense related to intangible assets in 2019, 2018 and 2017, respectively. Amortization expense is included as a component of SG&A on the consolidated statements of operations. Annual amortization expense for intangible assets is estimated to be approximately \$5,722 for the years 2020 through 2024. The weighted-average remaining amortization period is approximately 11 years.

For the year ended December 31, 2018 the Company recognized \$202 of intangible impairment charge related to the Electronics segment customer lists as a result of the European Aftermarket restructuring as noted in Note 13. There were no intangible impairment charges for the years ended December 31, 2019 or 2017.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

(in thousands, except share and per share data, unless otherwise indicated)

2. Summary of Significant Accounting Policies – (continued)

Accrued Expenses and Other Current Liabilities

Accrued expenses and other current liabilities consist of the following:

As of December 31,	2019	2018
Compensation related liabilities	\$19,566	\$18,717
Contingent consideration ^(A)	—	8,602
Product warranty and recall obligations	7,685	7,211
Other ^(B)	27,972	23,350
Total accrued expenses and other current liabilities	\$55,223	\$57,880

(A) Accrued contingent consideration includes the Orlaco earn-out consideration, as referenced in Note 2 and Note 10, and is included in accrued expenses and other current liabilities for the year ended December 31, 2018. Orlaco earn-out consideration of \$8,474 was paid in March 2019.

(B) "Other" is comprised of miscellaneous accruals, none of which individually contributed a significant portion of the total.

Income Taxes

The Company accounts for income taxes using the liability method. Deferred income taxes reflect the tax consequences on future years of differences between the tax basis of assets and liabilities and their financial reporting amounts. Future tax benefits are recognized to the extent that realization of such benefits is more likely than not to occur. The effect of a change in tax rates on deferred tax assets and liabilities is recognized in the period that includes the enactment date.

Deferred tax assets are recognized to the extent that these assets are more likely than not to be realized (See Note 6). In making such a determination, the Company considers all available positive and negative evidence, including future release of existing taxable temporary differences, projected future taxable income, tax planning strategies, and results of recent operations. Release of some or all of a valuation allowance would result in the recognition of certain deferred tax assets and a decrease to income tax expense for the period the release is recorded.

The Company's policy is to provide for uncertain tax positions and the related interest and penalties based upon management's assessment of whether a tax benefit is more likely than not to be sustained upon examination by tax authorities. To the extent the Company prevails in matters for which a liability for an unrecognized tax benefit is established or is required to pay amounts in excess of the liability, the Company's effective tax rate in a given financial statement period may be affected.

The Tax Cuts and Jobs Act ("Tax Legislation") created a provision known as Global Intangible Low-Taxed Income ("GILTI") that imposes a tax on certain earnings of foreign subsidiaries. The Company has made an accounting policy election to reflect GILTI taxes, if any, as a current period tax expense when incurred.

Currency Translation

The financial statements of foreign subsidiaries, where the local currency is the functional currency, are translated into U.S. dollars using exchange rates in effect at the period end for assets and liabilities and average exchange rates during each reporting period for the results of operations. Adjustments resulting from translation of financial statements are reflected as a component of accumulated other comprehensive loss in the Company's consolidated balance sheets.

Foreign currency transactions are remeasured into the functional currency using translation rates in effect at the time of the transaction with the resulting adjustments included on the consolidated statements of operations within other expense (income), net. These foreign currency transaction losses (gains), including the impact of hedging activities, were \$372, \$(487) and \$500 for the years ended December 31, 2019, 2018 and 2017, respectively.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

(in thousands, except share and per share data, unless otherwise indicated)

2. Summary of Significant Accounting Policies – (continued)

Revenue Recognition and Sales Commitments

The Company recognizes revenue when obligations under the terms of a contract with our customer are satisfied; generally this occurs with the transfer of control of our products and services, which is usually when the parts are shipped or delivered to the customer's premises. The Company recognizes monitoring service revenues over time, as the services are provided to customers. Revenue is measured as the amount of consideration we expect to receive in exchange for transferring goods or providing services. The transaction price will include estimates of variable consideration to the extent it is probable that a significant reversal of revenue recognized will not occur. Incidental items that are not significant in the context of the contract are recognized as expense. The Company collects certain taxes and fees on behalf of government agencies and remits such collections on a periodic basis. The taxes are collected from customers but are not included in net sales. Estimated returns are based on historical authorized returns. The Company often enters into agreements with its customers at the beginning of a given vehicle's expected production life. Once such agreements are entered into, it is the Company's obligation to fulfill the customers' purchasing requirements for the entire production life of the vehicle. These agreements are subject to potential renegotiation from time to time, which may affect product pricing. See Note 3 for additional disclosure.

Shipping and Handling Costs

Shipping and handling costs are included in COGS on the consolidated statements of operations.

Product Warranty and Recall Reserves

Amounts accrued for product warranty and recall claims are established based on the Company's best estimate of the amounts necessary to settle existing and future claims on products sold as of the balance sheet dates. These accruals are based on several factors including past experience, production changes, industry developments and various other considerations. Our estimate is based on historical trends of units sold and claim payment amounts, combined with our current understanding of the status of existing claims and discussions with our customers. The key factors in our estimate are the stated or implied warranty period, the customer source, customer policy decisions regarding warranties and customers seeking to holding the company responsible for their product warranties. The Company can provide no assurances that it will not experience material claims or that it will not incur significant costs to defend or settle such claims beyond the amounts accrued. The current portion of the product warranty and recall reserve is included as a component of accrued expenses and other current liabilities on the consolidated balance sheets. Product warranty and recall includes \$3,111 and \$3,283 of a long-term liability at December 31, 2019 and 2018, respectively, which is included as a component of other long-term liabilities on the consolidated balance sheets.

The following provides a reconciliation of changes in the product warranty and recall reserve:

Year ended December 31,	2019	2018
Product warranty and recall at beginning of period	\$10,494	\$ 9,979
Accruals for warranties established during period	7,131	6,217
Aggregate changes in pre-existing liabilities due to claim developments	1,037	646
Settlements made during the period	(7,600)	(5,831)
Foreign currency translation	(266)	(517)
Product warranty and recall at end of period	\$10,796	\$10,494

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

(in thousands, except share and per share data, unless otherwise indicated)

2. Summary of Significant Accounting Policies – (continued)

Design and Development Costs

Expenses associated with the development of new products, and changes to existing products, other than capitalized software development costs, are charged to expense as incurred, and are included in the Company's consolidated statements of operations as a separate component of costs and expenses. These product development costs amounted to \$52,198, \$51,074 and \$48,877 for the years ended December 31, 2019, 2018 and 2017, respectively, or 6.3%, 5.9% and 5.9% of net sales for these respective periods.

Research and Development Activities

The Company enters into research and development contracts with certain customers, which generally provide for reimbursement of costs. The Company incurred and was reimbursed for contracted research and development costs of \$15,096, \$16,540 and \$14,946 for the years ended December 31, 2019, 2018 and 2017, respectively.

Share-Based Compensation

At December 31, 2019, the Company had two types of share-based compensation plans: (1) 2016 Long-Term Incentive Plan for employees and (2) the 2018 Amended and Restated Directors' Restricted Shares Plan, for non-employee directors. See Note 8 for additional details on share-based compensation plans.

Total compensation expense recognized as a component of SG&A expense on the consolidated statements of operations for share-based compensation arrangements was \$6,191, which included accelerated expense associated with the retirement of eligible employees, \$5,632, which included the forfeiture of certain grants associated with employee resignations, and \$7,265, related to higher attainment of performance-based awards and accelerated expense associated with the retirement of eligible employees, for the years ended December 31, 2019, 2018 and 2017, respectively. There was no share-based compensation expense capitalized in inventory during 2019, 2018 or 2017. Share-based compensation expense is calculated using estimated volatility and forfeitures based on historical data, future expectations and the expected term of the share-based compensation awards.

Financial Instruments and Derivative Financial Instruments

Financial instruments, including derivative financial instruments, held by the Company include cash and cash equivalents, accounts receivable, accounts payable, long-term debt and foreign currency forward contracts. The carrying value of cash and cash equivalents, accounts receivable and accounts payable is considered to be representative of fair value because of the short maturity of these instruments. See Note 10 for fair value disclosures of the Company's financial instruments.

Common Shares Held in Treasury

The Company accounts for Common Shares held in treasury under the cost method (applied on a FIFO basis) and includes such shares as a reduction of total shareholders' equity.

Earnings Per Share

Basic earnings per share was computed by dividing net income attributable to Stoneridge Inc. by the weighted-average number of Common Shares outstanding for each respective period. Diluted earnings per share was calculated by dividing net income attributable to Stoneridge, Inc. by the weighted-average of all potentially dilutive Common Shares that were outstanding during the periods presented.

Actual weighted-average Common Shares outstanding used in calculating basic and diluted net income per share were as follows:

Year ended December 31,	2019	2018	2017
Basic weighted-average Common Shares outstanding	27,791,799	28,402,227	28,082,114
Effect of dilutive shares	478,296	677,599	689,531
Diluted weighted-average Common Shares outstanding	28,270,095	29,079,826	28,771,645

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

(in thousands, except share and per share data, unless otherwise indicated)

2. Summary of Significant Accounting Policies – (continued)

There were 566,337, 628,220 and 766,538 performance-based right to receive Common Shares outstanding at December 31, 2019, 2018 and 2017. These performance-based restricted and right to receive Common Shares are included in the computation of diluted earnings per share based on the number of Common Shares that would be issuable if the end of the year were the end of the contingency period.

Deferred Financing Costs, net

Deferred financing costs are amortized over the life of the related financial instrument using the straight-line method, which approximates the effective interest method. Deferred finance cost amortization and debt discount accretion, for the years ended December 31, 2019, 2018 and 2017 was \$624, \$326 and \$324, respectively, and is included as a component of interest expense, net in the consolidated statements of operations. In 2019, the Company capitalized \$1,366 of deferred financing costs as a result of entering into the 2019 Credit Facility. In connection with the 2019 Credit Facility, the Company wrote off a portion of the previously recorded deferred financing costs of \$275 in interest expense, net during the year ended December 31, 2019. See Note 5 to the consolidated financial statements for additional details regarding the 2019 Credit Facility and related deferred financing costs. The Company has elected to continue to present deferred financing costs related to the Credit Facility within long-term assets in the Company's consolidated balance sheets. Deferred financing costs, net, were \$1,625 and \$882, as of December 31, 2019 and 2018, respectively.

Equity and Changes in Accumulated Other Comprehensive Loss by Component

Common Share Repurchase

On October 26, 2018, the Company's Board of Directors authorized the Company to repurchase up to \$50,000 of Common Shares. Thereafter, on May 7, 2019, the Company entered into a Master Confirmation (the "Master Confirmation") and a Supplemental Confirmation, together with the Master Confirmation, the Accelerated Share Repurchase Agreement ("ASR Agreement"), with Citibank N.A. (the "Bank") to purchase Company Common Shares for a payment of \$50,000 (the "Prepayment Amount"). Under the terms of the ASR Agreement, on May 7, 2019, the Company paid the Prepayment Amount to the Bank and received on May 8, 2019 an initial delivery of 1,349,528 Company Common Shares, which is approximately 80% of the total number of Company Common Shares expected to be repurchased under the ASR Agreement based on the closing price of the Company's Common Shares on May 7, 2019. These Common Shares became treasury shares and were recorded as a \$40,000 reduction to shareholder's equity. The remaining \$10,000 of the Prepayment Amount was recorded as a reduction to shareholders' equity as an unsettled forward contract indexed to our Common Shares. The Company excluded the potential share impact of the remaining shares from the computation of diluted earnings per share as these Common Shares are anti-dilutive for year ended December 31, 2019.

At final settlement, the Bank may be required to deliver additional Common Shares to the Company, or, under certain circumstances, the Company may be required to deliver Common Shares or may elect to make a cash payment to the Bank, based generally on the average of the daily volume-weighted average prices of the Company's Common Shares during a term set forth in the ASR Agreement. The ASR Agreement contains provisions customary for agreements of this type, including provisions for adjustments to the transaction terms, the circumstances generally under which the ASR Agreement may be accelerated, extended or terminated early by the Bank and various acknowledgments, representations and warranties made by the parties to one another. The ASR Agreement expires on May 8, 2020. See Note 16 for subsequent event related to the ASR Agreement.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

(in thousands, except share and per share data, unless otherwise indicated)

2. Summary of Significant Accounting Policies – (continued)

Accumulated Other Comprehensive Loss

Changes in accumulated other comprehensive loss for the years ended December 31, 2019 and 2018 were as follows:

	Foreign currency translation	Unrealized gain (loss) on derivatives	Total
Balance at January 1, 2019	\$(86,044)	\$ 292	\$(85,752)
Other comprehensive (loss) income before reclassifications	(5,428)	355	(5,073)
Amounts reclassified from accumulated other comprehensive loss	—	(647)	(647)
Net other comprehensive loss, net of tax	(5,428)	(292)	(5,720)
Balance at December 31, 2019	(91,472)	\$ —	\$(91,472)
Balance at January 1, 2018	\$(69,417)	\$ (143)	\$(69,560)
Other comprehensive (loss) income before reclassifications	(16,627)	1,448	(15,179)
Amounts reclassified from accumulated other comprehensive loss	—	(1,013)	(1,013)
Net other comprehensive (loss) income, net of tax	(16,627)	435	(16,192)
Balance at December 31, 2018	\$(86,044)	\$ 292	\$(85,752)

Reclassifications

Certain prior period amounts have been reclassified to conform to their 2019 presentation in the consolidated financial statements.

Recently Adopted Accounting Standards

In January 2018, the Financial Accounting Standards Board (“FASB”) issued Accounting Standards Update (“ASU”) 2018-02, “Income Statement — Reporting Comprehensive Income (Topic 220): Reclassification of Certain Tax Effects from Accumulated Other Comprehensive Income.” This guidance gives entities the option to reclassify to retained earnings the tax effects resulting from the enactment of the Tax Cuts and Jobs Act related to items in accumulated other comprehensive income (“AOCI”) that the FASB refers to as having been stranded in AOCI. The new guidance was effective for fiscal years beginning after December 15, 2018 and interim periods within those fiscal years. The Company adopted this standard on January 1, 2019, which did not have a material impact on the Company’s consolidated financial statements.

In February 2016, the FASB issued ASU 2016-02, “Leases (Topic 842)”, which requires that a lessee recognize assets and liabilities on the balance sheet for all leases with a lease term of more than twelve months, with the result being the recognition of a right of use asset and a lease liability. The new standard was effective for fiscal years, and interim periods within those fiscal years, beginning after December 15, 2018. The Company adopted this standard as of January 1, 2019 using the modified retrospective approach and elected the transition option to use the effective date January 1, 2019, as the date of initial application. The Company did not adjust its comparative period financial statements for effects of the ASU 2016-02, or make the new required lease disclosures for periods before the effective date. The Company recognized its transition adjustment as of the effective date. In addition, the Company elected the package of practical expedients permitted under the transition guidance within the new standard. The impact of the adoption resulted in the recognition of right-of-use (“ROU”) assets and lease liabilities on the consolidated balance sheet of \$20,618 and \$20,856, respectively, as of January 1, 2019. This standard did not have a material impact on the Company’s consolidated results of operations and cash flows upon adoption.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

(in thousands, except share and per share data, unless otherwise indicated)

2. Summary of Significant Accounting Policies – (continued)

Recently Issued Accounting Standards Not Yet Adopted as of December 31, 2019

In December 2019, the FASB issued ASU 2019-12, "Income Taxes (Topic 740): Simplifying the Accounting for Income Taxes." The amendments in this update remove certain exceptions of Topic 740 including: exception to the incremental approach for intraperiod tax allocation when there is a loss from continuing operations and income or gain from other items; exception to the requirement to recognize a deferred tax liability for equity method investments when a foreign subsidiary becomes an equity method investment; exception to the ability not to recognize a deferred tax liability for a foreign subsidiary when a foreign equity method investment becomes a subsidiary; exception to the general methodology for calculating income taxes in an interim period when a year-to-date loss exceeds the anticipated loss for the year. There are also additional areas of guidance in regards to: franchise and other taxes partially based on income and the interim recognition of enactment of tax laws and rate changes. The provisions of this ASU are effective for years beginning after December 15, 2020, with early adoption permitted. The Company is currently evaluating the impact of this ASU on the Company's consolidated financial statements.

In August 2018, the FASB issued ASU 2018-15, "Intangibles — Goodwill and Other — Internal-Use Software (Subtopic 350-40): Customer's Accounting for Implementation Costs Incurred in a Cloud Computing Arrangement That Is a Service Contract." The guidance in ASU 2018-15 clarifies the accounting for implementation costs in cloud computing arrangements. ASU 2018-15 is effective for fiscal years, and interim periods within those years, beginning after December 15, 2019, and earlier adoption is permitted including adoption in any interim period. The Company is currently evaluating the impact of its pending adoption of ASU 2018-15. The Company will adopt this standard as of January 1, 2020 and it is not expected to have a material impact on the Company's consolidated financial statements.

In August 2018, the FASB issued ASU 2018-13, "Fair Value Measurement (Topic 820) — Disclosure Framework — Changes to the Disclosure Requirements for Fair Value Measurement." The guidance in ASU 2018-13 changes disclosure requirements related to fair value measurements as part of the disclosure framework project. The disclosure framework project aims to improve the effectiveness of disclosures in the notes to the financial statements by focusing on requirements that clearly communicate the most important information to users of the financial statements. This guidance is effective for fiscal years beginning after December 15, 2019, with early adoption permitted. The Company is currently evaluating the impact of its pending adoption of ASU 2018-13. The Company will adopt this standard as of January 1, 2020 and determined the impact is not material to its consolidated financial statements.

In June 2016, the FASB issued ASU 2016-13, "Financial Instruments — Credit Losses (Topic 326) Measurement of Credit Losses on Financial Instruments", which requires measurement and recognition of expected credit losses for financial assets held and requires enhanced disclosures regarding significant estimates and judgments used in estimating credit losses. ASU 2016-13 is effective for public business entities for annual periods beginning after December 15, 2019, and early adoption is permitted for annual periods beginning after December 15, 2018. The Company will adopt this standard as of January 1, 2020 and determined the impact is not material to its consolidated financial statements.

3. Revenue

The Company adopted ASC 606 using the modified retrospective method as applied to customer contracts that were not completed as of January 1, 2018. As a result, financial information for reporting periods beginning after January 1, 2018 are presented under ASC 606, while comparative financial information has not been adjusted and continues to be reported in accordance with the Company's historical accounting policy for revenue recognition prior to the adoption of ASC 606. The Company did not record a cumulative adjustment related to the adoption of ASC 606, and the effects of the adoption were not significant.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

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3. Revenue – (continued)

Revenue is recognized when obligations under the terms of a contract with our customer are satisfied; generally this occurs with the transfer of control of our products and services, which is usually when the parts are shipped or delivered to the customer's premises. Revenue is measured as the amount of consideration we expect to receive in exchange for transferring goods or providing services. The transaction price will include estimates of variable consideration to the extent it is probable that a significant reversal of revenue recognized will not occur. Incidental items that are not significant in the context of the contract are recognized as expense. The expected costs associated with our base warranties continue to be recognized as expense when the products are sold. Customer returns only occur if products do not meet the specifications of the contract and are not connected to any repurchase obligations of the Company.

The Company does not have any financing components or significant payment terms as payment occurs shortly after the point of sale. Taxes assessed by a governmental authority that are both imposed on and concurrent with a specific revenue-producing transaction that are collected by the Company from a customer are excluded from revenue. Amounts billed to customers related to shipping and handling costs are included in net sales in the consolidated statements of operations. Shipping and handling costs associated with outbound freight after control over a product is transferred to the customer are accounted for as a fulfillment cost and are included in cost of sales.

Revenue by Reportable Segment

Control Devices. Our Control Devices segment designs and manufactures products that monitor, measure or activate specific functions within a vehicle. This segment includes product lines such as actuators, sensors, switches and connectors. We sell these products principally to the automotive market in the North American, European, and Asia Pacific regions. To a lesser extent, we also sell these products to the commercial vehicle and agricultural markets in our North America, European and Asia Pacific regions. Our customers included in these markets primarily consist of original equipment manufacturers ("OEM") and companies supplying components directly to the OEMs ("Tier 1 supplier").

Electronics. Our Electronics segment designs and manufactures driver information systems, camera-based vision systems, connectivity and compliance products and electronic control units. These products are sold principally to the commercial vehicle market primarily through our OEM and aftermarket channels in the North American and European regions, and to a lesser extent, the Asia Pacific region. The camera-based vision systems and related products are sold principally to the off-highway vehicle market in the North American and European regions.

Stoneridge Brazil. Our Stoneridge Brazil segment primarily serves the South American region and specializes in the design, manufacture and sale of vehicle tracking devices and monitoring services, vehicle security alarms and convenience accessories, in-vehicle audio and infotainment devices and telematics solutions. Stoneridge Brazil sells its products through the aftermarket distribution channel, to factory authorized dealer installers, also referred to as original equipment services, direct to OEMs and through mass merchandisers. In addition, monitoring services and tracking devices are sold directly to corporate and individual consumers.

The following tables disaggregate our revenue by reportable segment and geographical location⁽¹⁾ for the periods ended December 31, 2019, 2018 and 2017:

Year ended December 31,	Control Devices			Electronics			Stoneridge Brazil			Consolidated		
	2019	2018	2017	2019	2018	2017	2019	2018	2017	2019	2018	2017
Net Sales:												
North America	\$365,010	\$395,148	\$409,596	\$ 92,623	\$ 85,363	\$ 62,174	\$ —	\$ —	\$ —	\$457,633	\$480,511	\$471,770
South America	—	—	—	—	—	—	\$67,534	\$80,175	\$94,533	\$67,534	\$80,175	\$94,533
Europe	\$22,467	\$14,727	\$8,164	\$236,994	\$255,400	\$216,577	—	—	—	\$259,461	\$270,127	\$224,741
Asia Pacific	\$44,083	\$31,422	\$29,768	\$5,578	\$3,964	\$3,632	—	—	—	\$49,661	\$35,386	\$33,400
Total net sales	\$431,560	\$441,297	\$447,528	\$335,195	\$344,727	\$282,383	\$67,534	\$80,175	\$94,533	\$834,289	\$866,199	\$824,444

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
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3. Revenue – (continued)

(1) Company sales based on geographic location are where the sale originates not where the customer is located.

Performance Obligations

For OEM and Tier 1 supplier customers, the Company typically enters into contracts with its customers to provide serial production parts that consist of a set of documents including, but not limited to, an award letter, master purchase agreement and master terms and conditions. For each production product, the Company enters into separate purchase orders that contain the product specifications and an agreed-upon price. The performance obligation does not exist until a customer release is received for a specific number of parts. The majority of the parts sold to OEM and Tier 1 suppliers are specifically customized to the specific customer, with the exception of off-highway products that are common across all customers. The transaction price is equal to the contracted price per part and there is no expectation of material variable consideration in the transaction price. For most customer contracts, the Company does not have an enforceable right to payment at any time prior to when the parts are shipped or delivered to the customer; therefore, the Company recognizes revenue at the point in time it satisfies a performance obligation by transferring control of a part to the customer. Certain customer contracts contain an enforceable right to payment if the customer terminates the contract for convenience and therefore are recognized over time using the cost to complete input method.

Our aftermarket products are focused on meeting the demand for repair and replacement parts, compliance parts and accessories and are sold primarily to aftermarket distributors and mass retailers in our South American, European and North American markets. Aftermarket products have one type of performance obligation which is the delivery of aftermarket parts and spare parts. For aftermarket customers, the Company typically has standard terms and conditions for all customers. In addition, aftermarket products have alternative use as they can be sold to multiple customers. Revenue for aftermarket part production contracts is recognized at a point in time when the control of the parts transfer to the customer which is based on the shipping terms. Aftermarket contracts may include variable consideration related to discounts and rebates and is included in the transaction price upon recognizing the product revenue.

A small portion of the Company's sales are comprised of monitoring services that include both monitoring devices and fees to individual, corporate, fleet and cargo customers in our Stoneridge Brazil segment. These monitoring service contracts are generally not capable of being distinct and are accounted for as a single performance obligation. We recognize revenue for our monitoring products and services contracts over the life of the contract. There is no variable consideration associated with these contracts. The Company has the right to consideration from a customer in the amount that corresponds directly with the value to the customer of the Company's performance to date. Therefore the Company recognizes revenue over time using the practical expedient ASC 606-10-55-18 in the amount the Company has a "right to invoice" rather than selecting an output or input method.

Contract Balances

The Company had no material contract assets, contract liabilities or capitalized contract acquisition costs as of December 31, 2019 or 2018.

4. Investments

Minda Stoneridge Instruments Ltd.

The Company has a 49% interest in MSIL, a company based in India that manufactures electronics, instrumentation equipment and sensors for the motorcycle, commercial vehicle and automotive markets. The investment is accounted for under the equity method of accounting. The Company's investment in MSIL, recorded as a component of investments and other long-term assets, net on the consolidated balance sheets, was \$12,701 and \$11,288 as of December 31, 2019 and 2018, respectively. Equity in earnings of MSIL included in

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

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4. Investments – (continued)

the consolidated statements of operations were \$1,578, \$2,038 and \$1,636 for the years ended December 31, 2019, 2018 and 2017, respectively.

PST Eletrônica Ltda.

The Company had a 74% controlling interest in Stoneridge Brazil from December 21, 2011 through May 15, 2017. On May 16, 2017, the Company acquired the remaining 26% noncontrolling interest in Stoneridge Brazil for \$1,500 in cash along with earn-out consideration. The Company will be required to pay additional earn-out consideration, which is not capped, based on Stoneridge Brazil's financial performance in either 2020 or 2021. See Note 10 for the fair value and foreign currency adjustments of the earn-out consideration for the current and prior periods. The transaction was accounted for as an equity transaction, and therefore no gain or loss was recognized in the statement of operations or comprehensive income. The noncontrolling interest balance on the May 16, 2017 acquisition date was \$14,458, of which \$31,453 and (\$16,995) was related to the carrying value of the investment and foreign currency translation, respectively, and accordingly these amounts were reclassified to additional paid-in capital and accumulated other comprehensive loss, respectively.

The following table sets forth a summary of the changes in noncontrolling interest:

Year ended December 31,	2017
Noncontrolling interest at beginning of period	\$ 13,762
Net loss	(130)
Foreign currency translation	826
Comprehensive income	696
Acquisition of noncontrolling interest	(14,458)
Noncontrolling interest at end of period	\$ —

Stoneridge Brazil has dividends payable to former noncontrolling interest holders of Brazilian real ("R\$") 24,154 (\$6,010) and R\$23,204 (\$5,980) as of December 31, 2019 and 2018, respectively. The dividends payable balance includes monetary correction of R\$3,703 (\$921) and R\$2,752 (\$709) as of December 31, 2019 and 2018, respectively, based on the Brazilian National Extended Consumer Price inflation index ("IPCA"). The dividend payable related to Stoneridge Brazil was recorded within other current liabilities on the consolidated balance sheet as of December 31, 2019 and 2018. These dividends were paid in January 2020.

Other Investments

In December 2018, the Company entered into an agreement to make a \$10,000 investment in a fund managed by Autotech Ventures ("Autotech"), a venture capital firm focused on ground transportation technology which is accounted for in accordance with ASU 2016-01, "Financial Instruments — Overall (Subtopic 825-19)." This investment does not have a readily determinable fair value and is measured at cost, less impairments, adjusted for observable price changes in orderly transactions for identical or similar investments of the same issuer. The Company's \$10,000 investment in the Autotech fund will be contributed over the expected ten year life of the fund. The Company contributed \$1,600 and \$437 to the Autotech Ventures fund during the years ended December 31, 2019 and 2018, respectively. The Autotech investment recorded in investments and other long-term assets in the consolidated balance sheet was \$1,827 and \$437 as of December 31, 2019 and 2018, respectively.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

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5. Debt

Year ended December 31,	2019	2018	Interest rates at December 31, 2019	Maturity
Revolving Credit Facility				
Credit Facility	\$126,000	\$96,000	2.77 – 2.81%	June 2024
Debt				
Stoneridge Brazil short-term obligations	—	989		
Stoneridge Brazil long-term notes	972	1,527	7.00%	November 2021
Suzhou short-term credit line	2,154	—	4.70% – 5.00%	August 2020
Total debt	3,126	2,516		
Less: current portion	(2,672)	(1,533)		
Total long-term debt, net	\$ 454	\$ 983		

Revolving Credit Facility

On September 12, 2014, the Company entered into a Third Amended and Restated Credit Agreement (the “Amended Agreement”). The Amended Agreement provides for a \$300,000 revolving credit facility, which replaced the Company’s existing \$100,000 asset-based credit facility and includes a letter of credit subfacility, swing line subfacility and multicurrency subfacility.

On June 5, 2019, the Company entered into the Fourth Amended and Restated Credit Agreement (the “2019 Credit Facility”). The 2019 Credit Facility provides for a \$400,000 senior secured revolving credit facility and it replaced and superseded the Amended Agreement. The 2019 Credit Facility has an accordion feature which allows the Company to increase the availability by up to \$150,000 upon the satisfaction of certain conditions and includes a letter of credit subfacility, swing line subfacility and multicurrency subfacility. The 2019 Credit Facility has a termination date of June 5, 2024. In 2019, the Company capitalized \$1,366 of deferred financing costs as a result of entering into the 2019 Credit Facility. In connection with the 2019 Credit Facility, the Company wrote off a portion of the previously recorded deferred financing costs of \$275 in interest expense, net during the year ended December 31, 2019. Borrowings under the 2019 Credit Facility bear interest at either the Base Rate or the LIBOR rate, at the Company’s option, plus the applicable margin as set forth in the 2019 Credit Facility. The 2019 Credit Facility contains certain financial covenants that require the Company to maintain less than a maximum leverage ratio and more than a minimum interest coverage ratio.

The 2019 Credit Facility contains customary affirmative covenants and representations. The 2019 Credit Facility also contains customary negative covenants, which, among other things, are subject to certain exceptions, including restrictions on (i) indebtedness, (ii) liens, (iii) liquidations, mergers, consolidations and acquisitions, (iv) disposition of assets or subsidiaries, (v) affiliate transactions, (vi) creation or ownership of certain subsidiaries, partnerships and joint ventures, (vii) continuation of or change in business, (viii) restricted payments, (ix) prepayment of subordinated and junior lien indebtedness, (x) restrictions in agreements on dividends, intercompany loans and granting liens on the collateral, (xi) loans and investments, (xii) sale and leaseback transactions, (xiii) changes in organizational documents and fiscal year and (xiv) transactions with respect to bonding subsidiaries. The 2019 Credit Facility contains customary events of default, subject to customary thresholds and exceptions, including, among other things, (i) non-payment of principal and non-payment of interest and fees, (ii) a material inaccuracy of a representation or warranty at the time made, (iii) a failure to comply with any covenant, subject to customary grace periods in the case of certain affirmative covenants, (iv) cross default of other debt, final judgments and other adverse orders in excess of \$30,000, (v) any loan document shall cease to be a legal, valid and binding agreement, (vi) certain uninsured losses or proceedings against assets with a value in excess of \$30,000, (vii) ERISA events, (viii) a change of control, or (ix) bankruptcy or insolvency proceedings.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

(in thousands, except share and per share data, unless otherwise indicated)

5. Debt – (continued)

Borrowings outstanding on the 2019 Credit Facility and the Amended Agreement as applicable, were \$126,000 and \$96,000, respectively at December 31, 2019 and 2018, respectively.

The Company was in compliance with all credit facility covenants at December 31, 2019 and 2018, respectively.

The Company has outstanding letters of credit of \$1,768 and \$1,815 at December 31, 2019 and 2018, respectively.

Debt

Stoneridge Brazil maintains long-term notes used for working capital purposes which have fixed or variable interest rates. The weighted-average interest rate of long-term debt of Stoneridge Brazil at December 31, 2019 was 7.00%. Depending on the specific note, interest is payable either monthly or annually. Principal repayments of Stoneridge Brazil debt at December 31, 2019 are as follows: \$518 in 2020 and \$454 in 2021.

In December 2019, the Company's wholly-owned subsidiary located in Campinas, Brazil, Stoneridge Brazil, established an overdraft credit line which allows overdrafts on Stoneridge Brazil's bank account up to a maximum level of R\$5,000, or \$1,244, at December 31, 2019. There was no balance outstanding on the overdraft credit line as of December 31, 2019.

The Company's wholly-owned subsidiary located in Stockholm, Sweden, has an overdraft credit line which allows overdrafts on the subsidiary's bank account up to a maximum level of 20,000 Swedish krona, or \$2,136 and \$2,259 at December 31, 2019 and 2018, respectively. At December 31, 2019 and 2018, there was no balance outstanding on this overdraft credit line.

The Company's wholly-owned subsidiary located in Suzhou, China, has two credit lines (the "Suzhou credit line") which allow up to a maximum borrowing level of 60,000 Chinese yuan, or \$8,618 at December 31, 2019. At December 31, 2019 there was \$2,154 in borrowing outstanding on the Suzhou credit line with a weighted-average interest rate of 4.80%. The Suzhou credit line is included on the consolidated balance sheet within current portion of debt. At December 31, 2018, there was no balance outstanding on these credit lines.

The Company was in compliance with all Credit Facility and debt covenants at December 31, 2019 and 2018.

At December 31, 2019, the future maturities of the Credit Facility and debt were as follows:

Year ended December 31,

2020	\$ 2,672
2021	454
2022	—
2023	—
2024	126,000
Total	\$129,126

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6. Income Taxes

The income tax expense included in the accompanying consolidated statement of operations represents federal, state and foreign income taxes. The components of income before income taxes and the provision for income taxes consist of the following:

Year ended December 31,	2019	2018	2017
Income before income taxes:			
Domestic	\$30,464	\$32,907	\$36,657
Foreign	37,929	32,151	15,925
Total income before income taxes	\$68,393	\$65,058	\$52,582
Provision for income taxes:			
Current:			
Federal	\$ (4,384)	\$ 2,370	\$ 2,478
State and foreign	6,900	6,288	11,014
Total current expense	2,516	8,658	13,492
Deferred:			
Federal	\$ 6,780	\$ 3,788	\$ (2,585)
State and foreign	(1,194)	(1,236)	(3,374)
Total deferred benefit	5,586	2,552	(5,959)
Total income tax expense	\$ 8,102	\$11,210	\$ 7,533

A reconciliation of the Company's effective income tax rate to the statutory federal tax rate is as follows:

Year ended December 31,	2019	2018	2017
Statutory U.S. federal income tax rate	21.0%	21.0%	35.0%
State income taxes, net of federal tax benefit	0.2	0.1	(0.8)
Tax credits and incentives	(9.2)	(8.4)	(4.7)
Foreign tax rate differential	2.0	1.1	(4.5)
Impact of change in enacted tax law	1.5	(1.3)	(17.2)
Change in valuation allowance	(0.2)	(3.0)	4.2
U.S. tax on foreign earnings	(4.9)	1.0	—
Compensation and benefits	(0.7)	1.3	(1.1)
Other ^(A)	2.1	5.4	3.4
Effective income tax rate	11.8%	17.2%	14.3%

(A) The amount for 2018 includes the impact of reducing tax attributes due to legal entity consolidation which is completely offset with change in valuation allowance.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
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6. Income Taxes – (continued)

Significant components of the Company's deferred tax assets and liabilities were as follows:

As of December 31,	2019	2018
Deferred tax assets:		
Inventories	\$ 2,254	\$ 2,135
Employee compensation and benefits	2,105	1,225
Accrued liabilities and reserves	3,211	4,181
Property, plant and equipment	552	647
Tax loss carryforwards	7,536	8,437
Tax credit carryforwards	15,448	22,772
Right-of-use assets	4,768	—
Other	582	410
Gross deferred tax assets	36,456	39,807
Less: Valuation allowance	(8,586)	(8,962)
Deferred tax assets less valuation allowance	27,870	30,845
Deferred tax liabilities:		
Property, plant and equipment	(2,071)	(2,545)
Intangible assets	(14,846)	(16,683)
Outside basis difference in foreign subsidiary	(13,750)	(13,750)
Lease liability	(4,695)	—
Other	(375)	(641)
Gross deferred tax liabilities	(35,737)	(33,619)
Net deferred tax liabilities	\$ (7,867)	\$ (2,774)

The balance sheet classification of our net deferred tax asset is shown below:

Year ended December 31,	2019	2018
Long-term deferred tax assets	\$ 4,663	\$ 12,121
Long-term deferred tax liabilities	(12,530)	(14,895)
Net deferred tax liabilities	\$ (7,867)	\$ (2,774)

The Company has recognized deferred taxes related to the expected foreign currency impact upon repatriation from foreign subsidiaries not considered indefinitely reinvested. Any foreign tax on repatriation of earnings not considered to be indefinitely reinvested is expected to be immaterial. At December 31, 2018, the aggregate undistributed earnings of our foreign subsidiaries amounted to \$56,894.

Based on the Company's review of both positive and negative evidence regarding the realizability of deferred tax assets at December 31, 2019, a valuation allowance continues to be recorded against certain deferred tax assets based upon the conclusion that it was more likely than not they would not be realized. The future provision for income taxes may be significantly impacted by changes to valuation allowances in certain countries.

The Company has net operating loss carry forwards of \$57,817 and \$23,851 for state and foreign tax jurisdictions, respectively. The state net operating losses expire from 2026-2035 or have indefinite lives and the foreign net operating losses expire from 2020-2024 or have indefinite lives. The Company has general business and foreign tax credit carry forwards of \$15,833, \$1,711 and \$1,354 for U.S. federal, state and foreign jurisdictions, respectively. The U.S. federal general business credits, if unused, begin to expire in 2025, and the state and foreign tax credits expire at various times.

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6. Income Taxes – (continued)

The following is a reconciliation of the Company's total gross unrecognized tax benefits:

	2019	2018	2017
Balance as of January 1	\$3,481	\$3,645	\$3,839
Tax positions related to the current year:			
Additions	—	—	31
Tax positions related to the prior years:			
Reductions	(32)	(165)	(176)
Expirations of statutes of limitation	—	1	(49)
Balance as of December 31	\$3,449	\$3,481	\$3,645

At December 31, 2019, the Company has classified \$0 as a noncurrent liability and \$3,449 as a reduction to non-current deferred income tax assets. If the Company's tax positions are sustained by the taxing authorities in favor of the Company, the amount that would affect the Company's effective tax rate is approximately \$3,449 and \$3,481 at December 31, 2019 and 2018, respectively.

The Company classifies interest expense and, if applicable, penalties which could be assessed related to unrecognized tax benefits as a component of income tax expense. For the years ended December 31, 2019, 2018 and 2017, the Company recognized approximately \$(5), \$(13) and \$(33) of gross interest and penalties, respectively. The Company has accrued approximately \$0 and \$19 for the payment of interest and penalties at December 31, 2019 and 2018, respectively.

The Company conducts business globally and, as a result, files income tax returns in the U.S. federal jurisdiction and various state and foreign jurisdictions. In the normal course of business, the Company is subject to examination by taxing authorities throughout the world. The following table summarizes the open tax years for each jurisdiction:

Jurisdiction	Open Tax Years
U.S. Federal	2016 – 2019
Argentina	2014 – 2019
Brazil	2014 – 2019
China	2016 – 2019
France	2017 – 2019
Germany	2016 – 2019
Italy	2014 – 2019
Mexico	2014 – 2019
Netherlands	2016 – 2019
Spain	2015 – 2019
Sweden	2014 – 2019
United Kingdom	2018 – 2019

7. Leases

The Company has various cancelable and noncancelable leased assets within all segments, which include certain properties, vehicles and equipment of which are all classified as operating leases. Payments for these leases are generally fixed; however, several of our leases are composed of variable lease payments including index-based payments or inflation-based payments based on a Consumer Price Index ("CPI") or other escalators. Our lease agreements do not contain any material residual value guarantees or material restrictive covenants.

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7. Leases – (continued)

Under Leases (Topic 842), the Company determines an arrangement is a lease when we have the right to control the use of identified property, plant or equipment for a period of time in exchange for consideration. Other than the leases that we have already identified, we are not aware of any material leases that have not yet commenced. For leases that have a calculated lease term of 12 months or less and do not include an option to purchase the underlying asset which we are reasonably certain to exercise, the Company has made the policy election to not apply the recognition requirements in Leases (Topic 842). For these short-term leases, the Company recognizes the lease payments in profit or loss on a straight-line basis over the lease term and variable lease payments in the period in which the obligation for those payments is incurred.

For the leases identified, right of use (“ROU”) assets and lease liabilities are recognized at commencement date based on the present value of lease payments over the lease term. As most of our leases do not provide an implicit rate, the Company used the calculated incremental borrowing rate based on the information available at the implementation date, and going forward at the commencement date, in determining the present value of lease payments. The Company will use the implicit rate when readily determinable. The ROU asset includes the carrying amount of the lease liability, plus (minus) any prepaid (accrued) lease payments, less the unamortized balance of lease incentives received. The Company’s lease terms may include options to extend or terminate the lease and such options are included in the lease term when it is reasonably certain that the Company will exercise that option. Lease expense for lease payments is recognized on a straight-line basis over the lease term. Lease expenses are recognized within COGS, SG&A and design and development (“D&D”) costs in the consolidated statements of operations. The Company has made the policy election to account for lease and non-lease components as a single lease component for all of its leases.

As a result of the Company’s election to apply the modified retrospective transition method at the effective date of the standard, information prior to January 1, 2019 has not been restated and continues to be reported under the accounting standards in effect for the period (ASC Topic 840).

The components of lease expense are as follows:

Year ended December 31,	2019
Operating lease cost	\$5,740
Short-term lease cost	529
Variable lease cost	363
Total lease cost	\$6,632

Balance sheet information related to leases is as follows:

As of December 31,	2019
Assets:	
Operating lease right-of-use assets	\$22,027
Liabilities:	
Operating lease current liability, included in other current liabilities	\$ 4,556
Operating lease long-term liability	17,971
Total leased liabilities	\$22,527

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7. Leases – (continued)

Maturities of operating lease liabilities are as follows:

As of December 31,	2019
2020	\$ 5,238
2021	4,613
2022	3,593
2023	3,489
2024	3,171
Thereafter	7,328
Total future minimum lease payments	\$27,432
Less: imputed interest	(4,905)
Total lease liabilities	\$22,527

Weighted-average remaining lease term and discount rate for operating leases is as follows:

As of December 31,	2019
Weighted-average remaining lease term (in years)	6.71
Weighted-average discount rate	5.75%

Other information:

Year ended December 31,	2019
Operating cash flows:	
Cash paid related to operating lease obligations	\$5,558
Non-cash activity:	
Right-of-use assets obtained in exchange for operating lease obligations	\$6,065

8. Share-Based Compensation Plans

In May 2016, the Company's shareholders approved the 2016 Long-Term Incentive Plan (the "2016 Plan") and reserved 1,800,000 Common Shares (of which the maximum number of Common Shares which may be issued). Under the 2016 Plan, as of December 31, 2019, the Company has granted 1,200,753 share units, of which 476,870 were time-based with cliff vesting using the straight-line method and 723,883 were performance-based. There are 779,684 shares available to be granted under the 2016 Plan at December 31, 2019.

In 2019, 2018 and 2017, pursuant to the 2016 Plan, the Company granted time-based share units and performance-based performance shares. The time-based share units cliff vest three years after the date of grant. The performance based performance shares vest and are no longer subject to forfeiture upon the recipient remaining an employee of the Company for three years from the date of grant and, for a portion of the annual awards, upon the Company attaining certain targets of performance measured against a peer group's three year performance in terms of total shareholder return and, for the remaining portion of the annual awards, upon achieving certain earnings per share targets and return on invested capital targets established by the Company during the performance period of the award.

The allocation of performance shares granted between total shareholder return, earnings per share and return on invested capital were as follows for the years ended December 31:

	2019	2018	2017
Total shareholder return	45%	55%	55%
Earnings per share	36%	45%	45%
Return on invested capital	18%	—%	—%

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8. Share-Based Compensation Plans – (continued)

In April 2005, the Company adopted the Directors' Restricted Shares Plan (the "Director Share Plan") and reserved 500,000 Common Shares for issuance under the Director Share Plan. In May 2013, shareholders approved an amendment to the Director Share Plan to increase the number of shares for issuance by 200,000 to 700,000. In May 2018, the Company's shareholders approved the 2018 Amended and Restated Director's Restricted Shares Plan (the "2018 Director Share Plan") to increase the number of shares for issuance by 150,000 to 850,000. Under the 2018 Director Share Plan, the Company has cumulatively issued 670,797 restricted Common Shares. As such, there are 179,203 restricted Common Shares available to be issued at December 31, 2019. Shares issued annually under the 2018 Director Share Plan are no longer subject to forfeiture one year after the date of grant.

Share Units and Performance Shares

The fair value of the non-vested time-based share unit awards was calculated using the market value of the Common Shares on the date of issuance. The weighted-average grant-date fair value of time-based share units granted during the years ended December 31, 2019, 2018 and 2017 was \$30.01, \$24.69 and \$18.73, respectively.

The fair value of the non-vested performance-based performance share awards with a performance condition requiring the Company to obtain certain earnings per share targets was estimated using the market value of the shares on the date of grant. The fair value of non-vested performance-based performance share awards with a market condition requiring the Company to obtain a total shareholder return target relative to a group of peer companies was estimated using a Monte Carlo valuation model taking into consideration the probability of achievement using multiple simulations. The awards that use earnings per share and return on invested capital as the performance target are expensed beginning when it is probable that the Company will meet the underlying performance condition.

A summary of the status of the Company's non-vested share units and performance shares as of December 31, 2019 and the changes during the year then ended, are presented below:

	Time-based awards		Performance-based awards	
	Share Units	Weighted-average grant date fair value	Performance Shares	Weighted-average grant date fair value
Non-vested as of December 31, 2018	419,996	\$19.64	628,220	\$21.41
Granted	184,645	\$30.01	250,858	\$34.17
Vested	(196,404)	\$17.08	(236,902)	\$14.92
Forfeited or cancelled	(46,403)	\$23.70	(75,840)	\$27.42
Non-vested as of December 31, 2019	361,834	\$25.84	566,336	\$28.97

A summary of the status of the Company's non-vested share units and performance shares as of December 31, 2018 and the changes during the year then ended, are presented below:

	Time-based awards		Performance-based awards	
	Share Units	Weighted-average grant date fair value	Performance Shares	Weighted-average grant date fair value
Non-vested as of December 31, 2017	443,152	\$15.01	744,188	\$14.92
Granted	176,116	\$24.69	215,490	\$29.41
Vested	(182,451)	\$13.21	(284,462)	\$11.19
Forfeited or cancelled	(16,821)	\$19.99	(46,996)	\$17.13
Non-vested as of December 31, 2018	419,996	\$19.64	628,220	\$21.41

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8. Share-Based Compensation Plans – (continued)

As of December 31, 2019, total unrecognized compensation cost related to non-vested time-based share units granted was \$3,924. That cost is expected to be recognized over a weighted-average period of 1.28 years.

For the years ended December 31, 2019, 2018 and 2017, the total fair value of awards vested was \$12,376, \$12,577 and \$8,718, respectively.

As of December 31, 2019, total unrecognized compensation cost related to non-vested performance shares granted was \$3,319 for shares probable to vest. That cost is expected to be recognized over a weighted-average period of 1.27 years dependent upon the achievement of performance conditions. As noted above, the Company has issued and outstanding performance-based share units that use different performance targets (total shareholder return, earnings per share and return on invested capital).

The excess tax benefit realized from the vesting of share units and performance shares of the share-based payment arrangements was \$1,289, \$1,584 and \$858 for the years ended December 31, 2019, 2018 and 2017.

9. Employee Benefit Plans

The Company has certain defined contribution profit sharing and 401(k) plans covering substantially all of its employees in the United States and Europe. The Company provides matching contributions to the Company's 401(k) plan. Company contributions are generally discretionary. For the years ended December 31, 2019, 2018 and 2017, expenses related to these plans amounted to \$4,260, \$3,520 and \$2,601, respectively.

10. Financial Instruments and Fair Value Measurements

Financial Instruments

A financial instrument is cash or a contract that imposes an obligation to deliver, or conveys a right to receive cash or another financial instrument. The carrying values of cash and cash equivalents, accounts receivable and accounts payable are considered to be representative of fair value because of the short maturity of these instruments. The fair value of debt approximates the carrying value of debt.

Derivative Instruments and Hedging Activities

On December 31, 2019, the Company had no open foreign currency forward contracts. During 2019, the Company used foreign currency forward contracts solely for hedging and not for speculative purposes. Management believes that its use of these instruments to reduce risk is in the Company's best interest. The counterparties to these financial instruments are financial institutions with investment grade credit ratings.

Foreign Currency Exchange Rate Risk

The Company conducts business internationally and therefore is exposed to foreign currency exchange rate risk. The Company uses derivative financial instruments as cash flow and fair value hedges to manage its exposure to fluctuations in foreign currency exchange rates by reducing the effect of such fluctuations on foreign currency denominated intercompany transactions, inventory purchases and other foreign currency exposures. The Company hedged the Mexican peso currency during 2019 and, during 2018 and 2017, the Company hedged the euro and Mexican peso. In addition, the Company hedged the U.S. dollar against the Swedish krona and euro on behalf of its European subsidiaries in 2018.

These forward contracts were executed to hedge forecasted transactions and were accounted for as cash flow hedges. As such, the effective portion of the unrealized gain or loss was deferred and reported in the Company's consolidated balance sheets as a component of accumulated other comprehensive loss. The cash flow hedges were highly effective. The effectiveness of the transactions has been and will be measured on an ongoing basis using regression analysis and forecasted future purchases of the currency.

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10. Financial Instruments and Fair Value Measurements – (continued)

In certain instances, the foreign currency forward contracts do not qualify for hedge accounting or are not designated as hedges, and therefore are marked to market with gains and losses recognized in the Company's consolidated statements of operations as a component of other expense (income), net.

The Company's foreign currency forward contracts are designed to offset some of the gains and losses realized on the underlying foreign currency denominated transactions as follows:

Euro-denominated Foreign Currency Forward Contracts

At December 31, 2017, the Company held foreign currency forward contracts with an underlying notional amount of \$1,486 to reduce the exposure related to the Company's euro-denominated intercompany loans. There were no contracts entered into as of December 31, 2019 or 2018 as these contracts were settled in December 2018. This euro-denominated foreign currency forward contract was not designated as a hedging instrument. For the years ended December 31, 2018 and 2017, the Company recognized a gain of \$73 and a loss of \$174, respectively, in the consolidated statements of operations as a component of other expense (income), net related to the euro-denominated contract.

U.S. dollar-denominated Foreign Currency Forward Contracts — Cash Flow Hedge

The Company entered into on behalf of one of its European Electronics subsidiaries whose functional currency is the Swedish krona, U.S. dollar-denominated currency contracts which expired ratably on a monthly basis from February 2018 through December 2018. There were no contracts outstanding as of December 31, 2019 or 2018.

The Company entered into on behalf of one of its European Electronics subsidiaries whose functional currency is the euro, U.S. dollar-denominated currency contracts which expired ratably on a monthly basis from February 2018 through December 2018. There were no contracts outstanding as of December 31, 2019 or 2018.

Mexican peso-denominated Foreign Currency Forward Contracts — Cash Flow Hedge

The Company held Mexican peso-denominated foreign currency contracts during 2019 which expired ratably on a monthly basis from January 2019 through December 2019. The notional amounts at December 31, 2019 and 2018 were \$0 and \$9,017, respectively.

The Company evaluated the effectiveness of the Mexican peso-denominated foreign currency forward contracts held as of December 31, 2019 and 2018, and the years then ended, and concluded that the hedges were effective.

The notional amounts and fair values of derivative instruments in the consolidated balance sheets were as follows:

As of December 31,	Notional amounts ^(A)		Prepaid expenses and other current assets	
	2019	2018	2019	2018
Derivatives designated as hedging instruments:				
Cash flow hedges:				
Forward currency contracts	\$ —	\$9,017	\$ —	\$370

(A) Notional amounts represent the gross contract / notional amount of the derivatives outstanding.

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(in thousands, except share and per share data, unless otherwise indicated)

10. Financial Instruments and Fair Value Measurements – (continued)

Gross amounts recorded for the cash flow hedges in other comprehensive loss in shareholders' equity and in net income for the years ended December 31 were as follows:

	Gain recorded in other comprehensive income (loss)			Gains reclassified from other comprehensive income (loss) into net income ^(A)		
	2019	2018	2017	2019	2018	2017
Derivatives designated as cash flow hedges:						
Forward currency contracts	\$450	\$1,967	\$441	\$820	\$1,376	\$634

(A) Gains reclassified from comprehensive income (loss) into net income recognized in COGS in the Company's consolidated statements of operations for the years ended December 31, 2019, 2018 and 2017 were \$695, \$1,259 and \$622, respectively. Gains reclassified from other comprehensive income (loss) into net income recognized in D&D in the Company's consolidated statements of operations were \$125, \$117 and \$8 for the years ended December 31, 2019, 2018 and 2017, respectively. Gains reclassified from other comprehensive income (loss) into net income recognized in SG&A in the Company's consolidated statements of operations were \$0, \$0 and \$4 for the years ended December 31, 2019, 2018 and 2017, respectively.

The Company has measured the ineffectiveness of the forward currency contracts and any amounts recognized in the consolidated financial statements were immaterial for the years ended December 31, 2019, 2018 and 2017.

Fair Value Measurements

The Company's assets and liabilities are measured at fair value on a recurring basis and are categorized using the three levels of the fair value hierarchy based on the reliability of the inputs used. Fair values estimated using Level 1 inputs consist of quoted prices in active markets for identical assets or liabilities that the Company has the ability to access at the measurement date. Fair values estimated using Level 2 inputs, other than quoted prices, are observable for the asset or liability, either directly or indirectly and include among other things, quoted prices for similar assets or liabilities in markets that are active or inactive as well as inputs other than quoted prices that are observable. For forward currency contracts, inputs include foreign currency exchange rates. Fair values estimated using Level 3 inputs consist of significant unobservable inputs.

The following table presents our assets and liabilities that are measured at fair value on a recurring basis and are categorized using the three levels of the fair value hierarchy based on the reliability of inputs used.

As of December 31,	2019				2018
	Fair values estimated using				
	Fair value	Level 1 inputs	Level 2 inputs	Level 3 inputs	Fair value
Financial assets carried at fair value:					
Forward currency contracts	\$ —	\$ —	\$ —	\$ —	\$ 370
Total financial assets carried at fair value	\$ —	\$ —	\$ —	\$ —	\$ 370
Financial liabilities carried at fair value:					
Earn-out consideration	\$12,011	\$ —	\$ —	\$12,011	\$18,672
Total financial liabilities carried at fair value	\$12,011	\$ —	\$ —	\$12,011	\$18,672

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10. Financial Instruments and Fair Value Measurements – (continued)

The following table sets forth a summary of the change in fair value of the Company's Level 3 financial liabilities related to earn-out consideration that are measured at fair value on a recurring basis.

	Orlaco	Stoneridge Brazil	Total
Balance at December 31, 2018	\$ 8,602	\$10,070	\$18,672
Change in fair value	—	2,308	2,308
Foreign currency adjustments	(128)	(367)	(495)
Earn-out consideration cash payment	(8,474)	—	(8,474)
Balance at December 31, 2019	\$ —	\$12,011	\$12,011
	Orlaco	Stoneridge Brazil	Total
Balance at December 31, 2017	\$ 8,637	\$12,109	\$20,746
Change in fair value	369	(156)	213
Foreign currency adjustments	(404)	(1,883)	(2,287)
Balance at December 31, 2018	\$ 8,602	\$10,070	\$18,672

The Company will be required to pay the Stoneridge Brazil earn-out consideration, which is not capped, based on Stoneridge Brazil's financial performance in either 2020 or 2021. The fair value of the Stoneridge Brazil earn-out consideration is based on discounted cash flows utilizing forecasted earnings before interest, depreciation and amortization ("EBITDA") in 2020 and 2021 using the key inputs of forecasted sales and expected operating income reduced by the market required rate of return. The former Stoneridge Brazil owners may choose either the 2020 or 2021 financial performance period to be used to determine the earn-out consideration payment. The former Stoneridge Brazil owners must choose the 2020 financial performance period by March 31, 2021 otherwise the 2021 financial performance period will automatically be used. The earn-out consideration obligation related to Stoneridge Brazil is recorded within other long-term liabilities in the consolidated balance sheets as of December 31, 2019 and 2018. The fair value of the Orlaco earn-out consideration was based on a Monte Carlo simulation utilizing forecasted EBITDA for the 2017 and 2018 earn-out period as well as a growth rate reduced by the market required rate of return. The earn-out consideration obligation related to Orlaco was recorded within other current liabilities in the consolidated balance sheet as of December 31, 2018. The change in fair value of the earn-out considerations are recorded within selling, general and administrative ("SG&A") expense in the consolidated statements of operations for the years ended December 31, 2019 and 2018.

The earn-out consideration obligation related to Orlaco of \$8,474 was paid in March 2019 and recorded in the consolidated statement of cash flows within operating and financing activities in the amounts of \$5,080 and \$3,394, respectively, for the year ended December 31, 2019.

The Orlaco earn-out consideration reached the capped amount of €7,500 as of the quarter ended March 31, 2018 due to actual performance exceeding forecasted performance and remained at the capped amount until it was paid out in March 2019. The change in fair value of the earn-out consideration for Stoneridge Brazil was due to the reduced time from the current period end to the payment date, offset by adverse foreign currency translation. The foreign currency impact for the Stoneridge Brazil earn-out considerations is included in other expense (income), net in the consolidated statements of operations.

There were no transfers in or out of Level 3 from other levels in the fair value hierarchy for the year ended December 31, 2019.

Except for the fair value of assets acquired and liabilities assumed related to the Orlaco acquisition discussed in Note 2, no non-recurring fair value adjustments were required for nonfinancial assets for the years ended December 31, 2019 and 2018.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
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11. Commitments and Contingencies

From time to time we are subject to various legal actions and claims incidental to our business, including those arising out of breach of contracts, product warranties, product liability, patent infringement, regulatory matters and employment-related matters. The Company establishes accruals for matters which it believes that losses are probable and can be reasonably estimated. Although it is not possible to predict with certainty the outcome of these matters, the Company is of the opinion that the ultimate resolution of these matters will not have a material adverse effect on its consolidated results of operations or financial position.

As a result of environmental studies performed at the Company's former facility located in Sarasota, Florida, the Company became aware of soil and groundwater contamination at this site. The Company engaged an environmental engineering consultant to assess the level of contamination and to develop a remediation and monitoring plan for the site. Soil remediation at the site was completed during the year ended December 31, 2010. Upon approval of the remedial action plan by the Florida Department of Environmental Protection, ground water remediation began in the fourth quarter of 2015. During the years ended December 31, 2019, 2018 and 2017, environmental remediation costs incurred were immaterial. At December 31, 2019 and 2018, the Company had accrued an undiscounted liability of \$82 and \$111, respectively, related to future remediation costs which were recorded as a component of accrued expenses and other current liabilities on the consolidated balance sheets. Costs associated with the recorded liability will be incurred to complete the groundwater remediation, with the balance relating to monitoring costs to be incurred over multiple years. The recorded liability is based on assumptions in the remedial action plan. Although the Company sold the Sarasota facility in December 2011, the liability to remediate the site contamination remains the responsibility of the Company. Due to the ongoing site remediation, the Company is currently required to maintain a \$1,489 letter of credit for the benefit of the buyer.

The Company's Stoneridge Brazil subsidiary has civil, labor and other non-income tax contingencies for which the likelihood of loss is deemed to be reasonably possible, but not probable, by the Company's legal advisors in Brazil. As a result, no provision has been recorded with respect to these contingencies, which amounted to R\$29,200 (\$7,300) and R\$29,700 (\$7,600) at December, 2019 and 2018, respectively. An unfavorable outcome on these contingencies could result in significant cost to the Company and adversely affect its results of operations.

Insurance Recoveries

The Company incurred losses and incremental costs related to the damage to assets caused by a storm at its Mexican production facility in the fourth quarter of 2016 and is pursuing recovery of such costs under applicable insurance policies. Anticipated proceeds from insurance recoveries related to losses and incremental costs that have been incurred ("loss recoveries") are recognized when receipt is probable. Anticipated proceeds from insurance recoveries in excess of the net book value of damaged property, plant and equipment ("insurance gain contingencies") are recognized when all contingencies related to the claim have been resolved.

Loss recoveries related to the damage of inventory and incremental costs included in COGS were not significant for the years ended December 31, 2019 and 2018, respectively, and there were no loss recoveries and insurance gain contingencies related to the damage of property, plant and equipment included within SG&A expense. In 2017, loss recoveries related to the damage of inventory and incremental costs included in COGS were \$189 and loss recoveries and insurance gain contingencies related to the damage of property, plant and equipment included within SG&A expense were \$1,923. As of December 31, 2017, the Company had confirmation of the open insurance claim and recorded a receivable of \$1,644. The cash payment was subsequently received in January 2018. Cash proceeds related to the damage of inventory and incremental costs were \$241 and \$500 for the years ended December 31, 2018 and 2017, respectively, and are included in cash flows from operating activities. Cash proceeds related to the damage of property, plant and equipment of \$1,403 and \$711 for the years ended December 31, 2018 and 2017, respectively, are included in cash flows from investing activities. Cash proceeds received during the year ended December 21, 2019 were immaterial.

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11. Commitments and Contingencies – (continued)

Brazilian Indirect Tax

In March 2017, the Supreme Court of Brazil issued a decision concluding that a certain state value added tax should not be included in the calculation of federal gross receipts taxes. The decision reduced Stoneridge Brazil's gross receipts tax prospectively and, potentially, retrospectively. In April 2019, the Company received judicial notification that the Superior Judicial Court of Brazil rendered a favorable decision on Stoneridge Brazil's case granting the Company the right to recover, through offset of federal tax liabilities, amounts collected by the government from June 2010 to February 2017. Based on the Company's determination that these tax credits will be used prior to expiration, we recorded a pre-tax benefit of \$6,473 as a reduction to SG&A expense which is inclusive of related interest income of \$2,392, net of applicable professional fees of \$990 in the year ended December 31, 2019. The Company received administrative approval in January 2020 and is now able to offset eligible federal tax with these tax credits.

The Brazilian tax authorities have sought clarification before the Supreme Court of Brazil (in a leading case involving another taxpayer) of certain matters that could affect the rights of Brazilian taxpayers regarding these credits, and a hearing is scheduled for April 2020. If the Brazilian tax authorities challenge our rights to these credits, we may become subject to new litigation that could impact the amount ultimately realized by Stoneridge Brazil.

12. Headquarter Relocation and Consolidation

During the fourth quarter of 2016, the Company relocated its corporate headquarters from Warren, Ohio to Novi, Michigan and consolidated its other corporate functions into one location. As a result, the Company incurred headquarter relocation costs recorded within SG&A expense, which included employee retention, relocation, severance, recruiting, duplicate wages and professional fees, of \$269 and \$493 for the years ended December 31, 2018 and 2017, respectively. There were no headquarter relocation costs incurred in 2019.

In connection with the headquarter relocation, the Company was approved for a Michigan Business Development Program grant of up to \$1,400 based upon the number of new jobs created in Michigan through 2022. As a result of the attainment of the first, second and third milestones, grant income of \$429, \$312 and \$338 was recognized during the years ended December 31, 2019, 2018 and 2017, respectively, within SG&A expense in the consolidated statements of operations.

13. Restructuring and Business Realignment

On January 10, 2019, the Company committed to a restructuring plan that will result in the closure of the Canton, Massachusetts facility ("Canton Facility") which is expected by March 31, 2020 and the consolidation of manufacturing operations at that site into other Company locations ("Canton Restructuring"). Company management informed employees at the Canton Facility of this restructuring decision on January 11, 2019. The estimated costs for the Canton Restructuring include employee severance and termination costs, contract terminations costs, professional fees and other related costs such as moving and set-up costs for equipment and costs to restore the engineering function previously located at the Canton Facility.

The Company recognized expense of \$12,530 for the year ended December 31, 2019 as a result of these actions for employee termination benefits and other restructuring related costs. For the year ended December 31, 2019 severance and other related restructuring costs of \$7,625, \$1,526 and \$3,379 were recognized in COGS, SG&A and D&D, respectively, in the consolidated statement of operations. The estimated additional cost of the Canton Facility restructuring plan, that will impact the Control Devices segment, is between \$1,500 and \$1,900 and will be incurred through 2020.

The expenses for the 2019 Canton Restructuring that relate to the Control Devices reportable segment include the following:

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13. Restructuring and Business Realignment – (continued)

	Accrual as of January 1, 2019	2019 Charge to Expense	Cash	Utilization Non-Cash	Accrual as of December 31, 2019
Employee termination benefits	\$ —	\$ 8,088	\$(5,452)	\$ —	\$2,636
Other related costs	—	4,442	(4,442)	—	—
Total	\$ —	\$12,530	\$(9,894)	\$ —	\$2,636

In the fourth quarter of 2018, we undertook restructuring actions for our Electronics segment affecting our European Aftermarket business and China operations. The Company recognized expense of \$603 and \$3,539, respectively, for the years ended December 31, 2019 and 2018 as a result of these actions for severance, contract termination costs, accelerated depreciation of fixed assets and other related costs. Electronics segment restructuring costs were recorded in SG&A in the consolidated statements of operations for the year ended December 31, 2019. Excess and obsolete inventory write-offs of \$823 were recognized in COGS for the year ended December 31, 2018 and all other restructuring costs were recognized in SG&A in the consolidated statement of operations. The Company expects to incur approximately \$400 of additional restructuring costs related to the actions through 2020.

The expenses for the 2019 restructuring activities that relate to the Electronics reportable segment include the following:

	Accrual as of January 1, 2019	2019 Charge to Expense (Income)	Cash	Utilization Non-Cash	Accrual as of December 31, 2019
Employee termination benefits	\$520	\$ (18)	\$(453)	\$ 3	\$52
Accelerated depreciation	—	289	—	(289)	—
Contract termination costs	17	9	(26)	—	—
Other related costs	119	323	(442)	—	—
Total	\$656	\$603	\$(921)	\$(286)	\$52

The expenses for the 2018 restructuring activities that relate to the Electronics reportable segment include the following:

	Accrual as of January 1, 2018	2018 Charge to Expense	Cash	Utilization Non-Cash	Accrual as of December 31, 2018
Employee termination benefits	\$ —	\$1,939	\$(1,419)	\$ —	\$520
Excess and obsolete inventory	—	823	—	(823)	—
Intangible impairment	—	200	—	(200)	—
Fixed asset impairment	—	157	—	(157)	—
Contract termination costs	—	156	(139)	—	17
Other related costs	—	264	(145)	—	119
Total	\$ —	\$3,539	\$(1,703)	\$(1,180)	\$656

In addition to the specific restructuring activities, the Company regularly evaluates the performance of its businesses and cost structures, including personnel, and makes necessary changes thereto in order to optimize its results. The Company also evaluates the required skill sets of its personnel and periodically makes strategic changes. As a consequence of these actions, the Company incurs severance related costs which are referred to as business realignment charges.

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13. Restructuring and Business Realignment – (continued)

Business realignment charges by reportable segment were as follows:

Year ended December 31,	2019	2018	2017
Control Devices ^(A)	\$ 682	\$169	\$ —
Electronics ^(B)	99	63	1,223
Stoneridge Brazil ^(C)	—	478	589
Unallocated Corporate ^(D)	1,048	—	—
Total business realignment charges	\$1,829	\$710	\$1,812

- (A) Business realignment severance costs for the year ended December 31, 2019 related to SG&A were \$682. Business realignment severance costs for the year ended December 31, 2018 related to D&D and SG&A were \$128 and \$41, respectively.
- (B) Business realignment severance costs for the year ended December 31, 2019 related to SG&A were \$99. Business realignment severance costs for the year ended December 31, 2018 related to SG&A were \$63. Business realignment severance costs for the year ended December 31, 2017 related to COGS and SG&A were \$56 and \$1,167, respectively.
- (C) Business realignment severance costs for the year ended December 31, 2018 related to COGS, SG&A and D&D were \$63, \$387 and \$28, respectively. Business realignment severance costs for the year ended December 31, 2017 related to COGS, SG&A and D&D were \$370, \$218 and \$1, respectively.
- (D) Business realignment severance costs for the year ended December 31, 2019 related to SG&A were \$1,048.

Business realignment charges classified by statement of operations line item were as follows:

Year ended December 31,	2019	2018	2017
Cost of goods sold	\$ —	\$ 63	\$ 426
Selling, general and administrative	1,829	491	1,385
Design and development	—	156	1
Total business realignment charges	\$1,829	\$710	\$1,812

14. Segment Reporting

Operating segments are defined as components of an enterprise that are evaluated regularly by the Company's chief operating decision maker in deciding how to allocate resources and in assessing performance. The Company's chief operating decision maker is the chief executive officer.

The Company has three reportable segments, Control Devices, Electronics and Stoneridge Brazil, which also represent its operating segments. The Control Devices reportable segment produces actuators, sensors, switches and connectors. The Electronics reportable segment produces driver information systems, camera-based vision systems, connectivity and compliance products and electronic control units. The Stoneridge Brazil reportable segment designs and manufactures vehicle tracking devices and monitoring services, vehicle security alarms and convenience accessories, in-vehicle audio and infotainment devices and telematics solutions.

The accounting policies of the Company's reportable segments are the same as those described in Note 2. The Company's management evaluates the performance of its reportable segments based primarily on revenues from external customers, capital expenditures and operating income. Inter-segment sales are accounted for on terms similar to those to third parties and are eliminated upon consolidation.

The financial information presented below is for our three reportable operating segments and includes adjustments for unallocated corporate costs and intercompany eliminations, where applicable. Such costs and eliminations do not meet the requirements for being classified as an operating segment. Corporate costs include various support functions, such as accounting/finance, executive administration, human resources, information technology and legal.

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14. Segment Reporting – (continued)

A summary of financial information by reportable segment is as follows:

Year ended December 31,	2019	2018	2017
Net Sales:			
Control Devices	\$431,560	\$441,297	\$447,528
Inter-segment sales	6,438	8,348	5,044
Control Devices net sales	437,998	449,645	452,572
Electronics	335,195	344,727	282,383
Inter-segment sales	33,735	37,126	39,501
Electronics net sales	368,930	381,853	321,884
Stoneridge Brazil	67,534	80,175	94,533
Inter-segment sales	6	2	563
Stoneridge Brazil net sales	67,540	80,177	95,096
Eliminations	(40,179)	(45,476)	(45,108)
Total net sales	\$834,289	\$866,199	\$824,444
Operating Income (Loss):			
Control Devices	\$ 73,327	\$ 64,191	\$ 72,555
Electronics	25,006	28,236	18,119
Stoneridge Brazil	6,539	4,989	2,661
Unallocated Corporate ^(A)	(33,591)	(30,412)	(35,965)
Total operating income	\$ 71,281	\$ 67,004	\$ 57,370
Depreciation and Amortization:			
Control Devices	\$ 13,397	\$ 11,914	\$ 10,887
Electronics	9,872	8,982	8,143
Stoneridge Brazil	6,338	7,443	8,316
Unallocated Corporate	1,252	852	584
Total depreciation and amortization ^(B)	\$ 30,859	\$ 29,191	\$ 27,930
Interest Expense, net:			
Control Devices	\$ 811	\$ 76	\$ 103
Electronics	350	85	119
Stoneridge Brazil	208	824	1,812
Unallocated Corporate	2,955	3,735	3,749
Total interest expense, net	\$ 4,324	\$ 4,720	\$ 5,783
Capital Expenditures:			
Control Devices	\$ 12,646	\$ 16,737	\$ 17,484
Electronics	15,476	5,965	8,158
Stoneridge Brazil	5,003	3,242	3,831
Unallocated Corporate ^(C)	2,699	3,083	2,697
Total capital expenditures	\$ 35,824	\$ 29,027	\$ 32,170

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14. Segment Reporting – (continued)

As of December 31,	2019	2018
Total Assets:		
Control Devices	\$ 191,491	\$ 175,708
Electronics	285,027	265,838
Stoneridge Brazil	89,393	81,002
Corporate ^(C)	358,766	359,837
Eliminations	(322,468)	(322,866)
Total assets	\$ 602,209	\$ 559,519

The following table presents net sales and long-term assets for the geographic areas in which the Company operates:

Year ended December 31,	2019	2018	2017
Net Sales:			
North America	\$457,633	\$480,511	\$471,770
South America	67,534	80,175	94,533
Europe and Other	309,122	305,513	258,141
Total net sales	\$834,289	\$866,199	\$824,444

As of December 31	2019	2018
Long-term Assets:		
North America	\$ 87,430	\$ 86,763
South America	52,518	45,408
Europe and Other	130,995	107,171
Total long-term assets	\$270,943	\$239,342

(A) Unallocated Corporate expenses include, among other items, accounting/finance, human resources, information technology and legal costs as well as share-based compensation.

(B) These amounts represent depreciation and amortization on property, plant and equipment and certain intangible assets.

(C) Assets located at Corporate consist primarily of cash, intercompany loan receivables, fixed and leased assets for the headquarter building, information technology assets, equity investments and investments in subsidiaries.

15. Subsequent Events

Interest Rate Swap

On February 18, 2020, the Company entered into a float-to-fixed interest rate swap, with a notional amount of \$50,000 to reduce the variability of London Inter-bank Offered Rate ("LIBOR") based interest payments on a portion of variable rate debt outstanding on the Company's 2019 Credit Facility, as disclosed in Note 5 to the consolidated financial statements, by swapping variable rate payments into fixed rate payments. Currently, borrowings under the 2019 Credit Facility bear interest based on a variable interest rate at either the Base Rate or LIBOR Rate (as defined in the Fourth Amended and Restated Credit Agreement). The interest rate swap will be settled monthly and will expire in March 2023.

Authorization For Common Share Repurchase

On February 24, 2020, the Board of Directors of Stoneridge, Inc. authorized the repurchase of \$50.0 million of the Company's outstanding Common Shares over the next 18 months. The repurchases may be made from time to time in either open market transactions or in privately negotiated transactions. Repurchases may also be made under Rule 10b5-1 plans, which permit Common Shares to be repurchased through pre-determined criteria. The timing, volume and nature of common share repurchases will be at the discretion of management,

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15. Subsequent Events – (continued)

dependent on market conditions, other priorities of cash investment, applicable securities laws and other factors. This Common Share repurchase program authorization does not obligate the Company to acquire any particular amount of its Common Shares, and it may be suspended or discontinued at any time.

Accelerated Share Repurchase Program Early Termination

On February 25, 2020, Citibank N.A. notified the Company that it terminated early its commitment pursuant the accelerated share repurchase agreement and would deliver to the Company 364,604 Common Shares on February 27, 2020 based on the volume weighted-average price of our Common Shares during the term set forth in the accelerated share repurchase agreement. Citibank N.A.'s notice of early termination and the subsequent delivery Common Shares represents the final settlement of the Company's share repurchase program pursuant to accelerated share repurchase agreement.

16. Unaudited Quarterly Financial Data

The following is a summary of quarterly results of operations:

	Quarter ended			
2019	December 31	September 30	June 30 ^(B)	March 31
Net sales	\$190,365	\$203,386	\$222,241	\$218,297
Gross profit	44,198	51,855	56,827	60,853
Operating income	1,073	9,323	49,186	11,699
Income tax expense (benefit)	(4,249)	1,450	9,066	1,835
Net income	4,209	6,661	39,764	9,657
Earnings per share attributable to Stoneridge, Inc.:				
Basic ^(A)	\$ 0.15	\$ 0.24	\$ 1.43	\$ 0.34
Diluted ^(A)	\$ 0.15	\$ 0.24	\$ 1.41	\$ 0.33

	Quarter ended			
2018	December 31	September 30	June 30	March 31
Net sales	\$210,814	\$208,853	\$220,602	\$225,930
Gross profit	57,959	63,285	67,418	67,969
Operating income	12,664	18,312	19,181	16,847
Income tax expense	690	3,467	3,820	3,233
Net income	12,056	13,292	15,120	13,380
Earnings per share attributable to Stoneridge, Inc.:				
Basic ^(A)	\$ 0.42	\$ 0.47	\$ 0.53	\$ 0.47
Diluted ^(A)	\$ 0.42	\$ 0.46	\$ 0.52	\$ 0.46

(A) Earnings per share for the year may not equal the sum of the four historical quarters earnings per share due to changes in weighted-average basic and diluted shares outstanding.

(B) The Company recognized a gain on disposal of Non-core Products in our Control Devices segment, net of \$33,599 in the quarter ended June 30, 2019. See Note 2 to the Company's consolidated financial statements for further information.

SCHEDULE II — VALUATION AND QUALIFYING ACCOUNTS

The following schedule provides the activity for accounts receivable reserves and valuation allowance for deferred tax assets for the years ended December 31, 2019, 2018 and 2017 (in thousands):

	Balance at beginning of period	Charged to costs and expenses	Write-offs	Balance at end of period
Accounts receivable reserves:				
Year ended December 31, 2019	\$1,243	\$1,126	\$(1,080)	\$1,289
Year ended December 31, 2018	1,109	1,244	(1,110)	1,243
Year ended December 31, 2017	1,630	2,173	(2,694)	1,109
	Balance at beginning of period	Net additions charged to expense (benefit)	Exchange rate fluctuations and other items	Balance at end of period
Valuation allowance for deferred tax assets:				
Year ended December 31, 2019	\$ 8,962	\$ (138)	\$ (238)	\$ 8,586
Year ended December 31, 2018	11,986	(1,922)	(1,102)	8,962
Year ended December 31, 2017	11,125	874	(13)	11,986

Item 9. Changes In and Disagreements With Accountants On Accounting and Financial Disclosure.

There have been no disagreements between the management of the Company and its Independent Registered Public Accounting Firm on any matter of accounting principles or practices of financial statement disclosures, or auditing scope or procedure.

Item 9A. Controls and Procedures.***Evaluation of Disclosure Controls and Procedures***

As of December 31, 2019, an evaluation was performed under the supervision and with the participation of the Company's management, including the principal executive officer ("PEO") and principal financial officer ("PFO"), of the effectiveness of the design and operation of the Company's disclosure controls and procedures as defined in Rule 13a-15(e) and Rule 15d-15(e) of the Securities Exchange Act of 1934, as amended. Based on that evaluation, the Company's PEO and PFO, concluded that the Company's disclosure controls and procedures were effective as of December 31, 2019.

Management's Report on Internal Control Over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting, as such term is defined in Exchange Act Rules 13a-15(f) and 15d-15(f). In evaluating the Company's internal control over financial reporting, management has adopted the framework in *Internal Control — Integrated Framework* issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 Framework). Under the supervision and with the participation of our management, including the PEO and PFO, we conducted an evaluation of the effectiveness of our internal control over financial reporting, as of December 31, 2019. Based on our evaluation under the framework in *Internal Control — Integrated Framework* (2013 Framework), our management has concluded that our internal control over financial reporting was effective as of December 31, 2019.

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

Ernst & Young LLP, an independent registered public accounting firm, as auditor of the Company's financial statements, has issued an attestation report on the Company's internal control over financial reporting as of December 31, 2019. Ernst & Young's report is included herein.

Changes in Internal Control Over Financial Reporting

There were no changes to our internal controls over financial reporting during the quarter ended December 31, 2019 that has materially or is reasonably likely to materially affect internal control over financial reporting.

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Shareholders and the Board of Directors of Stoneridge, Inc.

Opinion on Internal Control over Financial Reporting

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

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the consolidated balance sheets of the Company as of December 31, 2019 and 2018, the related consolidated statements of operations, comprehensive income, cash flows and shareholders' equity for each of the three years in the period ended December 31, 2019, and the related notes and financial statement schedule of the Company and our report dated February 27, 2020 expressed an unqualified opinion thereon.

Basis for Opinion

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

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

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

Definition and Limitations of Internal Control Over Financial Reporting

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

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

Ernst + Young LLP

Detroit, Michigan
February 27, 2020

Item 9B. Other Information.

None.

PART III

Item 10. Directors, Executive Officers and Corporate Governance.

The information required by this Item 10 regarding our directors is incorporated by reference to the information under the sections and subsections entitled, “Proposal One: Election of Directors,” “Section 16(a) Beneficial Ownership Reporting Compliance” and “Corporate Governance” contained in the Company’s Proxy Statement in connection with its Annual Meeting of Shareholders to be held on May 12, 2020. The information required by this Item 10 regarding our executive officers appears as a Supplementary Item following Item 1 under Part I, hereof.

Item 11. Executive Compensation.

The information required by this Item 11 is incorporated by reference to the information under the sections and subsections “Compensation Committee,” “Compensation Committee Interlocks and Insider Participation,” “Compensation Committee Report” and “Executive Compensation” contained in the Company’s Proxy Statement in connection with its Annual Meeting of Shareholders to be held on May 12, 2020.

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

The information required by this Item 12 (other than the information required by Item 201(d) of Regulation S-K which is set forth below) is incorporated by reference to the information under the heading “Security Ownership of Certain Beneficial Owners and Management” contained in the Company’s Proxy Statement in connection with its Annual Meeting of Shareholders to be held on May 12, 2020.

In May 2010, we adopted an Amended Directors’ Restricted Share Plan and an Amended and Restated Long-Term Incentive Plan, as amended. In May 2013, we adopted an Amended Directors’ Restricted Shares Plan and an Amended and Restated Long-Term Incentive Plan, as amended, to increase the number of shares available for issuance under the plans. In May 2016, we adopted the 2016 Long-Term Incentive Plan. In May 2018, we adopted the 2018 Amended and Restated Director’s Restricted Shares Plan. Our shareholders approved each plan.

Equity compensation plan information as of December 31, 2019 is as follows:

	Number of securities remaining available for future issuance under equity compensation plans^(A)
Equity compensation plans approved by shareholders	958,887
Equity compensation plans not approved by shareholders	—

(A) Excludes 903,425 share units issued to key employees pursuant to the Company’s 2016 Long-Term Incentive Plan.

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

The information required by this Item 13 is incorporated by reference to the information under the subsections “Transactions with Related Persons”, “Review and Approval of Transactions with Related Persons” and “Director Independence” contained in the Company’s Proxy Statement in connection with its Annual Meeting of Shareholders to be held on May 12, 2020.

Item 14. Principal Accounting Fees and Services.

The information required by this Item 14 is incorporated by reference to the information under the subsections “Service Fees Paid to Independent Registered Accounting Firm” and “Pre-Approval Policies and Procedures” contained in the Company’s Proxy Statement in connection with its Annual Meeting of Shareholders to be held on May 12, 2020.

PART IV

Item 15. Exhibits, Financial Statement Schedule.

(a) The following documents are filed as part of this Form 10-K.

	Page in Form 10-K
(1) Consolidated Financial Statements:	
Report of Independent Registered Public Accounting Firm	39
Consolidated Balance Sheets as of December 31, 2019 and 2018	42
Consolidated Statements of Operations for the Years Ended December 31, 2019, 2018 and 2017	43
Consolidated Statements of Comprehensive Income for the Years Ended December 31, 2019, 2018 and 2017	44
Consolidated Statements of Cash Flows for the Years Ended December 31, 2019, 2018 and 2017	45
Consolidated Statements of Shareholders' Equity for the Years Ended December 31, 2019, 2018 and 2017	46
Notes to Consolidated Financial Statements	47
(2) Financial Statement Schedule:	
Schedule II — Valuation and Qualifying Accounts	82
(3) Exhibits:	88

Exhibit Number	Exhibit
2.1	Asset Purchase Agreement, dated April 1, 2019, by and among Standard Motor Products, Inc., Stoneridge, Inc. and Stoneridge Control Devices, Inc. (incorporated by reference to the Company's Current Report on Form 8-K filed on April 5, 2019).
3.1	Second Amended and Restated Articles of Incorporation of the Company (incorporated by reference to the Company's Quarterly Report on Form 10-Q for the quarter ended March 31, 1999).
3.2	Amended and Restated Code of Regulations of the Company (incorporated by reference to Exhibit 3.1 to the Company's Quarterly Report on Form 10-Q for the quarter ended June 30, 2007).
4.1	Common Share Certificate (incorporated by reference to Exhibit 4.1 to the Company's Annual Report on Form 10-K for the year ended December 31, 1997).
4.2	Description of Stoneridge, Inc. Common Shares registered under Section 12 of the Securities Exchange Act of 1934, as amended, filed herewith.
10.1	Form of Directors' Restricted Shares Plan Grant Agreement under the Directors' Restricted Shares Plan (incorporated by reference to the Company's Annual Report on Form 10-K for the year ended December 31, 2017)*.
10.2	Stoneridge, Inc. Deferred Compensation Plan (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on June 2, 2017)*.
10.3	First Amendment to the Stoneridge, Inc. Deferred Compensation Plan (incorporated by reference to Exhibit 10.2 to the Company's Quarterly Report on Form 10-Q filed on October 26, 2018)*.
10.4	Annual Incentive Plan (incorporated by reference to Exhibit 99.1 to the Company's Current Report on Form 8-K filed on May 12, 2016)*.
10.5	Stoneridge, Inc. Long-Term Cash Incentive Plan (incorporated by reference to Exhibit 10.3 to the Company's Quarterly Report on Form 10-Q for the quarter ended June 30, 2009)*.
10.6	Amended and Restated Officers' and Key Employees' Severance Plan of Stoneridge, Inc. (incorporated by reference to Exhibit 10.6 to the Company's Annual Report on Form 10-K for the year ended December 31, 2017)*.
10.7	Stoneridge, Inc. Amended and Restated Long-Term Incentive Plan – Form of Restricted Shares Grant Agreement (incorporated by reference to Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q for the quarter ended March 31, 2010)*.
10.8	Form of Phantom Share Grant Agreement under the Stoneridge, Inc. Long-Term Cash Incentive Plan (incorporated by reference to Exhibit 10.2 to the Company's Quarterly Report on Form 10-Q for the quarter ended March 31, 2010)*.
10.9	Stoneridge, Inc. 2018 Amended and Restated Directors' Restricted Shares Plan (incorporated by reference to Exhibit 99.1 to the Company's Current Report on Form 8-K filed on May 16, 2018)*.
10.10	Form of Performance Share Grant Agreement under the Stoneridge, Inc. Long-Term Incentive Plan (incorporated by reference to Exhibit 10.12 to the Company's Annual Report on Form 10-K for the year ended December 31, 2017)*.
10.11	Form of Share Units Grant Agreement under the Stoneridge, Inc. 2016 Long-Term Incentive Plan (incorporated by reference to Exhibit 10.13 to the Company's Annual Report on Form 10-K for the year ended December 31, 2017)*.
10.12	Stoneridge, Inc. 2016 Long-Term Incentive Plan (incorporated by reference to Exhibit 99.2 to the Company's Current Report on Form 8-K filed on May 12, 2016)*.

Exhibit Number	Exhibit
10.13	Amended and Restated Change in Control Agreement (incorporated by reference to Exhibit 10.19 to the Company's Annual Report on Form 10-K for the year ended December 31, 2018)*.
10.14	Employment Agreement, dated March 16, 2015, between the Company and Jonathan B. DeGaynor (incorporated by reference to Exhibit 10.2 to the Company's Current Report on Form 8-K filed on March 19, 2015)*.
10.15	Indemnification Agreement between the Company and Jonathan B. DeGaynor (incorporated by reference to Exhibit 10.3 to the Company's Current Report on Form 8-K filed on March 19, 2015).
10.16	Accelerated Share Repurchase Agreement, dated May 7, 2019, between Stoneridge, Inc. and Citibank (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on May 8, 2019).
10.17	Fourth Amended and Restated Credit Agreement (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on June 7, 2019).
21.1	Principal Subsidiaries and Affiliates of the Company, filed herewith.
23.1	Consent of Independent Registered Public Accounting Firm, filed herewith.
31.1	Chief Executive Officer certification pursuant to Section 302 of the Sarbanes-Oxley Act of 2002, filed herewith.
31.2	Chief Financial Officer certification pursuant to Section 302 of the Sarbanes-Oxley Act of 2002, filed herewith.
32.1	Chief Executive Officer certification pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, filed herewith.
32.2	Chief Financial Officer certification pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, filed herewith.
101.INS	XBRL Instance Document – the instance document does not appear in the Interactive Data File because its XBRL tags are embedded within the Inline XBRL document
101.SCH	Inline XBRL Taxonomy Extension Schema Document
101.CAL	Inline XBRL Taxonomy Extension Calculation Linkbase Document
101.DEF	Inline XBRL Taxonomy Extension Definition Linkbase Document
101.LAB	Inline XBRL Taxonomy Extension Label Linkbase Document
101.PRE	Inline XBRL Taxonomy Extension Presentation Linkbase Document
104	Cover Page Interactive Data File – the cover page XBRL tags are embedded within the Inline XBRL document

* — Reflects management contract or compensatory plan or arrangement required to be filed as an exhibit pursuant to Item 15(b) of this Annual Report on Form 10-K.

(b) The exhibits listed are filed as part of or incorporated by reference into this report.

(c) Additional Financial Statement Schedules. None.

SIGNATURES

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

STONERIDGE, INC.

Date: February 26, 2020

/s/ ROBERT R. KRAKOWIAK

Robert R. Krakowiak
*Executive Vice President, Chief Financial Officer
and Treasurer*
(Principal Financial Officer)

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

Date: February 26, 2020

/s/ JONATHAN B. DEGAYNOR

Jonathan B. DeGaynor
President, Chief Executive Officer and Director
(Principal Executive Officer)

Date: February 26, 2020

/s/ ROBERT R. KRAKOWIAK

Robert R. Krakowiak
*Executive Vice President, Chief Financial Officer and
Treasurer*
(Principal Financial Officer)

Date: February 26, 2020

/s/ ROBERT J. HARTMAN JR.

Robert J. Hartman Jr.
Chief Accounting Officer
(Principal Accounting Officer)

Date: February 26, 2020

/s/ WILLIAM M. LASKY

William M. Lasky
Chairman of the Board of Directors

Date: February 26, 2020

/s/ JEFFREY P. DRAIME

Jeffrey P. Draime
Director

Date: February 26, 2020

/s/ DOUGLAS C. JACOBS

Douglas C. Jacobs
Director

Date: February 26, 2020

/s/ IRA C. KAPLAN

Ira C. Kaplan
Director

Date: February 26, 2020

/s/ KIM KORTH

Kim Korth
Director

Date: February 26, 2020

/s/ GEORGE S. MAYES, JR.

George S. Mayes, Jr.
Director

Date: February 26, 2020

/s/ PAUL J. SCHLATHER

Paul J. Schlather
Director

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