

WABCO Holdings Inc.
Form 10-K
February 15, 2019
Table of Contents

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, 2018

OR

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

For the transition period from _____ to _____ .

Commission file number 1-33332

WABCO Holdings Inc.

(Exact name of Registrant as specified in its charter)

Delaware 20-8481962
(State or other jurisdiction of (I.R.S. Employer
incorporation or organization) Identification No.)
Chaussée de la Hulpe 166
1170 Brussels, Belgium

1220 Pacific Drive 48326-3511
Auburn Hills, MI
(Address of principal executive offices) (Zip Code)
Registrant's telephone number, including area code +32 2 663 98 00
Securities registered pursuant to Section 12(b) of the Act:

Title of each class Name of each exchange on which registered
Common stock, par value \$0.01 per share New York Stock Exchange
Securities registered pursuant to Section 12(g) of the Act:

Title of each class

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 and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T

(§232.405 of this

Table of Contents

chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes No

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

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

Large Accelerated Filer Accelerated Filer

Non-Accelerated Filer (Do not check if a smaller reporting company) Smaller Reporting Company

Emerging Growth Company

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

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

The aggregate market value of the voting stock (Common Stock) held by non-affiliates of the registrant as of the close of business on June 30, 2018, the last business day of the registrant's most recently completed second fiscal quarter, was approximately \$6.2 billion based on the closing sale price of the common stock on the New York Stock Exchange on that date. The registrant does not have any non-voting common equity.

Indicate the number of shares outstanding of each of the issuer's classes of common stock, as of the latest practicable date.

Common stock, \$.01 par value, outstanding at
February 5, 2019 51,376,541 shares

DOCUMENTS INCORPORATED BY REFERENCE

Part III incorporates information from certain portions of the registrant's definitive proxy statement to be filed with the Securities and Exchange Commission within 120 days after the fiscal year end of December 31, 2018.

Table of Contents

WABCO HOLDINGS INC. AND SUBSIDIARIES

FORM 10-K

Year ended December 31, 2018

TABLE OF CONTENTS

	Page
<u>PART I.</u>	<u>5</u>
Item 1. <u>Business</u>	<u>5</u>
Item 1A. <u>Risk Factors</u>	<u>19</u>
Item 1B. <u>Unresolved Staff Comments</u>	<u>26</u>
Item 2. <u>Properties</u>	<u>27</u>
Item 3. <u>Legal Proceedings</u>	<u>27</u>
Item 4. <u>Mine Safety Disclosures</u>	<u>28</u>
Item 4A. <u>Executive Officers of the Registrant</u>	<u>29</u>
<u>PART II.</u>	<u>31</u>
Item 5. <u>Market for the Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities</u>	<u>31</u>
Item 6. <u>Selected Financial Data</u>	<u>34</u>
Item 7. <u>Management's Discussion and Analysis of Financial Condition and Results of Operations</u>	<u>34</u>
Item 7A. <u>Quantitative and Qualitative Disclosures about Market Risk</u>	<u>50</u>
Item 8. <u>Financial Statements and Supplementary Data</u>	<u>51</u>
Item 9. <u>Changes in and Disagreements with Accountants on Accounting and Financial Disclosure</u>	<u>101</u>
Item 9A. <u>Controls and Procedures</u>	<u>101</u>
Item 9B. <u>Other Information</u>	<u>103</u>
<u>PART III.</u>	<u>104</u>
Item 10. <u>Directors, Executive Officers and Corporate Governance</u>	<u>104</u>
Item 11. <u>Executive Compensation</u>	<u>104</u>
Item 12. <u>Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters</u>	<u>104</u>
Item 13. <u>Certain Relationships and Related Transactions and Director Independence</u>	<u>104</u>
Item 14. <u>Principal Accounting Fees and Services</u>	<u>105</u>
<u>PART IV.</u>	<u>106</u>
Item 15. <u>Exhibits and Financial Statement Schedules</u>	<u>106</u>
Item 16. Form 10-K Summary	<u>112</u>
<u>Signatures</u>	<u>112</u>

Table of Contents

Information Concerning Forward Looking Statements

Certain of the statements contained in this report (other than the historical financial data and other statements of historical fact), including, without limitation, statements as to management's expectations and beliefs, are forward-looking statements. These forward-looking statements were based on various facts and were derived utilizing numerous important assumptions and other important factors, and changes in such facts, assumptions or factors could cause actual results to differ materially from those in the forward-looking statements. Forward-looking statements include the information concerning our future financial performance, financial condition, liquidity, business strategy, projected plans and objectives. Statements preceded by, followed by or that otherwise include the words “believes”, “expects”, “anticipates”, “strategies”, “prospects”, “intends”, “projects”, “estimates”, “continues”, “evaluates”, “forecasts”, “sees”, “goals”, “potential”, “may increase”, “may fluctuate”, and similar expressions or future or conditional verbs such as “will,” “should,” “would,” “may” and “could” are generally forward looking in nature and not historical facts. This report includes important information as to risk factors in “Item 1. Business”, “Item 1A. Risk Factors”, and “Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations.” Many important factors could cause actual results to differ materially from management's expectations, including:

- the actual level of commercial vehicle production in our end-markets;
- adverse developments in the business of our key customers;
- periodic changes to contingent liabilities;
- adverse developments in general business, economic and political conditions or any outbreak or escalation of hostilities on a national, regional or international basis;
- changes in international or U.S. economic conditions, such as inflation, interest rate fluctuations, foreign exchange rate fluctuations or recessions in our markets;
- difficulties in international trade caused by geopolitical developments including tariffs, sanctions and the United Kingdom's exit from the European Union;
- cybersecurity threats, including the potential misappropriation of assets or sensitive information, corruption of data or operational disruption;
- unpredictable difficulties or delays in the development of new product technology;
- pricing changes to our products or those of our competitors, and other competitive pressures on pricing and sales;
- our ability to receive components and parts from our suppliers of a reasonable quality level or to obtain them at reasonable price levels due to fluctuations in the costs of the underlying raw materials;
- our ability to access credit markets or capital markets on a favorable basis or at all;
- our ability to service our debt obligations;
- changes in the environmental regulations that affect our current and future products;
- competition in our existing and future lines of business and the financial resources of competitors;
- our failure to comply with regulations and any changes in regulations;
- our failure to complete potential future acquisitions, collaborations and cooperations or to realize benefits from completed acquisitions, collaborations and cooperations;
- our inability to implement our growth plan;
- our ability to service our pension obligations;
- the loss of any of our senior management;
- difficulties in obtaining or retaining the management and other human resource competencies that we need to achieve our business objectives;
- the success of, and costs and savings associated with, our current streamlining initiatives;
- labor relations;
- our ability to complete and realize the tax benefits associated with certain projects relating to the reorganization of our treasury function and the establishment of a regulated insurance company to better manage our group unfunded pension liabilities;

Table of Contents

our ability to mitigate any tax risks, including, but not limited to, those risks associated with changes in legislation, tax audits and the loss of the benefits associated with our tax rulings and incentives in certain jurisdictions; risks inherent in operating in foreign countries, including exposure to local economic conditions, government regulation, currency restrictions and other restraints, changes in tax laws and rulings, expropriation, political instability and diminished ability to legally enforce our contractual rights.

We undertake no obligation to release publicly any revisions to any forward-looking statements, to report events or to report the occurrence of unanticipated events unless we are required to do so by law.

Table of Contents

PART I

ITEM 1. BUSINESS

Overview

Except as otherwise indicated or unless context otherwise requires “WABCO”, “WABCO Holdings Inc.,” “we,” “us,” “our,” and “the Company” refer to WABCO Holdings Inc. and its consolidated subsidiaries.

WABCO is a leading global supplier of electronic, mechanical, electro-mechanical and aerodynamic products for the world's major manufacturers of commercial trucks, buses and trailers, as well as passenger cars. We engineer, develop, manufacture and sell integrated systems controlling advanced braking, stability, suspension, steering, transmission automation, as well as air compression and processing. These systems improve vehicle safety, efficiency and performance while reducing overall vehicle operating costs. We estimate that approximately two out of every three commercial vehicles with advanced and conventional vehicle control systems worldwide are equipped with our products. For passenger cars, including sports utility vehicles (SUVs), we supply products for sophisticated, niche applications. We continue to grow in more parts of the world as we increasingly provide additional components and systems throughout the life of a vehicle, from design and development to the aftermarket. By leveraging fleet connectivity, WABCO mobilizes vehicle intelligence to advance fleet safety, efficiency and security.

History of Our Company

WABCO was founded in the United States in 1869 as Westinghouse Air Brake Company. We were purchased by American Standard Companies Inc. (American Standard) in 1968 and operated as the Vehicle Control Systems business division within American Standard until we were spun off from American Standard on July 31, 2007. Subsequent to our spin-off, American Standard changed its name to Trane Inc., which we herein refer to as “Trane.” On June 5, 2008, Trane was acquired in a merger with Ingersoll-Rand Company Limited (Ingersoll Rand) and exists today as a wholly owned subsidiary of Ingersoll Rand.

Products and Services

We engineer, develop, manufacture and sell advanced braking, stability, suspension, steering, transmission automation and air management systems primarily for commercial vehicles. Our largest-selling products are pneumatic anti-lock braking systems (ABS), electronic braking systems (EBS), electronic stability control (ESC) systems, brake controls, automated manual transmission (AMT) systems, air disc brakes (ADB), and a large variety of conventional mechanical products such as actuators, air compressors and air control valves for medium and heavy-duty trucks, buses and trailers.

We are also a global market leader in hydraulic components, controls and brake systems for heavy-duty, off-highway vehicles used, for example, in agriculture, construction and mining. We are the only supplier with a complete portfolio of pneumatic and hydraulic braking and control systems for off-highway vehicles worldwide. WABCO is also the only supplier that provides a full range of aerodynamic devices for commercial vehicles worldwide. Aerodynamic products reduce the air drag of commercial trucks traveling long distances at highway speeds, thereby lowering fuel consumption and CO2 emissions. Aerodynamic devices help commercial vehicle fleet operators improve their operational efficiency and environmental performance. Furthermore, we supply advanced electronic suspension controls and vacuum pumps to the passenger car and SUV markets in Europe, North America and Asia. We also provide remanufacturing services globally.

Fleet Management Solutions

We also supply commercial vehicle aftermarket distributors and service partners as well as fleet operators with replacement parts, fleet management solutions (FMS), diagnostic tools, training and other expert services. We provide innovative control functions by leveraging rich data from onboard mission-critical systems to advance fleet safety, efficiency and security. With WABCO's Transics TX-TRAILERGUARD™ and TX-SKY™, customers continuously obtain data from onboard mission-critical systems. Simultaneously, all of this information is integrated onto the fleet manager's displays via TX-CONNECT™ web-based back-office technology. By translating this big data into actionable management insights, fleets gain efficiency and asset utilization improves.

WABCO further expanded its global FMS platform by completing the acquisition of Asset Trackr in 2018, an innovative FMS provider based in Bangalore, India. Asset Trackr helps commercial fleets to track, analyze and optimize their transportation resources and assets in real time through cloud-based solutions.

Table of Contents

WABCO and G7, a technology leader in China's fleet logistics industry, continued to grow the joint venture they established in 2017. G7 is dedicated to implementing telematics, artificial intelligence and big-data algorithms in the logistics industry. Coupled with WABCO's Smart Trailer FMS, integrated with WABCO's Intelligent Trailer Program, which monitors and controls more than 40 onboard functions drives penetration of electronic braking systems and advances vehicle intelligence of tractors and trailers, WABCO and G7 are setting new standards for cargo transportation safety, efficiency and connectivity in China.

WABCO launched TRAXEE FMS in 2018 and offers smaller fleet operators several business-critical functions without incurring large capital investment or management overhead expenses. Launched as a scalable and rapid pay-back solution, TRAXEE enables operators to better coordinate fleet capacity, manage driver activity and improve administrative efficiency. The system also provides real-time status updates on individual trucks and drivers while helping to address tachograph legal compliance requirements across Europe and Turkey.

In 2018, WABCO introduced its Global Intelligent Braking Platform for Trailers, the industry's first global intelligent braking platform for trailers. It provides the foundation for WABCO's new generation Trailer Anti-Lock Braking System (iABS™) and Electronic Braking System (iEBS™). It also features simplified interchange between iABS and iEBS, enhances trailer system functionality and supports the globalization strategies of trailer manufacturers due to increased standardization and modularity.

WABCO also signed a strategic agreement with RIO in 2018, the digital brand of global commercial vehicle manufacturer, the TRATON GROUP to extend its FMS portfolio into a fully digital, cloud-based open platform for freight transport that supports all brands of truck. Under the agreement, RIO will leverage WABCO's advanced FMS within its cloud-based connectivity environment to support the European logistics industry. WABCO's advanced FMS solutions will interface with RIO's partners and will be available to RIO customers in early 2019. Specifically, RIO will integrate WABCO's TX-SOCIAL™ which analyzes and manages tachograph and driver recorded data as well as TX-TRAILERPULSE™, a trailer-specific telematics solution. RIO, which is expanding its customer base across Europe, matches leading suppliers with the best tailored solutions to support fleets and enable them to pick and choose from a broad range of digital tools.

Steering Technologies

Steering technology was integrated into the WABCO product portfolio with the 2017 acquisition of R.H. Sheppard Co., Inc. (Sheppard), a leading North America steering manufacturer. This enables WABCO to combine steering technologies with active braking, electronic stability control and other advanced driver assistance systems. This represents a major step toward providing lateral control through active steering, which is a cornerstone to WABCO's ability to control longitudinal movement through active braking, stability and suspension controls.

Transmission Automation

WABCO AMT products include control technology that boosts fuel economy while reducing emissions. It enables drivers to focus further attention on road and traffic conditions, resulting in increased comfort and safety. It also helps to minimize any performance gap between highly skilled and less experienced drivers. Our industry continues to adopt AMT technology with great growth potential in the United States and Brazil, Russia, India and China (BRIC) as original equipment manufacturer (OEM) and fleet operators seek to increase driver comfort and safety.

Advanced Braking Systems

WABCO's ABS prevents the wheel from locking during emergency braking situations and thereby helps commercial vehicle drivers to maintain stability of the vehicle. ABS also helps to bring a vehicle to a complete stop with the

shortest possible stopping distance and in the safest possible way. Electronic activation of the EBS braking components reduces response and build-up times in brake cylinders. This in turn reduces braking distance by several meters, which can be decisive in some situations. The integrated ABS function ensures driving stability and steerability throughout the braking procedure.

A new generation of ADB products was released in 2018 as part of our MAXX™ product suite. This is a new generation of high-performance single-piston ADB for trucks, buses and trailers world-wide, and is expected to further accelerate the industry's conversion from conventional drum brakes to ADB. WABCO showcased this pioneering suite of MAXX ADB technology at IAA Commercial Vehicles 2018 in Hanover, Germany.

With over six million single-piston ADB systems sold, including more than one million systems proven in the field for 30,000 Nm heavy-duty applications, WABCO is the well-established global market leader for this advanced technology. WABCO's fifth generation range of single-piston ADB technology is suitable for all types of light, medium and heavy-duty vehicles. Superbly

Table of Contents

engineered, MAXX's new lighter weight, high-performance and low drag-torque design further boosts fuel efficiency and enables increased transport payloads.

The latest MAXX design provides enhanced safety and braking efficiency levels, outperforming the requirements for all major vehicle applications. With 20 percent fewer parts than the current design, and over 40 percent fewer parts compared to other ADB brands, the platform offers reliability and an excellent weight-performance ratio. Delivering enhanced fuel efficiency, the compact design offers an average weight of 35 kilograms per ADB in a six-by-two wheel truck application - 12 kilograms less per truck than other manufacturers' European heavy-duty ADB systems.

WABCO has accelerated its single-piston ADB technology leadership in China with the launch of a new joint venture for vehicle control systems in 2018. This new joint venture with FAW Jiefang Automotive Company is designed to advance the safety and efficiency of commercial vehicles in China. A major focus of the joint venture will be heavy-duty trucks given WABCO's mastery of single-piston ADB technology for 30,000 Nm applications which have a compact, lightweight design with fewer components and are proven to deliver the highest standards of safety, performance and reliability. WABCO's industry-leading, high-performance single-piston ADB technology is best suited for all types of commercial vehicles - light, medium and heavy-duty platforms.

Advanced Driver Assistance Systems

WABCO also offers a comprehensive suite of Advanced Driver Assistance Systems (ADAS) that include lane departure warning systems (LDWS) and collision mitigation systems. Safety regulations driven by the European Union started in 2015 and mandated LDWS on new commercial vehicles. This new regulation is addressed by WABCO's OnLane™ camera-based LDWS technology. Once it detects unintended lane drift, OnLane prompts the driver via acoustic, visual and haptic signals to take corrective measures. It also features an advanced option to warn against driver drowsiness. In 2017, WABCO introduced OnSide™, an advanced blind-spot detection system for commercial trucks and trailers. This new radar-based system alerts drivers to the presence of a moving vehicle in a truck's blind spot and provides a side-collision warning to reduce the risk of accidents. When used in conjunction with WABCO's OnLaneASSIST™ lane-keeping assist system, OnSide can go beyond warning to enable active collision avoidance. WABCO's OnLaneASSIST is the first application of active steering technology in our portfolio of advanced driver assistance systems and OnSide provides a critical capability for the autonomous commercial vehicles of the future.

WABCO is the global industry supplier of collision mitigation systems and ADAS to OEMs with more than 450,000 OnGuard safety systems sold world-wide. The scalable and modular architecture of OnGuard solutions offer a number of powerful differentiating benefits for OEMs. WABCO was the first supplier of advanced emergency braking systems (AEBS) homologated in Europe in accordance with European Union regulations. WABCO's OnGuardACTIVE™ AEBS for trucks and buses complies with European Union regulations that came into effect at the tail end of 2015. It detects moving, stopping and stationary vehicles ahead. It alerts the driver via acoustic, visual and haptic signals. OnGuardACTIVE autonomously applies the brakes and can bring the vehicle to a complete stop, helping to prevent or mitigate rear-end collisions.

In 2018, WABCO announced the latest functionalities added to its industry-leading suite of OnGuard™ collision mitigation systems (CMS) featuring a new radar sensor which offers the commercial vehicle industry's longest radar detection range, as well as the widest near-range field of view. WABCO's OnGuardACTIVE can now provide up to full autonomous emergency braking on moving and stationary vehicles from a highway speed up to 80 km per hour - even in poor visibility conditions. WABCO's OnGuardMAX utilizes the radar sensor integrated with a new jointly developed Mobileye® camera powered by its industry-leading EyeQ®4 chip. This system further differentiates itself by enabling autonomous collision avoidance with pedestrians intruding in front of the vehicle at speeds up to 20km/h.

Additionally, in 2018, WABCO signed a Memorandum of Understanding (MoU) with Valeo, an automotive technology leader at the center of several automotive industry innovations, to develop and industrialize the next generation of ADAS, which is among the key building blocks for vehicle autonomy. Within the scope of this agreement, the parties intend to develop sensor technologies helping pave the way for Valeo to supply WABCO with advanced short and mid-range sensors, including 77GHz radar and solid-state LiDAR. The first market application using Valeo's sensing technologies will be WABCO's OnCityALERT™, an urban turning driver assistance solution that warns about cyclists and pedestrians potentially crossing the predicted driving path, prompting the driver to take corrective action. On average, traffic accidents involving heavy trucks in the European community result in about 7,200 fatalities and over 100,000 injuries each year. 23 percent of all traffic-related severe injuries are unprotected road users and of that number, 20 percent of accidents occur during a turning maneuver to the nearside.

Table of Contents

Autonomous Driving

Taking the next step towards autonomous driving solutions and to further complement our ADAS technology, WABCO signed an MOU in 2018 with Baidu to collaborate on developing a best-in-class, cost-effective and highly standardized suite of solutions for Level 4 Autonomous Driving in hub-to-hub highway applications for commercial vehicles. This will be a cornerstone of an open platform allowing OEMs and fleets to utilize WABCO's and Baidu's core safety and AI technologies while providing them an opportunity to develop customized, differentiated solutions. Baidu will bring the power of Apollo, its open autonomous driving software platform, proven in the passenger car segment, while WABCO will provide access to its own ADOPT™ (Autonomous Driving Open Platform Technology) ecosystem to simplify entry into WABCO's world of advanced technologies for the commercial vehicle industry. WABCO and Baidu will work together to combine the required content of Baidu's Apollo software platform, integrating all the safety and redundancy protocols necessary for road release in order to develop turnkey, hub-to-hub, Level 4 highway solutions for the commercial vehicle world. Our goal is to be able to commercialize these solutions over the next three years.

Electrification

In 2018, WABCO announced a prototype of its first electric trailer - named eTrailer - developed to maximize operating efficiency and lower fuel consumption. This eTrailer prototype uses an intelligent electric motor control to recuperate electric energy during braking, which can then be reutilized to power the vehicle's traction or to operate onboard electric auxiliaries. Furthermore, commercial fleet operators that connect eTrailer to a truck equipped with WABCO's intelligent braking and stability control systems will further enhance the operating efficiency of the truck-trailer combination. WABCO estimates that its eTrailer could deliver fuel savings up to 20 percent on short haul routes and up to 10 percent for long hauls in a truck-trailer combination.

Continuing on the path of electrification, in 2018, WABCO signed a MoU with Nidec Motor Corporation ("Nidec"), a subsidiary of Nidec Corporation, the world's number one Comprehensive Motor Manufacturer (TSE: 6594) to define, develop, manufacture and commercialize fully integrated electric drivetrain and brake control solutions for longitudinal control of commercial vehicles. The fully integrated electric drivetrain solution will operate on vehicle control information received from driver inputs (use of accelerator and brake pedals) to automate decision flow on how to accelerate or decelerate the vehicle in the most prudent and economic way. By introducing advanced, fully integrated electric drivetrain solutions in this market segment, WABCO and Nidec will provide efficient energy management, while maintaining stable vehicle dynamics. Also, the electric drivetrain solution will enable improved energy recuperation across all use cases which will contribute to additional efficiency gains.

Our key product groups and functions are described below.

Table of Contents

WABCO KEY PRODUCT GROUPS

SYSTEM / PRODUCT	FUNCTION
Actuator	Converts energy stored in compressed air into mechanical force applied to foundation brake to slow or stop commercial vehicles
Air Compressor and Air Processing/Air Management System	Provides compressed, dried air for braking, suspension and other pneumatic systems on trucks, buses and trailers
Foundation Brake	Transmits braking force to slow, stop or hold vehicles
Anti-lock Braking System (ABS)	Prevents wheel locking during braking to ensure steerability and stability
Conventional Braking System	Mechanical and pneumatic devices for control of braking systems in commercial vehicles
Electronic Braking System (EBS)	Electronic controls of braking systems for commercial vehicles
Electronic and Conventional Air Suspension Systems	Level and pressure control of air springs in trucks, buses, trailers and cars
Transmission Automation	Automates transmission gear shifting for trucks and buses including clutch operation
Vehicle Electronic Stability Control (ESC) and Roll Stability Support (RSS)	Enhances driving stability
Advanced Driver Assistance Systems (ADAS)	Promotes driver safety through lane departure warnings, collision mitigation and emergency braking systems
Fleet Management Solutions (FMS)	Improves vehicle safety and efficiency for fleet managers through real-time online commercial vehicle telematics and communications
Steering Technologies	Controls the lateral movement of the vehicle

Key Markets and Trends

Electronically controlled products and systems are important for the growth of our business. Our markets are driven primarily by the electronics content of control systems in commercial vehicles. At the same time, major original equipment manufacturers (OEMs) are transforming toward modularization of their various vehicle platforms. Modularity enables more efficiency and cost-effectiveness in development, manufacturing and marketing of their commercial vehicles. These trends have been increasing steadily with each successive vehicle platform introduction, as OEMs seek to improve vehicle safety, efficiency and performance through added functionalities, and to meet evolving and rising regulatory standards around the world. Overall, engineering trends in commercial vehicle design show a shift in demand toward increased electronics content and platform modularity. Although their pace varies by region, these trends are similar in all major geographies.

In particular, braking systems are part of the shift from conventional to advanced electronic systems on the path towards fully autonomous driverless trucks. In addition to increasing safety, improving stopping distances, and reducing installation complexity, electronic braking systems also enable new functionalities to be integrated more cost effectively. New functionalities include stability control, adaptive cruise control, transmission automation, active steering brake performance warning, vehicle diagnostics, driver assistance systems as well as engine braking and engine speed controls, among others. Our automated transmission controls optimize gear shifting, resulting in better fuel efficiency, less component wear and fewer parts. This technology further enhances driver safety and comfort requiring less physical effort.

The global commercial vehicle industry is also trending toward environmental sustainability. WABCO's technology leadership continues to deliver products and systems that increase fuel efficiency, reduce emissions, decrease vehicle weight and optimize energy recovery, among other advancements that enhance environmental compliance of trucks, buses and trailers over the lifetime of the vehicle. For example, a truck equipped with all of WABCO's green

technologies can have significantly improved fuel efficiency. These include advanced transmission automation systems, innovative aerodynamic solutions, sophisticated electronic driver assistance systems, electronic control of air suspension and breakthrough air compression technologies. We reduce vehicle weight and recuperate energy through engineering and lighter materials, resulting in higher fuel efficiency and a reduction in emissions.

We have entered into collaborations, the most recent being a MoU with Nidec, to define, develop, manufacture and commercialize fully integrated electric drivetrain and brake control solutions for longitudinal control of commercial vehicles. We

Table of Contents

have also made investments in electrification, the most recent being our investment in Nikola Motor Company, a leader in design and manufacturing of hydrogen-electric vehicles, vehicle components, energy storage systems and electric vehicle drivetrains.

We believe customers value how WABCO has been laying the foundations of autonomous driving for commercial vehicles as well as WABCO's extensive track record for mobilizing vehicle intelligence. This has made WABCO a leading partner of choice globally for the development and systems integration of sensor, control and actuation technology alongside its expertise in local product applications.

WABCO joined the ENSEMBLE consortium in 2018 to develop advanced safety technologies for multi-brand platooning on roads in Europe. Jointly funded as a public and corporate initiative, the ENSEMBLE consortium is expected to demonstrate multi-brand truck platooning on public roads in 2021 and to assess the impact of platooning on infrastructure, road safety and traffic flow. WABCO will support the ENSEMBLE consortium's development and testing of multi-brand platooning by delivering platooning algorithm and connectivity enhancements for WABCO's OnGuard autonomous emergency braking systems (AEBS), active cruise control (ACC) and WABCO's electronic braking system (EBS).

WABCO is also increasingly contributing to the efficiency and safety of commercial and government-owned fleets worldwide. WABCO empowers fleets through its differentiated and expanding portfolio of leading fleet management solutions, its Intelligent Trailer Program offering more than 40 key trailer functions, and WABCO's growing connectivity between off-vehicle data analytics support and intelligent on-vehicle safety and efficiency systems. Fleets are also empowered through big data from WABCO's onboard electronic braking, stability, efficiency and driver assistance systems which are integrated with fleet management solutions.

A fundamental driver of demand for our products is commercial truck and bus production. The number of new commercial vehicles built fluctuates from year to year in different regions of the world. Nonetheless, over the last five years, we have demonstrated our ability to outperform the market by increasing the amount of WABCO content on board each vehicle. During the five year period through 2018, WABCO's European sales to truck and bus (T&B) OEM customers, excluding the impact of foreign currency exchange rates, outperformed the rate of European T&B production by an average of 2% per year.

Year to Year Change	2014	2015	2016	2017	2018
Sales to European T&B OEMs (at a constant FX rate)	(7)%	8 %	8 %	6 %	3 %
European T&B Production	(9)%	6 %	1 %	8 %	2 %

Customers

We sell our products primarily to five groups of customers around the world:

- Truck and bus OEMs;
- Commercial vehicle aftermarket distributors for replacement parts and services and commercial vehicle fleet operators for management solutions and services;
- Trailer OEMs;
- Major car manufacturers, and
- Manufacturers of heavy duty, off-highway vehicles in agriculture, construction, mining and similar industries.

Our largest customers are Daimler and Volvo and account for approximately 14% and 11% of our sales, respectively. Other key customers include Ashok Leyland, TRATON, China National Heavy Truck Corporation (CNHTC), Cummins, Fiat (Iveco), Hino, Paccar and TATA Motors. For the fiscal years ended December 31, 2018, 2017 and

2016, our top 10 customers accounted for approximately 49%, 44% and 44% of our sales, respectively.

The largest group of our customers, representing approximately 55% of sales (57% in 2017), consists of truck and bus OEMs who are large, increasingly global and few in number due to industry consolidation, as well as a smaller number of off-highway (agricultural and construction) OEMs. As truck and bus OEMs grow globally, they expect suppliers to expand with them beyond their traditional markets and become reliable partners, especially in the development of new technologies. WABCO has a strong reputation for technological innovation and collaborates closely with major OEM customers to design, develop and deliver technologies used in their products. Our products play an important role in enabling further vehicle safety and efficiency. At the same time, there are few other suppliers who compete across the breadth of products that we supply globally.

Table of Contents

The second largest group, representing approximately 25% of sales (24% in 2017), consists of the aftermarket distributor network that provides commercial vehicle operators with replacement parts as well as a range of services. This distributor network is a fragmented and diverse group of customers, covering a broad spectrum from large OEM-affiliated or OEM-owned distributors to small independent local distributors. The increasing number of trucks, buses and trailers on the road worldwide that are equipped with our products continuously increases market demand for replacement parts and services which, in turn, generates a growing stream of recurring aftermarket sales. In addition, we continue to develop an array of service offerings - such as diagnostics, training and fleet management solutions - for repair shops and fleet operators that further enhance our presence and growth in the commercial vehicle aftermarket.

The next largest group, representing approximately 10% of sales (9% in 2017), consists of trailer manufacturers. This is a particularly fragmented group of local and regional players that are widely diverse in business size, focus and operation. Smaller trailer manufacturers are highly dependent on suppliers such as WABCO to provide technical expertise and product knowledge. Similar to truck and bus OEMs, trailer manufacturers rely significantly on WABCO products for safety and efficiency functions through superior technologies and customized technology applications.

The remaining two groups, passenger car and SUV manufacturers and off-highway (agricultural and construction) OEMs represent approximately 5% (6% in 2017) and 5% (4% in 2017) of sales respectively. We supply passenger car and SUV manufacturers with our electronic air suspension systems and vacuum pumps. Electronic air suspension is a luxury feature with increasing penetration that exceeds market growth. Vacuum pumps are used with diesel and gasoline direct injection (GDI) engines. These customers are typically large, global and sophisticated; they demand high quality products and services.

We support our customers through our global sales force. It is organized around key accounts and customer groups and interfaces with product marketing and management to identify opportunities and meet customer needs across our product portfolio and throughout the world.

As a result of the 2017 acquisitions, the sales proportion, in percentage, of sales in Europe and Asia decreased and increased in North America, whereas sales, in absolute value, increased in all these regions. Europe represented approximately 49% of our sales in 2018 (52% in 2017), with the remainder coming primarily from Asia and the Americas. Our products are also manufactured in Europe, Asia and the Americas. WABCO's growth in Asia is enhanced by our strong roots in China and India where we have achieved leading market positions through close connectivity to customers. We are further strengthened in Asia by a network of suppliers, manufacturing sites and engineering hubs.

WABCO SALES

By Geography	FY 2018 % of Sales	FY 2017 % of Sales	By Major End-Market	FY 2018 % of Sales	FY 2017 % of Sales
Europe	49	52	Truck & Bus Products (OEMs)	55	57
Asia	23	26	Aftermarket	25	24
North America	23	18	Trailer Products	10	9
South America	3	3	Car Products	5	6
Other	2	1	Off Highway Products	5	4

Additional information on the geographic distribution of our sales and our long-lived assets for the past three years may be found in Note 19 ("Geographic Information") in Notes to the Consolidated Financial Statements.

Backlog

Information on our backlog is set forth under Item 7. “Management's Discussion and Analysis of Financial Condition and Results of Operations - Backlog” of this annual report.

Seasonality

Information on the seasonality of our business is set forth under Item 7 “Management's Discussion and Analysis of Financial Condition and Results of Operations - Seasonality” of this annual report.

Growth Strategy

Table of Contents

In 2018, WABCO continued its three-pillar growth strategy - technology leadership, globalization, and excellence in execution - which further differentiates WABCO within the global commercial vehicle industry. Key drivers of excellence in execution are set out in “Manufacturing and Operations” below.

Technology Leadership

WABCO remains focused on global technology trends that are important to our customers. Our technology strategy has three pillars to create value for manufacturers of commercial vehicles and fleet customers in every region of the world. The first pillar is advanced vehicle and driver safety to reduce the number of accidents involving commercial vehicles. The second pillar is vehicle efficiency to improve the environmental sustainability of trucks, buses and trailers, and to reduce their total cost of operation through better fuel economy and other improvements. Solidly anchored in the fully autonomous driverless vehicle vision, the third pillar is connectivity. This works with the other two pillars to enable WABCO to mobilize vehicle efficiency and empower fleets around the world leveraging off-vehicle data analytics support and intelligent on-vehicle safety and efficiency systems.

We continue to drive market outperformance by leveraging our expertise in developing electronic systems that control braking, stability, steering suspension, transmission automation and air management. We have a strong track record of innovation and we are responsible for many of the commercial vehicle industry's most important innovations including:

- First heavy-duty truck anti-lock braking system (ABS)
- First electronically controlled air suspension (ECAS) system for commercial vehicles
- First commercial vehicle automated manual transmission (AMT) controls system
- First electronic braking system (EBS) for commercial vehicles
- First electronic stability control (ESC) system for heavy-duty commercial vehicles
- First collision mitigation system (CMS) with active braking for commercial vehicles
- First autonomous emergency braking system (AEBS) for commercial vehicles
- First collision safety system with active braking developed for the North American market based on Adaptive Cruise Control (ACC) technology
- First hydraulic ABS integrated with ESC for medium-duty commercial vehicles
- First modular braking system platform (mBSP™) that enables vehicle makers to interchangeably equip their truck and bus platforms with either ABS or electronic braking systems (EBS) anywhere in the world
- First technology (TX-TRAILERGUARD™) that provides comprehensive operating data on the performance of the truck, trailer and driver in a single integrated real-time view
- First technology (OptiLink™) that provides a single user interface via a mobile device, such as a smartphone, to monitor and control multiple functions on both the truck and trailer
- First door lock control technology (OptiLock™) that provides high security locking systems for trailers and container doors seamlessly connected with telematics systems
- First Evasive Maneuver Assist (EMA) capabilities that combines WABCO's world-class braking, stability and vehicle dynamics control systems on trucks and trailers with ZF's top active steering technology
- OnSide™, an advanced blind-spot detection system™ for commercial trucks and trailers. A radar-based system alerts drivers to the presence of a moving vehicle in a truck's blind spot and provides a side-collision warning to reduce the risk of accidents

We continue to expand our technology portfolio by introducing new product applications and functionalities, and by improving the market penetration of our existing technologies. Advanced products and functionalities are typically developed and adopted first in Europe and then migrated to North America and emerging economies. Examples include the adoption of ABS and automated transmission systems. These technologies were first widely adopted in European markets before starting to penetrate North America as well as China, India and other emerging markets. In

terms of commitment to innovation, WABCO's net expenditures for product engineering, including research activities and product development amounted to approximately \$184.4 million in 2018.

Table of Contents

We are also focused on long-term opportunities as WABCO continues to anticipate and fulfill our industry's constant search for technology that advances vehicle safety and efficiency in mature and emerging markets on a cost-competitive basis.

WABCO safety technologies encompass braking systems, stability control, collision mitigation, steering systems as well as accident mitigation and prevention. In 2018 - among other major accomplishments - we formed multiple new alliances, announced breakthrough technologies and further strengthened existing partnerships. We also continued to expand and enrich our portfolio of differentiated capabilities that improve the safety, efficiency and connectivity of commercial vehicles.

As our customers move toward intelligent vehicles and autonomous driving, WABCO is firmly positioned for the autonomous, electrified and connected future of our industry. This means leveraging WABCO's breadth and depth of capabilities which will further enable the continued success of OEMs and fleet operators in every region of the world. The combination of steering technologies from the Sheppard acquisition with WABCO's technologies represents a major step toward providing both lateral and longitudinal control through active steering, active braking, stability and suspension controls, a cornerstone of autonomous vehicles.

In 2017, we further strengthened our market leadership in advanced driver assistance systems through the launch in North America of OnLANE™ and OnLaneASSIST™ systems. WABCO's mBSP, the industry's first modular braking system platform, is at the heart of a commercial vehicle's braking system. It enables commercial vehicle makers to interchangeably equip their diverse global truck and bus platforms with ABS or EBS systems anywhere in the world. WABCO's mBSP uniquely features commonality of components and electronics, enabling truck and bus builders to save development time and production costs, and to bring new vehicles to market faster in every region of the world.

In 2018, WABCO continued to increase adoption of our breakthrough MAXX ADB the industry's lightest and highest performing single-piston ADB for commercial vehicles. Compactly engineered, MAXX braking technology fits virtually every wheel size for commercial trucks, buses and trailers around the globe. In particular, WABCO continued to expand ADB market penetration for trucks in North America, Europe and China where major customers value MAXX differentiators such as shorter stopping distances compared with drum brakes.

WABCO efficiency technologies deliver fuel economy, emissions reduction, energy recovery, weight reduction, lower maintenance costs and increased driver capability. In 2018, WABCO increased adoption of OptiDrive systems at original equipment makers in emerging economies such as India and China. As of 2018, over 4.5 million WABCO AMT systems have been sold, including our OptiDrive™ system - our modular automated manual transmission technology - which increases fuel economy up to 5% through optimized gear shifting. OptiRide™ is an ECAS technology that identifies axle overload, provides automatic load transfer and improves traction, which helps to reduce vehicle wear-and-tear and other operational costs. WABCO's OptiRide delivers fuel savings up to 3% under certain conditions, while providing optimal ride performance. In 2018, WABCO continued to expand the use of the OptiFlow™ product range offering efficiency to trailer builders and major fleets through aerodynamic devices. Aerodynamic products reduce air drag of commercial trucks traveling long distances at highway speeds, thereby lowering fuel consumption by up to 7% as well as reducing CO2 emissions.

Globalization

Americas

WABCO's regional headquarters for the Americas was recently relocated to a new facility in Auburn Hills, Michigan, which will also be our customer experience center and the location for the launch of WABCO Academy. It further

anchors WABCO as a global technology leader and tier-one supplier to the commercial vehicle and automotive industries. It also further demonstrates WABCO's commitment to closely connect with original equipment manufacturers and fleet operators in North and South America by leveraging our local capabilities and distribution channels for our vehicle safety and efficiency products and services.

North America remains a long-term growth market for WABCO, particularly in the United States, due to its expected volume of truck and bus production and the increasing adoption of vehicle safety and efficiency technologies. In prior years, we participated in this market through our North American joint venture, Meritor WABCO. In October 2017, WABCO acquired the remaining ownership stake from Meritor and consolidated all products under one WABCO brand in the North American market. WABCO can unlock further value for our customers, including offering them seamless access to WABCO's powerful technology and services portfolio, backed by the flexibility and efficiency of an integrated global supply chain. WABCO North America is focused on the application and delivery of WABCO's braking and active safety systems, electronic suspension control and air management products in addition to all other technologies such as ADB, AMT and compressors in the North American market. In 2018, we increased WABCO's ADB penetration and market share and expanded adoption of high-performance ADB in North America. WABCO's AMT also continued its successful sales penetration to Daimler Trucks North

Table of Contents

America and Volvo. Lastly, WABCO integrated the Sheppard acquisition into its global footprint, and began exporting steering products to India. WABCO also continued to develop advanced safety technologies specifically designed for electric commercial vehicles, including electronic braking systems and traction and stability controls for electric truck manufacturer, Nikola, in which WABCO made a \$10 million investment in 2017.

WABCO's OnGuard is one of North America's leading collision mitigation systems. More than 250 fleets are currently utilizing the system to help keep their truck drivers, vehicles, and fellow motorists safe. Heavy-duty truck fleets have reported a reduction in accidents of up to 87% and up to an 89% reduction in accident costs since adopting OnGuard.

South America remains a long-term growth market for WABCO, particularly Brazil, due to its expected volume of truck and bus production and the increasing adoption of vehicle safety and efficiency technologies. WABCO continues to have a leadership position across all products and expects the continuous adoption of new technologies, such as AMT and ADB. WABCO's South American headquarters near São Paulo serves as a regional hub in the manufacturing and sales network of WABCO products and systems. It also has a world-class production facility and a distribution center in the Campinas region. WABCO South America's enhanced capabilities include product and applications engineering, aftermarket service, supply chain management and manufacturing. WABCO connects with the specific needs of customers in South America through specially developed and locally adapted systems and products for emerging markets.

China

China remains a long-term growth market for WABCO due to its expected volume of truck and bus production and the increasing adoption of vehicle safety and efficiency technologies. In 2018, WABCO continued to leverage its position as market leader and supplier of choice for control systems for trucks, buses and trailers in China, the world's largest market for commercial vehicles. As the leading provider of ADAS, EBS, ESC, ADB, LDWS systems in China, WABCO is well positioned for growth as new regulations related to these products are released and implemented in the coming years.

WABCO continues to leverage its traditional partnerships with leading OEMs (China National Heavy Truck Corporation (CNHTC), Yutong) and furthered support for additional growth, establishing a new joint venture for vehicle control systems with FAW Jiefang Automotive Company to advance the safety and efficiency of commercial vehicles in China. This includes accelerating WABCO's single-piston air disc brake (ADB) technology leadership in China. This is the first step in a much broader collaboration. WABCO and FAW Jiefang are also planning to cooperate on advanced braking systems development in the areas of autonomous driving, active safety systems and fleet management systems (FMS) to help support commercial vehicle manufacturers and fleets in China further improve safety and efficiency.

Additionally, WABCO signed a MoU with Baidu to collaborate on developing a best-in-class, cost-effective and highly standardized suite of solutions for Level 4 Autonomous Driving in hub-to-hub highway applications for commercial vehicles.

WABCO also continued to grow the joint venture with G7, a technology leader in China's fleet logistics industry. G7 is dedicated to implementing telematics, artificial intelligence and big- data algorithms in the logistics industry. WABCO and G7 are setting new standards for cargo transportation safety, efficiency and connectivity in China.

Since 2014, WABCO remains the first and predominant supplier of ECAS systems for truck and bus manufacturers in China. Several major Chinese heavy duty truck manufacturers - including CNHTC, DFLQ and Shaanqi - continue to increase adoption of OptiRide electronically controlled air suspension (ECAS) in series production.

We believe customers value WABCO's local capabilities for product application development and engineering as our strategy is to "design for China," which involves our four world-class factories located there. This strategy delivers optimal localized solutions to improve vehicle safety and efficiency, enhance driver effectiveness and sustain environmental friendliness.

India

Due to its expected volume of truck and bus production and the increasing adoption of vehicle safety and efficiency technologies, India remains a long-term growth market for WABCO. We participate in this market through our subsidiary WABCO INDIA, which has a market leadership position for over 55 years in conventional braking products, advanced braking systems, air-assisted products, and automated manual transmission systems. In particular, all commercial vehicle manufacturers in India relied on WABCO's test track located in Chennai to homologate over 50 vehicle platforms -truck and trailer to comply with the new national axle load regulation that came into effect from July 2018 for trucks and trailers In 2018, WABCO INDIA together with Tata International DLT one of the leading trailer OEM's launched the award winning Intelligent Trailer Program. The Intelligent Trailer Program, an industry-first initiative leverages capabilities of WABCO's trailer anti-lock or electronic braking

Table of Contents

control systems to provide a platform for upto40 innovative trailer operating functions. Designed to enhance trailer safety, security and efficiency, the Intelligent Trailer Program offers significant added value for India's trailer manufacturers, fleet operators and cargo owners. The Intelligent Trailer Program also paves the way for India's trailer industry to upgrade from basic braking systems to the next level of advanced braking and suspension technologies required for higher levels of vehicle automation.

Tata Motors, in 2018, partnered with WABCO India to launch WABCO's Advanced Driver Assistance Systems (ADAS) for the PRIMA and SIGNA range of trucks. Designed to help mitigate some of the most common causes of accidents involving commercial vehicle, WABCO's ADAS solution enhances vehicle safety, driver comfort and effectiveness. With the introduction of ADAS, Tata Motors became the first Indian OEM to provide a host of specific safety technologies in their vehicles including ESCsmart TM - electronic stability control, automatic traction control (ATC), hill start aid, ADAS which includes WABCO's OnGuardASSISTTM- collision mitigation system and OnLaneALERTTM- lane departure warning system. OnGuardASSISTTM alerts the driver to potentially critical driving situations via acoustic, visual and haptic signals, should the driver fail to take corrective action, the system provides active braking on moving and stationary vehicles to mitigate or prevent impending collision. OnLaneALERT TM helps prevent unintentional lane departure, one of the most common causes of accidents involving commercial vehicles.

During the year 2018, WABCO India also partnered with Escorts group to launch India's first automated tractor concept. Escorts group is one of India's leading engineering conglomerate operating in agri machinery, material handling and construction equipment and railway equipment. WABCO India is India's first technological solution provider to develop the concept of automated agricultural tractor by integrating automated manual transmission (AMT), brake controls and steering technologies.

WABCO INDIA connects with global OEMs based in India and other regions of the world through five world-class manufacturing sites located in Ambattur, Jamshedpur, Mahindra World City, Pantnagar and Lucknow. In addition there are facilities in Chennai and Pune for software and application engineering. In India, over 500 engineers support the design of new products, applications and systems to meet the technical and economic needs of customers in emerging markets around the world. At the same time, they continue to contribute to global development of WABCO's advanced technologies. Furthermore, WABCO INDIA continued in 2018 to be recognized by key customers for its excellence in innovation, quality, cost and overall performance, among other attributes that further differentiate WABCO as a leading supplier based on customer satisfaction. Also, WABCO INDIA remains a market leader in its domestic aftermarket through an extensive national distribution network of more than 7,000 WABCO outlets, to provide fleet customers with access to full product and service support. To enhance connectivity, WABCO completed the acquisition of Asset Trackr in 2018, an innovative FMS provider based in Bangalore, India. Asset Trackr helps commercial fleets to track, analyze and optimize their transportation resources and assets in real time through cloud-based solutions.

Demonstrating WABCO's strong commitment to expand and to globalize its steering business beyond the U.S., we have secured an important first milestone in delivering leading steering solutions to customers internationally with a supply agreement to Tata Motors. As a full systems tier-I supplier to Tata Motors, WABCO is equipping the manufacturer with its hydraulic power steering systems, helping them to meet increasing demand for new heavy-duty trucks locally following the recent legislative changes on axle load.

Eastern Europe

Truck and bus production in Eastern Europe is mainly in the Commonwealth of Independent States (CIS), which includes Russia as its major market. This is another long-term growth market for WABCO. Headquartered in Moscow, WABCO Russia has a factory in Miass and a distribution center in the Moscow region, supplying makers of trucks, trailers and buses, as well as aftermarket customers. In 2018, WABCO delivered 100% of the braking systems

(ADB, APU, ABS and all conventional valves) for the newest platforms of trucks and buses for Russia's largest medium-duty commercial vehicle manufacturer.

WABCO is further differentiated in Russia by our local engineers support customers throughout product development and completion of successful homologation. WABCO has been connecting with markets within the CIS for more than 40 years. WABCO Russia alone also has 7 regional sales offices, 27 dealers, over 200 authorized WABCO shops and more than 230 Service Partners across the country.

Competition

Given the importance of technological leadership, vehicle life-cycle expertise, a reputation for quality and reliability, and the growing joint collaboration between OEMs and suppliers to drive new product development, the space in which we largely operate has not historically had a large number of competitors. Our principal competitors are Knorr-Bremse (Knorr's U.S. subsidiary is Bendix Commercial Vehicle Systems) and, in certain categories, Haldex. In the advanced electronics categories, automotive players such as Bosch (automotive) and Continental have recently been present in some commercial vehicle applications. In the mechanical product categories, several Asian competitors are emerging, primarily in China, who are focused on such products.

Table of Contents

In each of our product categories, we compete on the basis of product design, manufacturing and distribution capabilities, product quality and reliability, price, delivery and service.

Manufacturing and Operations

Most of our manufacturing sites and distribution centers produce and/or house a broad range of products and serve different types of customers. Currently, approximately 68% of our manufacturing workforce is located in best cost countries such as China, India, Brazil and Poland up from approximately 45% in 2007. Facilities in best cost countries have historically helped to reduce costs on more labor-intensive products, while our facilities in Western Europe are generally producing more technologically advanced products. However, the increasing need for more advanced products and systems in emerging markets leads us to expand local supply chain capabilities to progressively cover more complex manufacturing.

All facilities worldwide are deploying Six Sigma Lean initiatives and global standards to continuously generate productivity and improve service levels. By applying Six Sigma policy, methodologies and tools, we seek to improve quality and predictability of our processes on a continual basis. Lean is geared toward eliminating waste in our supply chain, manufacturing and administrative processes. Methodologies are customer driven and data based. In addition, our global supply chain team is tightly connected throughout regions and at each site. They make decisions on where to manufacture each product taking into account factors such as local and export demand, customer approvals, cost, key supplier locations and factory capabilities. WABCO's global manufacturing and logistics also support our customers in the aftermarket as we continue to perform for on-time delivery and inventory fulfillment, among other drivers of customer satisfaction.

In 2018, WABCO opened a new Global Technology and Innovation Center in Hanover, Germany. Significantly expanding WABCO's global product development and engineering capabilities, the nearly \$30 million facility will play an important role in ensuring WABCO's technology leadership is sustained through future generations of innovation within WABCO's integrated network of product development and engineering centers that now spans four continents. This includes developing pioneering technologies to support the industry's migration towards increasingly autonomous, connected and electric commercial vehicles.

Our global sourcing organization purchases a wide variety of components, including electrical, electro-mechanical and cast aluminum products, as well as parts containing materials such as steel, copper, rubber and plastic. These items represent a substantial portion of manufacturing costs. We source products on a global basis from three key regions: Western Europe, Central and Eastern Europe, and Asia. To support WABCO's continuing shift of manufacturing to best cost countries, we are migrating more of our sourcing to best cost regions. Under the leadership of the global sourcing organization, which is built around commodity and product groups, we identify and develop key suppliers and seek to integrate them as partners within our extended enterprise. Many of our Western European suppliers are accompanying us toward best cost countries. Since 2007, the share of our sourcing from best cost regions has increased from 36% to approximately 51%.

We have developed a strong position in the engineering, design, development and testing of products, components and systems. We are generally regarded within our global industry as a systems expert. This recognition reflects our in-depth technical knowledge and capabilities to support the development of advanced technology applications that are appropriately and optimally integrated with all of the vehicle's other systems and controls. Key customers depend on us and will typically involve us very early in the development process as they begin designing next generation platforms. We have approximately 2,855 employees - of which approximately 55% are located in best cost countries - dedicated to engineering and developing new products, components and systems as well as supporting and enhancing technology applications and manufacturing processes. These include 331 software engineers in India who support the local design of new products and systems for emerging markets and contribute to the global development of advanced

technologies for commercial vehicles. They are dedicated to continuously improving the cost effectiveness and efficiency of WABCO's business processes and operations worldwide through services that are optimally leveraged and shared within our own organization and connected with suppliers, customers and others.

Our global sales organization hosts application engineers that are based near customers in different regions around the world and are partially resident at some customer locations. We also have significant resources in best cost countries where we perform functions such as drawing, testing and software component development. We operate test tracks in Germany and India as well as in Finland for extreme weather-proving conditions.

Joint Ventures

We use joint ventures globally to expand and enhance our access to customers. Our joint ventures include:

• A majority-owned joint venture (90%) in Japan with Sanwa-Seiki (WABCO Japan, Inc.) that distributes WABCO's products in the local market

Table of Contents

A majority-owned (70%) manufacturing partnership in the United States with Cummins Engine Co. (WABCO Compressor Manufacturing Co.) formed to produce air compressors designed by WABCO

A majority-owned joint venture (70%) with Fuwa Mechanical Engineering Company Ltd, (FUWA) formed to produce air disc brakes for commercial trailers in China. FUWA is the largest manufacturer of commercial trailer axles in China and in the world

A majority-owned joint venture (60%) with FAW Jiefang (FAW Jiefang Automotive Co., Ltd) to advance the safety and efficiency of commercial vehicles in China. This newly created joint venture will commence the manufacturing of ADB in 2019

A 50% owned joint venture in Germany with RuC Holding GmbH (WABCOWURTH Workshop Services GmbH) that supplies commercial vehicle workshops, fleet owners and operators and end users internationally with multi-brand technology diagnostic systems

A 50% owned joint venture in China with Beijing Huitong Tianxia IOT Technology Co., Ltd (Shanghai G7 WABCO IOT Technology Co Ltd), to develop innovative Trailer FMS solutions for the Chinese fleet market

A 50% owned joint venture in China with Northstars Automobile Steering System Ltd (Sino-American RH Sheppard Hubei Steering Systems LTD), that is specialized insteering gears distribution on the Chinese market

A 37.5% owned joint venture with Shanghai Qingchuang Metal Products Trading Co., Ltd (China Source Engineered Components Trading Corporation Ltd) that wholesales machined parts, fasteners, hydraulic components and other automotive parts.

Employees

We have 16,135 employees. Approximately 46% of our employees are salaried and 54% are hourly. Approximately 42% of our workforce is in Europe, 44% is in Asia, and the remaining 14% is in the Americas.

Employees located in our sites in Europe, Asia and South America are subject to collective bargaining, with internal company agreements or external agreements or laws at the region or country level. Currently approximately 50% of our workforce is covered by collective bargaining agreements. The employees' right to strike is typically protected by law and union membership is confidential information which does not have to be provided to the employer. The collective bargaining agreements are typically renegotiated on an annual basis. Our U.S. facilities are non-union. We have maintained good relationships with our employees around the world and historically have experienced very few work stoppages.

Intellectual Property

Patents, trademarks and other intellectual property rights are important to our business. We also rely upon trade secrets, manufacturing know-how, continuing technological innovations, and licensing opportunities to maintain and improve our competitive position; and to protect certain confidential information, we rely on copyright and trade secret law and enter into confidentiality agreements as applicable. We review third-party intellectual property rights, including patents and patent applications, as available, in an effort to develop an effective intellectual property strategy, avoid infringement of third-party intellectual property rights, identify licensing opportunities, and monitor the intellectual property claims of others.

We own a large portfolio of patents that principally relate to our products and technologies, and we have, from time to time, licensed some of our patents. Patents for individual products and processes extend for varying periods according to the date of patent filing or grant and the legal term of patents in various countries where patent protection is obtained.

We protect our brands by trademark registrations in key markets in which our products are sold. Such trademark protections apply to our core WABCO brand as well as many of our product brand names. Our trademarks allow us to

further distinguish our company and our products and are important in our relationships with customers, suppliers and partners.

While we consider our patents and trademarks to be valuable assets, we do not believe that our competitive position is materially dependent upon any single patent or group of related patents. At the same time, we recognize that technical leadership is an ongoing pillar of success and our intellectual property portfolio will continue to grow in importance for the company as a whole as a result. We believe that the combination of our technology, patents, know-how and other intellectual property rights and assets creates an advantage for our business and we continue to focus on successful patent prosecution to build a strong patent portfolio, trademark protection and the exploitation and protection of other intellectual property rights in terms of our intellectual property, R&D and business strategies.

Table of Contents

Environmental Regulation

Our operations are subject to local, state, federal and foreign environmental laws and regulations that govern activities or operations that may have adverse environmental effects and which impose liability for clean-up costs resulting from past spills, disposals or other releases of hazardous wastes and environmental compliance. Generally, the international requirements that impact the majority of our operations tend to be no more restrictive than those in effect in the U.S.

Throughout the world, we have been dedicated to being an environmentally responsible manufacturer, neighbor and employer. We have a number of proactive programs in place to minimize our impact on the environment and believe that we are in substantial compliance with environmental laws and regulations. Manufacturing facilities are audited on a regular basis. Twenty-four of our manufacturing (M) and logistic (L) sites have Environmental Management Systems (EMS), which have been certified as ISO 14001 compliant. In addition, two of our test tracks (TT) have also been certified as ISO 14001 compliant. These sites are those located in :

Campinas, Brazil (M, L)	Jeverson, Germany (TT)	Stanowice, Poland (M)
Jinan, China (M)	Ambattur, India (M)	Wroclaw, Poland (2 plants, M)
Qingdao, China (M)	Jamshedpur, India (M)	Charleston, United States (M)
Taishan, China (M)	Mahindra World City, India (M)	Rochester Hills, United States (M)
Hanover, Germany (M)	Lucknow, India (M)	North Mankato, United States (M)
Langehagen, Germany (L)	Chennai, India (TT)	Hanover, United States (M)
Gronau, Germany (M)	Pantnagar, India (M)	Wytheville, United States (M)
Mannheim, Germany (M)	Pyungtaek, Korea (M)	Hebron, United States (M)

A number of our facilities are undertaking responsive actions to address groundwater and soil issues. Expenditures in 2018 to evaluate and remediate these sites were not material, and are also not expected to be material in 2019. Additional sites may be identified for environmental remediation in the future, including properties previously transferred and with respect to which the Company may have contractual indemnification obligations.

Available Information

Our web site is located at www.wabco-auto.com. Our periodic reports and all amendments to those reports required to be filed or furnished pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934 are available free of charge through the web site. During the period covered by this report, we posted our periodic reports on Form 10-Q and our current reports on Form 8-K and any amendments to those documents to our web site as soon as such reports were filed or furnished electronically with the Securities Exchange Commission (SEC). We will continue to post to our web site such reports and amendments as soon as reasonably practicable after such reports are filed with or furnished to the SEC.

The Separation of WABCO from Trane

The spin-off by Trane of its Vehicle Control Systems business became effective on July 31, 2007, through a distribution of 100% of the common stock of WABCO to Trane's shareholders (the Distribution). The Distribution was effected through a separation and distribution agreement pursuant to which Trane distributed all of the shares of WABCO common stock as a dividend on Trane common stock, in the amount of one share of WABCO common stock for every three shares of outstanding Trane common stock to each shareholder on the record date. Trane received a private letter ruling from the Internal Revenue Service (IRS) and an opinion from tax counsel indicating that the spin-off was tax free to the shareholders of Trane and WABCO.

Code of Conduct and Ethics

Our Code of Conduct and Ethics, which applies to all employees, including all executive officers and senior financial officers and directors, is posted on our web site www.wabco-auto.com. The Code of Conduct and Ethics is compliant with Item 406 of SEC Regulation S-K and the NYSE corporate governance listing standards. Any changes to the Code of Conduct and Ethics that affect the provisions required by Item 406 of Regulation S-K will also be disclosed on the web site.

Any waivers of the Code of Conduct and Ethics for our executive officers, directors or senior financial officers must be approved by our Audit Committee and those waivers, if any are ever granted, would be disclosed on our web site under the caption "Exemptions to the Code of Conduct and Ethics." There have been no waivers to the Code of Conduct and Ethics.

Table of Contents

ITEM 1A. RISK FACTORS

Any of the following factors could have a material adverse effect on our future operating results as well as other factors included in “Management’s Discussion and Analysis of Financial Condition and Results of Operations - Information Concerning Forward Looking Statements.”

Risks Relating to Our Business

Our sales could decline due to macro-economic factors, downturns in the industry, regulatory changes, and other factors outside of our control.

Changes in economic conditions, significant downturns in our industry, regulatory changes impacting our supply chain and the purchasing patterns of commercial vehicles, including the ability to trade across borders and import and export our products, and changes in the local economies of the countries or regions in which we sell our products, such as changes in consumer confidence, increases in interest rates, inflation and increases in unemployment, could affect demand for our products, which could negatively affect our business and results of operations.

Demand for new trucks and buses in the markets in which we operate has a significant impact on our sales. Adverse economic conditions in our markets, particularly in Europe, and other factors may cause our customers to reduce truck and bus production, which could have an adverse effect on our results of operations and financial condition.

A global recession would negatively impact our customers and result in reduced demand for our products, which would therefore have a significant negative impact on our business.

During the 2008-2009 recession, the credit markets experienced a period of unprecedented turmoil and upheaval characterized by significantly reduced availability of credit and increased borrowing costs. The disruptions in the credit markets and impacts of the global recession negatively impacted consumer spending patterns and caused our customers to reduce truck and bus production. During 2012, the commercial vehicle industry experienced an abrupt slowdown to the significant recovery seen in 2010 and 2011 in our more developed markets, in addition to double digit declines in some of our emerging markets, namely Brazil and China. A further global recession could cause our customers to again reduce truck and bus production, which would have a negative impact on our business and results of operations, our operating cash flows and our financial condition.

Our exposure to exchange rate fluctuations on cross border transactions and the translation of local currency results into U.S. Dollars could negatively impact our results of operations.

We conduct business through subsidiaries in many different countries, including most of the major countries of Western and Eastern Europe, Brazil, Russia, China, South Korea, India, Thailand and Japan, and fluctuations in currency exchange rates have a significant impact on the reported results of our operations, which are presented in U.S. Dollars. In 2018, approximately 78% of our combined sales occurred outside of the United States. A significant and growing portion of our products are manufactured in best-cost countries and sold in various countries. Cross border transactions, both with external parties and intercompany relationships, result in exposure to foreign currency exchange effects. Accordingly, fluctuations in the currency exchange rates could negatively impact our results of operations, especially fluctuations in the exchange rates of the currencies for the countries referred to above. Additionally, our results of operations are translated into U.S. Dollars for reporting purposes. The strengthening or weakening of the U.S. Dollar results in unfavorable or favorable translation effects as the results of foreign locations are translated into U.S. Dollars.

The Company could be subject to an increase in its tax rates following the adoption of new U.S. or international tax legislation.

The Company is subject to taxes in the U.S. and numerous foreign jurisdictions where a number of the Company's subsidiaries are organized. Due to economic and political conditions, the tax rate in various jurisdictions may be subject to significant changes. The Company's overall effective tax rate could be affected by changes in the mix of earnings in countries with different statutory tax rates or changes in tax laws or their interpretation.

The OECD, which represents a coalition of member countries, has recommended changes to numerous long-standing tax principles relating to Base Erosion and Profit Shifting (BEPS). These changes are being adopted and implemented by many of the countries in which we do business and may increase our taxes in these countries. In addition, the European Commission has launched several initiatives to implement BEPS actions including an anti-tax avoidance directive and having a common (consolidated) corporate tax base. One impact for the Company is that the group's Dutch hybrid financing structure will no longer be effective as of January 1, 2019. The Company is in the process of establishing new treasury function in Switzerland but this

Table of Contents

change will give rise to an increase in our effective tax rate.

On December 22, 2017, the U.S. government enacted comprehensive tax legislation known as the Tax Cuts and Jobs Act (The Tax Act). The Tax Act includes a reduction in the corporate tax rate to 21%, from 35%, implementing a territorial tax system, a one-time transition tax on unrepatriated earnings of foreign subsidiaries at reduced tax rates regardless of whether the earnings are repatriated and the modification or repeal of many business deductions and credits.

While the Tax Act provides for a territorial tax system, beginning in 2018, it includes the global intangible low-taxed income (GILTI) provision. The Company elected to account for GILTI tax in the period in which it is incurred. The GILTI provision requires the Company to include in its U.S. income tax return foreign subsidiary earnings in excess of an allowable return on foreign subsidiary's tangible assets. The GILTI tax expense is primarily caused by a U.S. foreign tax credit limitation which requires an allocation of interest expense to the GILTI income, effectively rendering the allocated interest expense non-deductible. The GILTI provision has resulted in a \$1.5 million increase in income tax expense for 2018.

The SEC staff issued Staff Accounting Bulletin No. 118 (SAB 118) to address the application of U.S. GAAP in situations when a registrant does not have the necessary information available, prepared, or analyzed (including computations) in reasonable detail to complete the accounting for certain income tax effects of the Tax Act. During 2017, the Company recognized provisional income tax expense of \$100.0 million. The provisional U.S. tax is comprised of the estimated transition tax payable with the Company's U.S. tax filings of \$196.4 million offset by the reversal of previously recorded deferred tax liabilities on outside basis differences in foreign subsidiaries of \$96.4 million. During 2018, the Company recognized \$5.8 million of income tax expense related to the final transition tax payable of \$202.2 million included on the Company's 2017 U.S. tax filing. In addition, we recognized \$2.0 million of income tax expense related to changes in the revaluation of deferred tax assets and liabilities, which was primarily due to finalization of R.H. Sheppard Co., Inc. purchase accounting. The accounting for the tax effects of the Tax Act has been completed in 2018.

The ultimate impact of the Tax Act may differ from our assessment and amounts recorded as income tax expense may require further adjustment due to, among other things, additional analysis, changes in interpretations or applications of the Tax Act, and additional regulatory guidance that may be issued.

Our annual effective tax rate will likely increase, perhaps significantly, which would negatively impact our results of operations.

Our overall effective tax rate (ETR) is equal to our total expense as a percentage of our total profit or loss before tax. However, tax expenses and benefits are determined separately for each tax paying entity or group of entities that is consolidated for tax purposes in each jurisdiction.

The Company's ETR of 10.6% for the year ended December 31, 2018 included non-recurring items which resulted in our ETR being significantly lower than our statutory rate of 21%. See Note 17 of Notes to the Consolidated Financial Statements for a detailed explanation of the ETR for the year ended December 31, 2018. The main non-recurring items in 2018 reduced the ETR in aggregate by 9.7%. In addition, other tax risks identified separately may give rise to an increase in our ETR.

Management's current estimate of the 2019 effective tax rate is approximately 18%, which includes the anticipated benefit associated with the reorganization of the Company's treasury function which will be located in our new corporate headquarters in Switzerland and assumes that we will be able to establish a regulated insurance company to better manage our group unfunded pension liabilities - see "Management's Discussion and Analysis of Financial

Condition and Results of Operations - Results of Operations for 2018 Compared with 2017 - Income Taxes,” and Note 14 of Notes to the Consolidated Financial Statements. If we are not able to establish the regulated insurance company described above and to realize the tax benefits associated with these projects, our ETR could significantly increase, which may materially and adversely impact our results of operations.

The value of our deferred tax assets could become impaired, which could materially and adversely affect our operating results.

As of December 31, 2018, we had approximately \$161.3 million in net deferred tax assets. These deferred tax assets include post-retirement and other employee benefits and net operating loss carryovers that can be used to offset taxable income in future periods and reduce income taxes payable in those future periods. Each quarter, we determine the probability of the realization of deferred tax assets, using significant judgments and estimates with respect to, among other things, historical operating results and expectations of future earnings and tax planning strategies. If we determine in the future that there is insufficient evidence to support the valuation of these assets, due to the risk factors described herein or other factors, we may be required to record or further adjust a valuation allowance to revalue our deferred tax assets. Such a revaluation could result in material non-cash expense in the period in which the valuation allowance is adjusted and could have a material adverse effect on our results of operations.

Table of Contents

The occurrence of tax liabilities arising from tax audits in the jurisdictions in which we operate could materially and adversely affect our overall effective tax rate and our results of operations.

The Company is subject to tax audits in all major countries that it does business. While the Company believes it complies with all local country tax laws, there are many transactions and calculations where the ultimate tax determination is uncertain and significant judgment is required in evaluating uncertain tax positions. Although the Company believes its tax estimates and reserves are adequate for all uncertain tax positions, if the results of an audit or litigation are different from the amounts accrued it could have a material effect on the Company's consolidated financial statements in the period or periods in which the determination is made. We adjust the estimates and reserves in light of changing facts and circumstances such as the closing of a tax audit or a court decision.

We may have exposure to additional tax liabilities as a result of the Company no longer meeting the requirements for certain tax rulings it has been granted.

WABCO has received a number of tax rulings and incentives in countries in which it is carrying out significant operations. If these incentives are revoked or if the Company no longer complies with the tax incentive requirements, it may have a significant impact on the Company's global effective tax rate which could have a material adverse effect on our results of operations.

The United Kingdom's referendum to exit from the European Union will continue to have uncertain effects and could adversely impact our business, results of operations and financial condition.

The United Kingdom has voted to exit from the European Union (commonly referred to as "Brexit") and the terms of the withdrawal and the United Kingdom's relationship with the European Union after the withdrawal are subject to ongoing negotiations. The United Kingdom may decide to leave the European Union on March 29, 2019 with no agreement (a so-called "hard Brexit").

The Brexit vote and subsequent negotiations have impacted global markets and the value of the British Pound as compared to the U.S. dollar and other major currencies. In addition, there remains considerable uncertainty around Brexit and volatility in the securities markets and in currency exchange rates may continue. The effects of Brexit on the economies of the European Union are also unknown and unpredictable, especially in the case of a hard Brexit. It is possible that the level of economic activity in the United Kingdom and the European region will be adversely impacted and that there will be increased regulatory and legal complexities and costs.

While we have not experienced any material financial impact from Brexit on our business to date, we cannot predict the results of the Brexit negotiations or their future effects. Any impact from Brexit on our business and operations over the long term will depend, in part, on the outcome of negotiations related to tariffs, tax, trade, security and other regulatory matters. The effects of Brexit could be disruptive to our operations and business relationships in the European markets and elsewhere.

We are subject to general risks associated with our foreign operations.

In addition to the currency exchange risks inherent in operating in many different foreign countries, there are other risks inherent in our international operations.

The risks related to our foreign operations that we more often face in the normal course of business include:

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increases in non-U.S. tax rates and the amount of non-U.S. earnings relative to total combined earnings could change and impact our combined tax rate;

foreign earnings may be subject to withholding requirements or the imposition of tariffs, price or exchange controls, or other restrictions;

general economic and political conditions in countries where we operate may have an adverse effect on our operations in those countries;

governmental actions (such as restrictions on transfer of funds and trade protection measures, including export duties, quotas and customs duties and tariffs);

we may have difficulty complying with a variety of foreign laws and regulations, some of which may conflict with United States law, and the uncertainty created by this legal environment could limit our ability to effectively enforce our rights in certain markets; and

Table of Contents

in several of the countries in which we do business, we rely upon the ongoing performance of our joint venture partners who bear risks similar to our risks and also may include obligations they have under related shareholders' agreements and risk of being denied access to the capital markets which could lead to resource demands on the Company in order to maintain or advance its strategy.

The ability to manage these risks could be difficult and may limit our operations and make the manufacture and distribution of our products internationally more difficult, which could negatively affect our business and results of operations.

Increasing our financial leverage could affect our operations and profitability.

As of December 31, 2018, our total debt balance was \$845.2 million compared to \$1,409.8 million as of our prior fiscal year end. Our indebtedness could affect our business and financial condition in various ways, including:

- increasing our interest expense under our revolving credit facilities or other variable-rate borrowing if interest rates were to rise; and
- potentially limiting our ability to borrow additional funds on favorable terms, or at all.

While we believe we will have the ability to service our debt, respect all of the covenants contained in the credit facilities and obtain additional capital in the future if and when needed, that will depend upon our results of operations and financial position at the time, the then-current state of the credit and financial markets, and other factors that may be beyond our control. If we are unable to service our debt or obtain additional capital in the future on favorable terms, our financial condition and results of operations would be adversely affected.

Changes in factors that impact the determination of our non-U.S. pension liabilities may adversely affect us.

Certain of our non-U.S. subsidiaries sponsor defined benefit pension plans, which generally provide benefits based on negotiated amounts for each year of service. The Company's pension expense and its required contributions to its pension plans are directly affected by the value of plan assets, the projected and actual rates of return on plan assets and the actuarial assumptions the Company uses to measure its defined benefit pension plan obligations, including the discount rate at which future projected and accumulated pension obligations are discounted to a present value and the inflation rate. The Company could experience increased pension expense due to a combination of factors, including the decreased investment performance of its pension plan assets, decreases in the discount rate and changes in its assumptions relating to the expected return on plan assets. The Company could also experience increased other post-retirement expense due to decreases in the discount rate, increases in the health care trend rate and changes in demographics. If the actual trends in these factors are less favorable than our assumptions, this could have an adverse effect on our results of operations and financial condition.

We purchase components and parts containing base metals and other commodities. If we are unable to obtain such components and parts or obtain them at reasonable price levels due to fluctuations in the costs of the underlying raw materials, our ability to maintain existing sales margins may be affected.

We purchase a broad range of materials and components and parts throughout the world in connection with our manufacturing activities. Major items include electronic components and parts containing aluminum, steel, copper, zinc, rubber and plastics. The cost of components and parts, which reflect the cost of the raw materials used therein, represents a significant portion of our total costs. Price increases of the underlying commodities may adversely affect our results of operations. Although we maintain alternative sources for components and parts, our business is subject to the risk of price fluctuations and periodic delays in the delivery of certain raw materials to our suppliers. The sudden inability of a supplier to deliver components or to do so at reasonable prices could have a temporary adverse

effect on our production of certain products or the cost at which we can produce those products. In addition, any change in the supply or price of raw materials could materially adversely affect our future business and results of operations.

If we are not able to maintain good relations with our employees, we could suffer work stoppages that could negatively affect our business and results of operations.

Employees located in our sites in Europe, Asia and South America are subject to collective bargaining, with internal company agreements or external agreements at the region or country level. Currently approximately 50% of our workforce is covered by collective bargaining agreements. These employees' right to strike is typically protected by law and union membership is confidential information which does not have to be provided to the employer. Our U.S. facilities are non-union. Any disputes with our employee

Table of Contents

base could result in work stoppages or labor protests, which could disrupt our operations. Any such labor disputes could negatively affect our business and results of operations.

We are dependent on key customers.

We rely on several key customers. For the fiscal year ending December 31, 2018, sales to our top ten customers accounted for approximately 49% of our sales. Many of our customers place orders for products on an as-needed basis and operate in cyclical industries and, as a result, their order levels have varied from period to period in the past and may vary significantly in the future. Such customer orders are dependent upon their markets and customers and may be subject to delays or cancellations. As a result of dependence on our key customers, we have experienced and could experience in the future a material adverse effect on our business and results of operations if any of the following were to occur:

- the loss of any key customer, in whole or in part;
- a declining market in which customers reduce orders or demand reduced prices; or
- a strike or work stoppage at a key customer facility, which could affect both its suppliers and customers.

We are subject to price reduction demands from our OEM customers. These price reductions could adversely affect the results of our operations

Downward pricing pressure is a characteristic of the automotive industry, and as with other suppliers to commercial vehicle OEMs, we continue to experience price reduction demands from our customers. In the face of lower prices to customers, we must reduce our operating costs in order to maintain profitability. Whilst we have successfully implemented cost reduction initiatives, we anticipate our customers will continue to pursue aggressive pricing strategies. Customers may also request that we pay for design, engineering and tooling costs that are incurred prior to the start of production and recover these costs through amortization in the price per unit of the applicable component. If the Company is unable to offset customer price reductions through improved operating efficiencies, new manufacturing processes, sourcing alternatives, technology enhancements and other initiatives, if a given program is not launched or is launched with significantly lower volumes than planned, or if we are unable to avoid price reductions from our customers, the results of our operations could be adversely affected.

If there are changes in the environmental or other regulations that affect one or more of our current or future products, it could have a negative impact on our business and results of operations.

We are currently subject to various environmental and other regulations in the U.S. and internationally. Risk of environmental liability is inherent in our current and former manufacturing activities. Under certain environmental laws, we could be held jointly and severally responsible for the remediation of any hazardous substance contamination at our past and present facilities and at third party waste disposal sites and could also be held liable for damages to natural resources and any consequences arising out of human exposure to such substances or other environmental damage. See Environmental Regulation for a discussion of the Company's current remediation efforts. While we have a number of proactive programs underway to minimize the impact of the production and use of our products on the environment and believe that we are in substantial compliance with environmental laws and regulations, we cannot predict whether there will be changes in the environmental regulations affecting our products.

Any changes in the environmental and other regulations which affect our current or future products could have a negative impact on our business if we are unable to adjust our product offering to comply with such regulatory changes. In addition, it is possible that we will incur increased costs as a result of complying with environmental regulations, which could have a material adverse effect on our business, results of operations and financial condition.

We may be subject to product liability, warranty and recall claims, which may increase the costs of doing business and adversely affect our business, financial condition and results of operations.

We are subject to a risk of product liability or warranty claims if our products actually or allegedly fail to perform as expected, whether or not due to defective supplier parts, or the use of our products results, or are alleged to result, in bodily injury and/or property damage. While we maintain reasonable limits of insurance coverage to appropriately respond to such exposures, large product liability claims, if made, could exceed our insurance coverage limits and insurance may not continue to be available on commercially acceptable terms, if at all. We may incur significant costs to defend these claims and may not be able to recover related costs from suppliers. We may also experience any product liability losses in the future. In addition, if any of our designed products are or are alleged to be defective, we may be required to participate in recalls and exchanges of such products. In the past five years, our net warranty expense has fluctuated between approximately 0.8% and 1.1% of sales on an annual basis. Individual quarters were above or below the annual averages. The future cost associated with providing product warranties and/or bearing

Table of Contents

the cost of repair or replacement of our products could exceed our historical experience and have a material adverse effect on our business, financial condition and results of operations.

We are required to plan our capacity well in advance of production and our success depends on having available capacity and effectively using it.

We principally compete for new business at the beginning of the development of our customers' new products. Our customers' new product development generally begins significantly prior to the marketing and production of their new products and our supply of our products generally lasts for the life of our customers' products. Nevertheless, our customers may move business to other suppliers or request price reductions during the life cycle of a product. The long development and sales cycle of our new products, combined with the specialized nature of many of our facilities and the resulting difficulty in shifting work from one facility to another, could result in variances in capacity utilization. In order to meet our customers' requirements, we may be required to supply our customers regardless of the actual cost to us and consequently we may suffer an adverse impact on our operating profit margins and results of operations.

We must continue to make technological advances, or we may not be able to successfully compete in our industry.

We operate in an industry in which technological advancements are necessary to remain competitive. Accordingly, we devote substantial resources and collaborate with technology development partners to improve already technologically complex products and to remain a leader in technological innovation. However, if we fail to continue to make technological improvements or our competitors develop technologically superior products, it could have an adverse effect on our operating results or financial condition.

A disruption in our information technology systems including one related to cyber security could pose a risk to the security of our systems, products and services and could adversely affect our business and financial performance.

We rely on the accuracy, capacity and security of our information technology systems. Despite our efforts to protect data or information, our products, services, and systems, and those of our third-party service providers, may be vulnerable to failures, security breaches, theft, misplaced or lost data, programming and/or human errors. A system failure, security breach or error could result in:

- the unauthorized access, use, disclosure, modification or destruction of information;
- the compromising of sensitive, confidential or personal data or information, including our intellectual property or trade secrets;
- the improper use of our systems, software solutions or networks; and
- production downtimes and operational disruptions.

We may incur significant costs related to the threat of any unauthorized access to or malfunction of our systems, products or services, including but not limited to, costs of protecting our products and systems. To the extent that data is inappropriately used or disclosed, lost, modified or destroyed, our business may be interrupted and we may incur significant costs, fines or penalties related to defective products, regulatory investigations, and litigation. The development of products linked to autonomous driving may be vulnerable to security breaches or system failure and entail severe damages in case of accident. Our reputation and brand names could be materially damaged by the threat or perpetration of cyber crime and the sales of our products and services may decrease. Each of these outcomes could adversely affect our competitive position, relationships with our customers, financial condition and results of operations.

We may not be successful in executing and integrating acquisitions into our operations, which could harm our results of operations and financial condition.

We routinely evaluate potential acquisitions and may pursue acquisition opportunities, some of which could be material to our business. We cannot provide assurance whether we will be successful in pursuing any acquisition opportunities or what the consequences of any acquisition would be. We may encounter various risks in any acquisitions, including:

- the possible inability to integrate an acquired business into our operations;
- diversion of management's attention;
- loss of key management personnel;
- unanticipated problems or liabilities; and
- increased labor and regulatory compliance costs of acquired businesses.

Table of Contents

Some or all of those risks could impair our results of operations and impact our financial condition. We may finance any future acquisitions from internally generated funds, bank borrowings, public offerings or private placements of equity or debt securities, or a combination of the foregoing. Acquisitions may involve the expenditure of significant funds and management time.

Acquisitions may also require us to increase our borrowings under our bank credit facilities or other debt instruments, or to seek new sources of liquidity. Increased borrowings would correspondingly increase our financial leverage, and could result in lower credit assessments and increased future borrowing costs. These risks could also reduce our flexibility to respond to changes in the industry or in general economic conditions. If we are unable to identify or execute on appropriate opportunities for acquisition, investment or growth, our business could be materially adversely affected.

The Public Company Accounting Oversight Board, or PCAOB, is currently unable to inspect the audit work and practices of auditors operating in Belgium, including our auditor.

Our auditors, Ernst & Young Bedrijfsrevisoren BCVBA/Reviseurs d'Entreprises SCCRL, are registered with the Public Company Accounting Oversight Board (PCAOB). Our auditors, like any other independent registered public accounting firms operating in Belgium, are not yet permitted, because of Belgian regulation impediments, to be subject to inspections by the PCAOB that assess their compliance with U.S. law and professional standards in connection with performance of audits of financial statements filed with the SEC. As a result, our investors may not realize the potential benefits of such inspections.

Risks Relating to the Separation

We are responsible for certain of Trane's contingent and other corporate liabilities.

Under the Indemnification and Cooperation Agreement, the Separation and Distribution Agreement and the Tax Sharing Agreement, our wholly-owned subsidiary WABCO Europe BVBA has assumed and is responsible for certain contingent liabilities related to Trane's business (including certain associated costs and expenses, whether arising prior to, at or after the Distribution) and will indemnify Trane for these liabilities. Among the contingent liabilities against which we will indemnify Trane and the other indemnities, are liabilities associated with certain non-U.S. tax liabilities and certain U.S. and non-U.S. environmental liabilities associated with certain Trane entities.

Risks Relating to Our Common Stock

Your percentage ownership in WABCO may be diluted in the future.

Your percentage ownership in WABCO may be diluted in the future because of equity awards that have already been granted and that we expect will be granted to our directors and officers in the future under our Omnibus Incentive Plan. In addition, we may in the future issue additional equity securities in order to fund working capital needs, capital expenditures and product development, or to make acquisitions and other investments, which may dilute your ownership interest.

We cannot assure you that we will repurchase shares or pay any dividends.

While we have historically returned value to shareholders in the form of share repurchases and/or dividends, our ability to repurchase shares and pay dividends may be limited by available cash, contingent liabilities and surplus. Moreover, all decisions regarding the declaration and payment of dividends and share repurchases will be at the sole discretion of our Board and will be evaluated from time to time in light of our financial condition, earnings, capital requirements of our business, covenants associated with certain debt obligations, legal requirements, regulatory constraints, industry practice and other factors that our Board deems relevant.

Provisions in our amended and restated certificate of incorporation and amended and restated by-laws, and certain provisions of Delaware law may prevent or delay an acquisition of our company, which could decrease the trading price of our common stock.

Our amended and restated certificate of incorporation, amended and restated by-laws and Delaware law contain provisions that are intended to deter coercive takeover practices and to encourage prospective acquirers to negotiate with our Board of Directors rather than to attempt a hostile takeover. These provisions include, among others:

Table of Contents

- Board of Directors that is divided into three classes with staggered terms;
- elimination of the right of our shareholders to act by written consent;
- rules regarding how shareholders may present proposals or nominate directors for election at shareholder meetings;
- the right of our Board to issue preferred stock without shareholder approval; and
- limitations on the right of shareholders to remove directors.

Delaware law also imposes some restrictions on mergers and other business combinations between us and any holder of 15% or more of our outstanding common stock.

We believe these provisions protect our shareholders from coercive or otherwise unfair takeover tactics by requiring potential acquirers to negotiate with our Board and by providing our Board with more time to assess any acquisition proposal. These provisions are not intended to make our company immune from takeovers. However, these provisions apply even if the offer may be considered beneficial by some shareholders and could delay or prevent an acquisition that our Board determines is not in the best interests of our shareholders and our company.

ITEM 1B. UNRESOLVED STAFF COMMENTS

None.

Table of Contents

ITEM 2. PROPERTIES

As of February 15, 2019, our manufacturing activities, test tracks and engineering centers are located at 37 sites in 12 countries.

Site Location	Activity and Major Products Manufactured
Campinas, Brazil	Vehicle control systems
Jinan, China (2 sites)	Braking systems and compressors
Qingdao, China	Braking systems
Taishan, China	Foundation brakes
Shanghai, China	Engineering center
Rovaniemi, Finland	Test track
Hanover, Germany (2 sites)	Vehicle control systems and engineering center
Gronau, Germany	Compressors and hydraulics
Mannheim, Germany	Foundation brakes
Jeversen, Germany	Test track
Ambattur, India	Vehicle control systems
Jamshedpur, India	Vehicle control systems
Mahindra World City, India	Vehicle control systems
Pantnagar, India	Vehicle control systems
Lucknow, India	Vehicle control systems
Chennai, India (2 sites)	Test track and engineering center
Pune, India	Engineering center
Pyungtaek, Korea	Braking systems
Stanowice, Poland	Remanufactured products
Wroclaw, Poland (3 sites)	Vehicle control systems (2 plants) and engineering center
Miass, Russia	Actuators and foundation brakes
Chelny, Russia	Braking systems
Rayong, Thailand	Actuators and foundation brakes
Charleston, SC, United States	Air compressors and braking system components
Rochester Hills, MI, United States	Remanufactured products
North Mankato, MN, United States	Braking systems
Wytheville, VA, United States	Steering systems
Hebron, KY, United States	Braking systems
Hanover, PA, United States	Steering systems and foundry
Auburn Hills, MI, United States	Application engineering
Empalme, Mexico	Braking systems
Toronto, Canada	Aerodynamic products

We own all of the plants described above, except for the Jinan, Shanghai, Rovaniemi, Pune, Taishan, Stanowice, Miass, Chelny, Rayong, Rochester Hills, Charleston, Auburn Hills and Empalme sites which are leased. Our properties are generally in good condition, are well maintained, and are generally suitable and adequate to carry out our business. In 2018, the manufacturing plants, taken as a whole, met our capacity needs.

We also own or lease warehouse and office space for administrative and sales staff. Our headquarters, located in Brussels, Belgium, and our executive offices, located in Auburn Hills are leased.

ITEM 3. LEGAL PROCEEDINGS

We may be party to a variety of legal proceedings with respect to environmental related, employee related, product related, and general liability and automotive litigation related matters that arise in the normal course of our business. While the results of these legal proceedings cannot be predicted with certainty, management believes that the final outcome of these proceedings will

27

Table of Contents

not have a material adverse effect on our combined results of operations or financial position. For more information on current legal proceedings, refer to Note 16 of Notes to the Consolidated Financial Statements.

ITEM 4. MINE SAFETY DISCLOSURES

None.

28

Table of Contents

ITEM 4A. EXECUTIVE OFFICERS OF THE REGISTRANT

The following sets forth certain information as of February 15, 2019 with respect to each person who is an executive officer of the Company:

Name	Age	Position(s)
Jacques Esculier	59	Chairman of the Board of Directors and Chief Executive Officer
Roberto Fioroni	49	Chief Financial Officer
Mazen Mazraani	50	Chief Human Resources Officer
Nicolas Bardot	47	Chief Supply Chain Officer
Lisa Brown	40	Chief Legal Officer and Secretary
Jorge Solis*	46	Senior V.P. Corporate Business Development
Nick Rens	55	President EMEA
Sean Deason	47	Vice President Controller and Investor Relations
Christian Brenneke	44	Chief Technology Officer

* Current employment will end on February 28, 2019.

Each officer of the Company is appointed by the Board of Directors to a term of office expiring on the date of the first Board meeting after the Annual Meeting of Shareholders next succeeding his or her appointment or such officer's earlier resignation or removal.

Jacques Esculier has served as our Chief Executive Officer and director since July 2007. In May 2009, he was appointed Chairman of our Board of Directors. Prior to July 2007, Mr. Esculier served as Vice President of Trane and President of its Vehicle Control Systems business, a position he had held since January 2004. Prior to holding that position, Mr. Esculier served in the capacity of Business Leader for the Trane Commercial Systems' Europe, Middle East, Africa, India & Asia Region from 2002 through January 2004. Prior to joining Trane in 2002, Mr. Esculier spent more than six years in leadership positions at AlliedSignal/Honeywell. He was Vice President and General Manager of Environmental Control and Power Systems Enterprise based in Los Angeles, and Vice President of Aftermarket Services-Asia Pacific based in Singapore. Mr. Esculier is a member of the Board of Directors of Pentair plc.

Roberto Fioroni joined WABCO in June 2018 as Chief Financial Officer. Prior to his appointment at WABCO, Mr. Fioroni served from March 2014 as Vice President, Finance, with The Goodyear Tire & Rubber Company's Europe, Middle East and Africa (EMEA) business unit. Mr. Fioroni joined Goodyear in 2009 as Finance Director for the Eastern Europe, Middle East and Africa (EEMEA) region before being appointed Vice President, Global Internal Audit, in 2011. Prior to joining Goodyear, Mr. Fioroni was with General Electric for 13 years where he held a number of senior finance positions. He was latterly Chief Financial Officer (EMEA) for General Electric's Security Division. Mr. Fioroni holds a degree in Business Administration from the Universita Commerciale Luigi Bocconi in Milan, Italy.

Mazen Mazraani has served as our Chief Human Resources Officer since September 2016, having served as our Interim Chief Human Resources Officer since October 2015. Prior to this, Mr. Mazraani served as our Compensation and Benefits Leader, a position he had held since November 2008, and as our Compensation & Benefits Manager from June 2007 when he joined WABCO. Before joining WABCO, Mr. Mazraani served as Head of Compensation & Benefits for Dexia, a Belgian-French Bank specialized in public financing. Before taking up his in-house roles, Mr. Mazraani worked for 7 years as a tax consultant at Coopers & Lybrand and Ernst & Young. Specializing in Journalism and Communication from Brussels University, he holds a Bachelor's degree in Business Administration and a Master's degree in Tax Management from Solvay Business School in Brussels.

Nicolas Bardot was appointed as our Chief Supply Chain Officer in September 2016. Prior to this, Mr. Bardot served as our Vice President, Sourcing and Purchasing, since September 2013. Prior to holding this position, Mr. Bardot was our Strategic Purchasing Leader. Prior to joining WABCO, Mr. Bardot worked in France, the Czech Republic and China, and was a business purchasing leader for Valeo Group, a global automotive supplier. Overall, he has gained more than 17 years of experience in positions of increasing responsibility within sourcing and business management. Mr. Bardot holds a Master's degree in Purchasing and Supply Chain Management from ESSEC Business School and completed executive training in business administration and management at INSEAD, both located in Paris, France.

Lisa Brown has served as our Chief Legal Officer and Secretary since June 2016 after holding the role of Vice President, Legal and Secretary since April 2015. Prior to this, Ms. Brown served as our Senior Legal Counsel since February 2012. Prior to

Table of Contents

joining WABCO, Ms. Brown served as Legal Director and Company Secretary since March 2011 for the largest pet care retailer in the United Kingdom. From 2006 to 2011, she held various legal leadership roles for SSL International Plc, one of the world's leading providers of consumer healthcare products. Ms. Brown held the position of Group Head of Legal and Intellectual Property and was responsible for creating and driving legal strategy and risk management across the global operations, including research and development, manufacturing, and sales. Before taking up her in-house roles, Ms. Brown worked in private practice as an Intellectual Property Attorney specializing in brand and copyright protection. Ms. Brown is a registered trademark attorney. She holds a Bachelor of Laws degree, as well as a Diploma in Legal Practice from Nottingham Law School in Nottingham, United Kingdom.

Jorge Solis was appointed Senior V.P. Corporate Business Development in October 2018. Mr. Solis joined WABCO in August 2010 as Strategic Purchasing Leader. He was promoted in October 2011 to Vice President, Sourcing and Purchasing, a position he held through September 2013. At that time, Mr. Solis was appointed Vice President, Driveline and Suspension Controls Business Unit. In September 2015, Mr. Solis took on the role of Vice President, Vehicle Dynamics and Controls Business Unit and the role of President, Truck, Bus and Car OEMs Division in August 2016. Prior to joining WABCO, Mr. Solis worked in Mexico, the United States and France, and was a business purchasing leader for Valeo Group. Overall, he has gained more than 20 years of experience in positions of increasing responsibility within sourcing, quality, manufacturing, and business management. Mr. Solis holds a Master's degree in engineering from Technical University in Monterrey (ITESM), Mexico. In addition, he completed educational programs in international marketing at ITESM, as well as executive training in business administration and management at INSEAD.

Nick Rens was appointed EMEA President in October 2018. Prior to this, Mr. Rens served as our President, Trailer Systems, Aftermarket & Off-Highway since July 2014 and our Vice President, Aftermarket since November 2008. This was in addition to his role as Vice President, Trailer Systems, a role which he had held since 2005. He also assumed the role of Vice President, Driveline Controls, from January 2013 to September 2013. Previously, Mr. Rens worked for three years as our regional trailer sales leader for southern and western Europe based in Claye Souilly, France. Since 1999, Mr. Rens has also been Managing Director of WABCO Belgium where he held several sales leadership roles both in the Aftermarket and Original Equipment sales organizations. Mr. Rens has worked at the Company for almost his entire career, having joined the Company in 1989 as a product line specialist.

Sean Deason has served as our Vice President Controller and Investor Relations since June 2015. Prior to joining WABCO, Mr. Deason spent four years with Evraz N.A. where he served as Vice President, Financial Planning & Analysis. Prior to Evraz, Mr. Deason spent twelve years with Lear Corporation where he served as Director, Finance, Corporate Business Planning & Analysis, Director, Finance, Asia Pacific Operations, Assistant Treasurer, and held various other positions of increasing responsibility from August 1999. Mr. Deason holds a Masters of International Management from Thunderbird School of Global Management and is a Certified Management Accountant.

Christian Brenneke was appointed as our Chief Technology Officer in February 2018, having served as our Vice President, Engineering, to lead WABCO's technology innovation and new product developments since October 2015. Prior to holding this position, Dr. Brenneke was leading the Advanced Braking Systems business unit from September 2013, and took on the role of Vice President, Vehicle Dynamics and Controls, from April 2014. Prior to this, Dr. Brenneke held various management roles, including Global Project Management Leader and Team Leader for Software Development, since joining WABCO in 2008. Prior to joining WABCO, Dr. Brenneke spent several years in research, development and program management for driver assistance systems and autonomous driving at Volkswagen Group in Germany. Dr. Brenneke holds a graduate degree in electrical engineering specializing in mechatronics and a doctorate degree in engineering both from Leibniz University in Hanover, Germany. In addition, he earned an M.B.A. degree in general management from the University for Applied Sciences in Hamburg, Germany.

Table of Contents

PART II

ITEM 5. MARKET FOR THE REGISTRANT'S COMMON EQUITY, RELATED STOCKHOLDER MATTERS AND ISSUER PURCHASES OF EQUITY SECURITIES

Our common stock is listed on NYSE under the symbol "WBC". Our Certificate of Incorporation, as amended, authorizes the Company to issue up to 400,000,000 shares of common stock, par value \$.01 per share, and 4,000,000 shares of preferred stock, par value \$.01 per share.

We estimate that there are approximately 315 holders of record of the Company's common stock. A significant number of the outstanding shares of common stock which are beneficially owned by individuals or entities are registered in the name of a nominee of The Depository Trust Company, a securities depository for banks and brokerage firms. As of February 4, 2019, there were 61,318 beneficial owners of our common stock.

ISSUER PURCHASES OF EQUITY SECURITIES

Our Board of Directors has approved open market stock repurchase programs consisting of the following stock repurchase program authorizations as also discussed in Note 7 of Notes to Consolidated Financial Statements.

On December 2, 2016, the Board of Directors authorized the repurchase of shares of up to \$600.0 million of common stock. From January 1, 2017 to December 31, 2018, the Company purchased 3,511,454 shares for \$420.0 million. This authorization for stock repurchases expired on December 31, 2018.

All share repurchases were effected in accordance with the safe harbor provisions of Rule 10b-18 of the Exchange Act, and certain repurchases were made pursuant to plans intending to comply with Rule 10b5-1 of the Exchange Act. The timing and amount of share repurchases depended on a variety of factors including, among other things, share price, market conditions and applicable legal and regulatory requirements.

A summary of the repurchase activity for the year ended December 31, 2018 follows.

Table of Contents

Period	Total Number of Shares Purchased	Average price Paid per Share	Total Number of Shares Purchased as Part of Publicly Announced Plans or Programs (a)	Maximum Dollar Value of Shares that May Yet Be Purchased Under the Plans or Programs (a)
Total through December 31, 2017	1,033,000	\$116.13	1,033,000	\$480,041,067
January 1 - January 31	—	-	—	
February 1 - February 28	—	-	—	
March 1 - March 31	221,000	\$138.74	221,000	
Total first quarter	221,000	\$138.74	221,000	\$449,378,909
April 1 - April 30	48,000	\$130.30	48,000	
May 1 - May 31	354,000	\$128.58	354,000	
June 1 - June 30	306,000	\$122.26	306,000	
Total second quarter	708,000	\$125.96	708,000	\$360,196,131
July 1 - July 31	72,000	\$123.26	72,000	
August 1 - August 31	398,400	\$122.85	398,400	
September 1 - September 30	270,090	\$119.76	270,090	
Total third quarter	740,490	\$121.76	740,490	\$270,034,351
October 1 - October 31	324,700	\$109.61	324,700	
November 1 - November 30	282,060	\$115.42	282,060	
December 1 - December 31	202,204	\$108.07	202,204	
Total fourth quarter	808,964	\$111.25	808,964	\$0
Total through December 31, 2018	3,511,454	\$119.6	3,511,454	\$0

(a) Relates to the approved share repurchase programs as discussed above.

On December 7, 2018, the Board of Directors authorized the repurchase of up to an additional \$600 million of common stock from January 1, 2019 through December 31, 2020.

Table of Contents

PERFORMANCE GRAPH

The following graph and table compare the cumulative total shareholder's return on our common stock from December 31, 2013 through December 31, 2018, with the Standard & Poor's 500 Index and the Standard & Poor's Auto Parts & Equipment Index. The graph and table use data supplied by S&P Capital IQ.

The comparisons reflected in the graph and table are not intended to forecast the future performance of the common stock and may not be indicative of such future performance.

Total Shareholder Returns

	12/31/2013	12/31/2014	12/31/2015	12/31/2016	12/31/2017	12/31/2018
WABCO Holdings Inc.	100	112.17	109.47	113.64	153.62	114.91
S&P 500 Index	100	113.69	115.26	129.05	157.22	150.33
S&P 500 Auto Parts & Equipment Index	100	103.68	97.82	95.66	141.11	101.70

Table of Contents

ITEM 6. SELECTED FINANCIAL DATA

(Amounts in millions, except share and per share data)	Year Ended December 31,				
	2018	2017	2016	2015	2014
Income Statement Data:					
Sales	\$3,831.0	\$3,304.2	\$2,810.0	\$2,627.5	\$2,851.0
Cost of sales	2,658.5	2,290.4	1,931.0	1,837.6	1,972.6
Gross profit	1,172.5	1,013.8	879.0	789.9	878.4
Costs and expenses:					
Selling and administrative expenses	476.0	411.2	356.6	346.6	372.6
Research, development and engineering expenses	184.4	147.0	135.2	139.5	145.0
Other operating (income)/expense, net	(0.4)	20.6	5.3	6.7	8.9
Operating income	512.5	435.0	381.9	297.1	351.9
Equity income of unconsolidated joint ventures	1.0	23.1	24.8	32.1	23.8
Gain on remeasurement of equity investments ⁽¹⁾	—	247.7	—	—	—
Other non-operating expense, net	(42.3)	(37.2)	(24.9)	(24.6)	(19.1)
Interest (expense)/income, net	(7.5)	(16.0)	(12.7)	(7.1)	0.2
Income before income taxes	463.7	652.6	369.1	297.5	356.8
Income tax expense ⁽²⁾	49.3	229.7	121.8	11.5	55.6
Net income including noncontrolling interests	414.4	422.9	247.3	286.0	301.2
Less: net income attributable to noncontrolling interests	20.3	16.8	24.3	10.8	9.7
Net income	\$394.1	\$406.1	\$223.0	\$275.2	\$291.5
Per share:					
Basic	\$7.46	\$7.53	\$4.00	\$4.76	\$4.87
Diluted	\$7.43	\$7.50	\$3.98	\$4.72	\$4.81
Average number of outstanding common shares:					
Basic	52,846,962	53,903,938	55,695,738	57,768,018	59,907,763
Diluted	53,062,573	54,139,815	55,981,816	58,274,987	60,546,454
Balance Sheet Data (at end of period):					
Total assets	\$3,738.6	\$4,323.4	\$2,589.9	\$2,432.7	\$2,392.8
Total debt	\$845.2	\$1,409.8	\$503.7	\$315.2	\$87.1
Total shareholders' equity	\$1,176.8	\$1,121.4	\$786.7	\$841.6	\$1,152.8
Cash dividends per common share	\$—	\$—	\$—	\$—	\$—

⁽¹⁾ Gain on remeasurement of equity method investments includes gains resulting from the step up of equity method investments to their acquisition date fair values. See Note 22 of Notes to the Consolidated Financial Statements for additional information.

⁽²⁾ Income tax expense for the year ended December 31, 2017 included incremental income tax expense mainly resulting from the Tax Cuts and Jobs Act. See Note 17 to the Consolidated Financial Statements for additional information.

For a comparative analysis of certain line items in the Income Statement Data section of this table, see Item 7. "Management's Discussion and Analysis of Financial Condition and Results of Operations" which follows.

Table of Contents

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

This discussion summarizes the significant factors affecting the results of operations and financial condition of WABCO during the years ended December 31, 2018, 2017 and 2016 and should be read in conjunction with our consolidated financial statements and related notes thereto included elsewhere herein. Certain information in this discussion and analysis regarding industry outlook, our expectations regarding the future performance of our business and other non-historical statements are forward-looking statements. These forward-looking statements are subject to numerous risks and uncertainties, including, but not limited to, the risks and uncertainties described in "Risk Factors" above. Our actual results may differ materially from those contained in any forward-looking statements. You should read the following discussion together with the sections entitled "Risk Factors", "Information Concerning Forward-Looking Statements", "Selected Financial Information", "Liquidity and Capital Resources" and consolidated financial statements and related notes thereto included elsewhere herein.

Executive Overview

In 2018, the Company once again delivered strong top-line growth of 15.9% (13.9% excluding foreign currency translation effects) compared to 2017, of which 6.7% was related to acquisitions. This growth was achieved in an environment where the global production of trucks and buses greater than six tons increased only 2.5% compared to 2017. Our global aftermarket sales increased by 19.0% (17.5% excluding foreign currency translation effects), of which 11.7% was related to acquisitions.

WABCO continued to translate this strong sales growth into operating income which increased from \$435.0 million in 2017 to \$512.5 million in 2018. In spite of significant industry supply chain challenges in the first three quarters, WABCO's Operating System continued to provide fast and flexible responses to major market changes, delivering \$74.9 million of materials and conversion productivity. Gross material productivity in 2018 represented 5.0% of material savings before the impact of commodity inflation, which had a negative impact of 1.5%, bringing net material productivity to 3.5%. Conversion productivity in our factories in 2018 represented 7.7%.

In 2018, among other accomplishments, we integrated two major acquisitions, formed new alliances and announced new technologies. We also continued to expand and enrich our portfolio of differentiated capabilities that improve the safety, efficiency, and connectivity of commercial vehicles.

As part of its change in organizational logic, WABCO decided to relocate its corporate headquarters to Bern, Switzerland, with the objective of creating a singular focus on fully globalizing WABCO's advanced technology strategy. The current Brussels base will become the headquarters of its newly formed division covering Europe, Middle East and Africa.

Decoupling WABCO's corporate headquarters from its four business regions will allow the Company to create a better structure to focus on the next wave of advanced technologies and scale their adoption globally. Switzerland is world-renowned for providing a highly favorable environment for breakthrough innovations and offers many distinct advantages for corporate headquarters.

Our Markets and Our Customers

Our sales are affected by changes in truck and bus (T&B) production. Europe is our largest geographic market and sales to T&B OEMs represent our largest customer group. The table below shows the relationship between our sales to European T&B OEMs, which account for approximately 40% of our global sales to T&B OEMs, and European

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T&B production for the last five years. Sales data is shown at a constant Euro to U.S. Dollar exchange rate for year to year comparability and to make comparisons to unit production meaningful. Over the past five years, our sales have outperformed the rate of European T&B production by an average of 2% per year.

Year to Year Change	2014	2015	2016	2017	2018
Sales to European T&B OEMs (at constant FX rates)	(7)%	8 %	8 %	6 %	3 %
European T&B Production	(9)%	6 %	1 %	8 %	2 %

In general, our sales track directionally with T&B builds. However, individual year to year sales changes are also influenced by other factors such as timing of orders and deliveries to T&B OEM customers, application content, new product introduction,

Table of Contents

price and introduction of new customer platforms. The level of truck build activity is influenced by general economic conditions, including interest rate levels and inflation.

Our aftermarket sales account for approximately 25% of total sales and are affected by a variety of factors: content on specific vehicles and breadth of our product range, number of commercial trucks in active operation, truck age, type of vehicles built, miles driven, demand for transported goods, overall economic activity and acquisitions. On average, our aftermarket sales (based on a constant exchange rate to the U.S. Dollar rate) have grown by 11% annually for the last five years as shown in the table below.

Year to Year Change	2014	2015	2016	2017	2018	Average Change
Aftermarket Sales (at constant FX rates)	13 %	7 %	6 %	9 %	18 %	11 %

Distribution of WABCO's Sales by Major End-Markets, Product Types and Geography

	2018	2017	2016
OE Manufacturers:			
Truck & Bus products	55 %	57 %	55 %
Trailer products	10 %	9 %	10 %
Car products	5 %	6 %	6 %
Off highway	5 %	4 %	4 %
Aftermarket	25 %	24 %	25 %
	100 %	100 %	100 %
Geography:			
Europe	49 %	52 %	54 %
North America	23 %	18 %	14 %
South America	3 %	3 %	3 %
Asia	23 %	26 %	24 %
Other	2 %	1 %	5 %
	100 %	100 %	100 %

Our largest customers are Daimler and Volvo and account for approximately 14% and 11% of our sales, respectively. Other key customers include Ashok Leyland, TRATON, China National Heavy Truck Corporation (CNHTC), Cummins, Fiat (Iveco), Hino, Paccar and TATA Motors. For the fiscal years ended December 31, 2018, 2017 and 2016, our top 10 customers accounted for approximately 49%, 44% and 44% of our sales, respectively.

Results of Operations

Approximately 78% of our sales are outside the United States and therefore, changes in exchange rates can have a significant impact on the reported results of our operations, which are presented in U.S. Dollars. Year-over-year changes in sales and expenses for 2018 compared with 2017 and 2017 compared with 2016 are presented both with and without the effects of foreign currency translation. Changes in sales and expenses excluding foreign exchange effects are calculated using current year sales and expenses translated at prior year exchange rates. Presenting changes in sales and expenses excluding the effects of foreign currency translation is not in conformity with U.S. Generally Accepted Accounting Principles (U.S. GAAP), but we analyze this data because it is useful to us in understanding the operating performance of our business. We believe this data is also useful to shareholders for the same reason. The changes in sales and expenses excluding the effects of foreign exchange translation are not meant to be a substitute for measurements prepared in conformity with U.S. GAAP, nor to be considered in isolation. Management believes that

presenting these non-U.S. GAAP financial measures is useful to shareholders because it enhances their understanding of how management assesses the operating performance of the Company's business.

Table of Contents

Results of Operations for 2018 Compared with 2017

The following table is a summary of sales, cost of sales, gross profit, operating expenses and other selected results of operations for the periods indicated.

(Amounts in millions)	Year ended December 31,		% change reported	Excluding Foreign Exchange Translation **		% change adjusted
	2018	2017		2018 adjusted amount	2017 adjusted amount	
Sales	\$3,831.0	\$3,304.2	15.9 %	\$3,763.7	13.9 %	
Cost of sales	2,658.5	2,290.4	16.1 %	2,622.7	14.5 %	
Gross profit	1,172.5	1,013.8	15.7 %	1,141.0	12.5 %	
Operating expenses	660.0	578.8	14.0 %	644.5	11.4 %	
Equity in net income of unconsolidated joint ventures	1.0	23.1	(95.7) %	1.0	(95.7) %	
Gain on remeasurement of equity investments	—	247.7	*	—	*	
Other non-operating expense, net	(42.3)	(37.2)	13.7 %	(37.5)	0.8 %	
Interest expense, net	(7.5)	(16.0)	(53.1) %	(7.4)	(53.8) %	
Income tax expense	49.3	229.7	(78.5) %	48.9	(78.7) %	
Net income attributable to noncontrolling interests	20.3	16.8	20.8 %	20.8	23.8 %	

* Percentage change not considered meaningful

** Amounts translated using 2017 average exchange rates for comparability

Sales

Our sales for 2018 were \$3,831.0 million, an increase of 15.9% (13.9% excluding foreign currency translation effects) from \$3,304.2 million in 2017.

Total sales in Europe, our largest market, increased 9.1% (4.7% excluding foreign currency translation effects) for the full year 2018, which was supported by strong truck and bus production of 2.4% and by a penetration increase of AMT. This was partially offset by the phase-out of a prior generation AMT at a major gearbox supplier.

Sales in North America increased 55.5% (54.6% excluding foreign currency translation effects). Our acquisition of R.H. Sheppard and the full consolidation of our former joint venture also contributed 38.5% to this growth as well as strong truck and bus production growth of 18.1%. Total sales in South America increased 16.5% (30.6% excluding foreign currency translation effects), driven primarily by truck and bus production growth of 27.1% combined with increased content per truck, partially offset by a lower growth in other customer groups.

Total sales in Asia increased 5.0% (4.8% excluding foreign currency translation effects) while the vehicle production decreased by 2.1%. Total sales in China decreased by 7.4% (9.7% excluding foreign currency translation effects) which was primarily driven by a 8.0% decrease in truck and bus production with a stronger negative impact on sales from the lower share of tractor trucks in the 2018 truck production as well as supply chain constraints. Total sales in India increased 29.1% (34.8% excluding foreign currency translation effects) due to the 23.5% increase in the production of new trucks and buses, ramping up volumes of steering sales at a major customer as well as continued sales growth from market share gains in automatic slack adjusters, air processing products and others. Total sales in Korea decreased 7.2% (9.6% excluding foreign currency translation effects), driven by a decrease in truck and bus production of 21.5%. Japan increased 2.6% (1.0% excluding foreign currency translation effects) despite a decrease in

the truck and bus production of 3.8%, outperforming the market by the ramp up of recent product launches.

WABCO's global aftermarket sales, included in the geographic numbers provided above, increased 19.0% (17.5% excluding foreign currency translation effects). This increase, excluding foreign currency translation effects, was supported by acquisitions which contributed 11.7% as well as continued success of the Company's aftermarket strategies.

Cost of Sales and Gross Profit

Within cost of sales, our largest expense is material costs, which mainly represents the purchase of components and parts. Our continued focus on productivity generated 5.0% of material savings including a \$9.1 million supplier-related productivity

Table of Contents

settlement and before the impact of commodity inflation, which had a negative impact of 1.5%, bringing net material productivity to 3.5% for the year.

(Amounts in millions)	Cost of Sales	Gross Profit
Cost of sales / gross profit for the year ended December 31, 2017	\$2,290.4	\$1,013.8
Increase/(decrease) due to:		
Sales price reductions	—	(41.8)
Sales price reductions as % of sales		(1.2)%
Volume, mix and absorption	227.4	51.6
Material productivity ⁽¹⁾	(36.4)	36.4
Conversion productivity	(38.5)	38.5
U.S. acquisitions	145.1	77.1
Labor inflation	17.2	(17.2)
Foreign exchange effects ⁽²⁾	43.5	23.9
Other ⁽³⁾	9.8	(9.8)
Net increase	368.1	158.7
Cost of sales / gross profit for the year ended December 31, 2018	\$2,658.5	\$1,172.5

⁽¹⁾ Includes a supplier-related productivity settlement of \$9.1 million.

⁽²⁾ Foreign exchange effects include both translational and transactional effects.

⁽³⁾ Includes inefficiencies due to supply chain constraints.

Operating Expenses

Operating expenses include selling and administrative expenses, product engineering expenses and other operating expenses.

(Amounts in millions)

Operating expenses for the year ended December 31, 2017 \$578.8

Increase/(decrease) due to:	
Labor inflation	15.6
Incentive compensation	(5.3)
Incremental costs from U.S. acquisitions ⁽¹⁾	37.8
Streamlining	7.0
Pension and post retirement benefit costs	3.3
Foreign exchange translation	15.5
Indemnification costs ⁽²⁾	(14.9)
Research and development investments, net	15.9
Other	6.3
Net increase	81.2

Operating expenses for the year ended December 31, 2018 \$660.0

⁽¹⁾ Includes costs incurred related to the R.H. Sheppard acquisition and the acquisition of Meritor's interest in Meritor WABCO for business and product integration, including engineering costs to develop and integrate active steering

with WABCO products.

⁽²⁾ The indemnification costs relate primarily to accruals recorded in 2017 in Brazil under an indemnification agreement with Trane (formerly American Standard). See Note 16 of Notes to the Consolidated Financial Statements for further discussion.

38

Table of Contents

Equity in Net Income of Unconsolidated Joint Ventures

Equity in net income of unconsolidated joint ventures decreased \$22.1 million to \$1.0 million in 2018 as compared to \$23.1 million in 2017. This decrease was primarily driven by the acquisition and consolidation of previously unconsolidated joint ventures during the fourth quarter of 2017.

Gain on remeasurement of equity investments

The gain on remeasurement of equity method investments recorded in 2017 included gains resulting from the step up of equity method investments to their acquisition date fair values. See Note 22 of Notes to the Consolidated Financial Statements for additional information.

Other non-operating expense, net

The non-operating expense net increased by \$5.1 million to \$42.3 million in 2018 as compared to \$37.2 million in 2017, primarily driven by the recognition of an impairment loss of \$5.5 million on a non-marketable equity investment. See Note 9 of Notes to the Consolidated Financial Statements.

Interest Expense, net

The Company recorded net interest expense of \$7.5 million in 2018 compared to \$16.0 million in 2017. This decrease was primarily due to our prepayment of the Senior USD Notes in April 2018. See Note 15 of Notes to the Consolidated Financial Statements for further discussion.

Income Taxes

The income tax provision for 2018 was \$49.3 million on \$463.7 million of pre-tax income before adjusting for noncontrolling interest, compared with an income tax provision of \$229.7 million on pre-tax income of \$652.6 million before adjusting for noncontrolling interest in 2017. The 2018 decrease in income tax expense is primarily the result of the \$33.3 million net benefit for changes to the uncertain tax position related to the Excess Profit Ruling (EPR) / Patent Income Deduction (PID) clawback and the \$10.6 million benefit for change in valuation allowances, partially offset by higher pre-tax income, excluding a one-time item related to the 2017 remeasurement gain on equity investments of \$247.7 million. The 2017 income tax provision included the one-time provisional estimate of U.S. transition tax of \$100.0 million, a net \$18.6 million benefit for remeasurement of deferred tax assets and liabilities resulting from U.S. and Belgian tax reforms and a \$91.4 million deferred income tax expense related to the remeasurement gain on the Meritor WABCO equity investment.

Additional internal reorganization projects the Company is implementing or pursuing may also carry ancillary tax benefits that would improve the Company's effective tax rate in 2019, including the Company's decision to reorganize its treasury function and relocate it to the Company's new Swiss corporate headquarters, as well as the Company's plans to better manage its group unfunded pension liabilities (see Note 14 of Notes to the Consolidated Financial Statements) through the establishment of a regulated insurance company. Management is also currently evaluating the possible impact on its future effective tax rate of the judgment by the General Court of the European Union on February 14, 2019 relating to the Belgium EPR program. See Note 23 of Notes to the Consolidated Financial Statements.

Net Income Attributable to Noncontrolling Interests

Net income attributable to noncontrolling interests increased \$3.5 million to \$20.3 million in 2018 as compared to \$16.8 million in 2017 primarily due better results in some consolidated affiliate companies.

Backlog

Backlog represents sales orders that have not yet been filled as of the end of the reporting period. This amounted to \$1.4 billion at the end of 2018, an increase of 20.9% (23.0% excluding foreign currency translation effects) from the end of 2017 following the growth in our business. Backlog is not necessarily predictive of future business as it relates only to some of our products, and customers may still change orders and future delivery dates.

Table of Contents

Results of Operations for 2017 Compared with 2016

The following table is a summary of sales, cost of sales, gross profit, operating expenses and other selected results of operations for the periods indicated.

(Amounts in millions)	Year ended December 31,		% change reported		Excluding Foreign Exchange Translation **		% change adjusted
	2017	2016			2017 adjusted amount		
Sales	\$3,304.2	\$2,810.0	17.6	%	\$3,260.4	16.0	%
Cost of sales	2,290.4	1,931.0	18.6	%	2,260.1	17.0	%
Gross profit	1,013.8	879.0	15.3	%	1,000.3	13.8	%
Operating expenses	578.8	497.1	16.4	%	570.5	14.8	%
Equity in net income of unconsolidated joint ventures	23.1	24.8	(6.9))%	23.1	(6.9))%
Gain on remeasurement of equity investments	247.7	—	*		247.2	*	
Interest expense, net	(16.0)	(12.7)	26.0	%	(16.2)	27.6	%
Income tax expense	229.7	121.8	88.6	%	223.4	83.4	%
Net income attributable to noncontrolling interests	16.8	24.3	(30.9))%	16.5	(32.1))%

* Percentage change not considered meaningful

** Amounts translated using 2016 average exchange rates for comparability

Sales

Our sales for 2017 were \$3,304.2 million, an increase of 17.6% (16.0% excluding foreign currency translation effects) from \$2,810.0 million in 2016. The increase, excluding foreign currency translation effects, was mainly driven by increased WABCO content per vehicle as well as market growth of 6.6%. Contribution from market growth was mainly driven by Europe and North America (with high content per vehicle) as well as China (with limited content per vehicle).

Total sales in Europe, our largest market, increased 9.3% (7.2% excluding foreign currency translation effects) for the full year 2017, which was supported by strong truck and bus production of 7.7% as well as by market share gains at a major OEM customer, partially offset by a phase out of AMT at a major gearbox supplier.

Sales in North America increased 40.7% (39.7% excluding foreign currency translation effects), primarily driven by the increased content per vehicle due to higher penetration of AMT, growth coming from the acquisitions (17%) as well as market growth of 9.1%. Total sales in South America increased 26.2% (17.4% excluding foreign currency translation effects) driven primarily by growth in truck and bus production.

Total sales in Asia increased 25.6% (25.5% excluding foreign currency translation effects) compared to an estimated 37% increased growth of the vehicles in the region. Further increase in production of new truck and buses in China strongly contributed to the sales growth of 42.0% (43.4% excluding foreign currency translation effects), which was additionally strengthened by increased WABCO content per vehicle as well as further benefits from the ABS mandate on light- and medium- duty trucks. India increased 14.0% (11.0% excluding foreign currency translation effects), despite a minor 0.9% increase in vehicle production driven by the enforcement of load restrictions as well as increase demand from construction and mining in the second half of 2017. Japan increased 7.1% (10.5% excluding foreign currency translation effects) with increased content per vehicle and South Korea increased 9.4% (7.7% excluding

foreign currency translation effects) driven by higher vehicle production compared to 2016 which was negatively impacted by export slowdown.

WABCO's global aftermarket sales, included in the geographic numbers provided above, increased 11.8% (9.4% excluding foreign currency translation effects). This increase, excluding foreign currency translation effects, demonstrates the continued success of the Company's aftermarket strategies.

Table of Contents

Cost of Sales and Gross Profit

Within cost of sales, our largest expense is material costs, which mainly represents the purchase of components and parts. Our continued focus on productivity generated 5.3% of material savings before the impact of commodity inflation, which had a negative impact of 1.0%, bringing net material productivity to 4.3% for the year.

(Amounts in millions)	Cost of Sales	Gross Profit
Cost of sales / gross profit for the year ended December 31, 2016	\$1,931.0	\$879.0
Increase/(decrease) due to:		
Sales price reductions	—	(51.6)
Sales price reductions as % of sales		(1.6)%
Volume, mix and absorption	391.6	110.4
Material productivity	(46.9)	46.9
Conversion productivity	(36.3)	36.3
U.S. acquisitions	(24.8)	24.8
Labor inflation	14.5	(14.5)
Foreign exchange effects	45.7	(1.9)
Other	15.6	(15.6)
Net increase	359.4	134.8

Cost of sales / gross profit for the year ended December 31, 2017 \$2,290.4 \$1,013.8

Foreign exchange impacts include both translational and transactional effects. Cost variances included in "Other" above consisted mainly of inflation on energy, travel and freight (\$3.5 million) and liquidation of a step-up in inventory related to the Meritor WABCO acquisition (\$7.5 million).

Operating Expenses

Operating expenses include selling and administrative expenses, product engineering expenses and other operating expenses.

(Amounts in millions)

Operating expenses for the year ended December 31, 2016 \$497.1

Increase/(decrease) due to:	
Labor inflation	13.6
Incentive compensation	10.3
Incremental costs from U.S. acquisitions	13.4
Indemnification charges	15.5
Pension and post retirement benefit costs	3.9
Foreign exchange translation	8.3
Extraordinary sell-side M&A activity	4.5
Research and development investments, net	3.2
Other	9.0
Net increase	81.7

Operating expenses for the year ended December 31, 2017 \$578.8

The indemnification costs of \$15.5 million relate primarily to accruals recorded in Brazil under an indemnification agreement with Trane (formerly American Standard). See Note 16 of Notes to the Consolidated Financial Statements for further discussion.

Table of Contents

As previously disclosed in our 2017 second quarter Form 10-Q, the \$4.5 million costs of extraordinary sell-side M&A activity pertain to professional fees incurred in connection with an acquisition proposal received by the Company.

Equity in Net Income of Unconsolidated Joint Ventures

Equity in net income of unconsolidated joint ventures decreased \$1.7 million to \$23.1 million in 2017 as compared to \$24.8 million in 2016. This decrease was primarily driven by the acquisition and consolidation of previously unconsolidated joint ventures during the fourth quarter of 2017, which was partially offset by higher income from our North American joint venture due to increased content per vehicle of WABCO products during the first three quarters of 2017.

Interest Expense, net

The Company recorded net interest expense of \$16.0 million in 2017 compared to \$12.7 million in 2016. This increase was primarily due to a full year of interest expense incurred on our 2016 issuance of the Senior EUR Notes as well as incremental interest expense incurred on borrowings under revolving credit facilities which were used to fund our share repurchase program as well as our acquisitions. See Note 15 of Notes to the Consolidated Financial Statements for further discussion.

Income Taxes

The income tax provision for 2017 was \$229.7 million on \$652.6 million of pre-tax income before adjusting for noncontrolling interest, compared with an income tax provision of \$121.8 million on pre-tax income of \$369.1 million before adjusting for noncontrolling interest in 2016. The 2017 increase in income tax expense is primarily the result of higher pre-tax income and the tax expense related to tax law changes in the U.S. and Belgium. The 2017 income tax provision includes the one-time provisional estimate of U.S. transition tax of \$100.0 million, a net \$18.6 million benefit for remeasurement of deferred tax assets and liabilities resulting from U.S. and Belgian tax reforms and a \$91.4 million deferred income tax expense related to the remeasurement gain on the Meritor WABCO equity investment. The 2016 income tax provision included a \$69.3 million charge for the claw-back of Belgian EPR tax relief for 2012-2014.

Net Income Attributable to Noncontrolling Interests

Net income attributable to noncontrolling interests decreased \$7.5 million to \$16.8 million in 2017 as compared to \$24.3 million in 2016 primarily due to a \$12.3 million out-of-period, non-cash adjustment recorded for a correction in our noncontrolling interest attributable to one of our consolidated affiliates in 2016 as previously disclosed in our 2016 Form 10-K.

Backlog

Backlog represents sales orders that have not yet been filled as of the end of the reporting period. This amounted to \$1.5 billion at the end of 2017, an increase of 22.8% (increase of 9.6% excluding foreign currency translation effects) from the end of 2016 following the growth in our business. Backlog is not necessarily predictive of future business as it relates only to some of our products, and customers may still change orders and future delivery dates.

Liquidity and Capital Resources

We employ several means to manage our liquidity, and we are not dependent upon any one source of funding. Our sources of financing include cash flows from operations, cash and cash equivalents, our senior unsecured notes and revolving credit facilities.

We believe the combination of expected cash flows, the funding received from our senior unsecured notes and the revolving credit facilities being committed until 2023 will provide us with adequate liquidity to support the Company's operations. The Company also has the ability to access a wide range of additional external financing instruments.

Specifically for 2019, we expect our capital spending to remain consistent with prior year. As of December 31, 2018, there were no outstanding borrowings on the revolving credit facility.

Outside of our capital expenditures, cash flows related to our senior unsecured notes, subsequent installments of the transition tax payable, acquisitions and short term debt repayments, our overall cash flow is expected to be in line with the Company's 2018 cash flow profile. The U.S. Tax reform will provide a higher flexibility regarding the use of our foreign cash in the United States which may reduce the overall financing needs of the Company.

Table of Contents

As of December 31, 2018, \$491.0 million of the \$503.8 million of cash and cash equivalents on the consolidated balance sheets was held by foreign subsidiaries. The Company considers the earnings of substantially all of its subsidiaries outside of Europe and Brazil to be permanently reinvested outside the United States. As of December 31, 2017, \$776.5 million of the \$1,141.5 million of cash and cash equivalents on the consolidated balance sheets was held by foreign subsidiaries for which earnings are no longer permanently reinvested outside the United States.

Cash Flows for 2018 Compared with 2017

Operating activities - Net cash provided by operating activities was \$468.5 million and \$421.5 million for the years ended December 31, 2018 and 2017, respectively. Cash flow from operating activities consisted primarily of net income including noncontrolling interests of \$414.4 million, increased by non-cash elements of \$208.5 million comprising depreciation, pension and post-retirement benefit expenses, amortization, stock compensation, and deferred tax benefits. This was partially offset by \$154.4 million related to changes in operating assets and liabilities, including \$32.3 million of payments made related to U.S. transition taxes. Cash flow from operating activities for 2017 consisted primarily of net income including noncontrolling interests of \$422.9 million, decreased by non-cash elements of \$98.9 million comprising depreciation, amortization, stock compensation, deferred tax benefits, pension and post-retirement benefit expenses, as well as a \$247.7 million for a non-cash gain recognized on the remeasurement of our equity investments. This was offset by an accrual of \$196.4 million for U.S. transition taxes payable, as well as \$106.0 million related to changes in operating assets and liabilities as well as pension contributions.

Investing activities - Net cash used in investing activities amounted to \$246.5 million for the year 2018 compared to \$488.2 million in 2017. Aside from net capital expenditures in tooling, equipment and software of \$132.1 million and \$110.5 million in 2018 and 2017, respectively, we had investing cash flows related to our investments and redemptions in repurchase agreements and short-term investments as follow:

(Amounts in millions)	December 31, 2018			December 31, 2017		
	Repurchase Agreements	Short-term Investments	Total	Repurchase Agreements	Short-term Investments	Total
Investments	\$ 161.2	\$ 526.0	\$ 687.2	\$ 312.2	\$ 223.0	\$ 535.2
Sales and redemptions	210.3	374.9	585.2	318.4	230.0	548.4
Net cash received/(invested)	\$ 49.1	\$ (151.1)	\$ (102.0)	\$ 6.2	\$ 7.0	\$ 13.2

We also paid \$6.4 million in 2018 as additional cash payment related to the 2017 acquisition of R.H. Sheppard, as well as \$2.2 million to acquire Asset Trackr, as discussed in Note 22 of Notes to Consolidated Financial Statements, and we invested \$3.8 million in unconsolidated joint ventures. This is in comparison to 2017 when we paid \$382.7 million net of cash acquired for the acquisition of Sheppard, Meritor WABCO and WABCO Automotive South Africa.

Financing activities - Net cash used by financing activities amounted to \$827.1 million for 2018 compared to net cash provided of \$260.6 million for 2017. The main driver of this lower net cash flow from financing activities is the \$500.0 million prepayment of the Senior USD Notes and net repayments under the revolving credit facilities of \$385.4 million, partially offset by proceeds received from the Schuldschein Loans of approximately \$368.5 million. We also repurchased shares for a total of \$300.0 million in 2018 compared to \$120.0 million in 2017. Certain of these shares were repurchased under a 10b5-1 stock repurchase plan during the period between August 20, 2018 and December 20, 2018.

We received \$0.6 million of stock option proceeds and withheld \$5.1 million of shares related to employee tax payments made for equity award vestings in 2018 compared to \$9.5 million and \$4.9 million in 2017, respectively. Dividends paid to noncontrolling interests amounted to \$5.7 million and \$7.1 million in 2018 and 2017, respectively.

Cash Flows for 2017 Compared with 2016

Operating activities - Net cash provided by operating activities was \$421.5 million and \$405.4 million for the years ended December 31, 2017 and 2016, respectively. Cash flow from operating activities consisted primarily of net income including noncontrolling interests of \$422.9 million, decreased by non-cash elements of \$98.9 million comprising depreciation, amortization, stock compensation, deferred tax benefits, pension and post-retirement benefit expenses, as well as a \$247.7 million for a non-cash gain recognized on the remeasurement of our equity investments. This was offset by an accrual of \$196.4 million for U.S. transition taxes payable, as well as \$106.0 million related to changes in operating assets and liabilities as well as pension contributions. Cash flow from operating activities for 2016 consisted primarily of net income including noncontrolling interests

Table of Contents

of \$247.3 million, increased by \$241.6 million for non-cash charges including depreciation, amortization, stock compensation, pension and post-retirement benefit expenses as well as a non-cash tax expense of \$86.4 million related to the Belgian EPR program that was recorded in the first quarter of 2016. These increases were partially offset by \$83.5 million related to changes in operating assets and liabilities as well as pension contributions.

Investing activities - Net cash used in investing activities amounted to \$488.2 million for the year 2017 compared to \$251.8 million in 2016. Aside from capital expenditures in tooling, equipment and software of \$110.5 million and \$107.0 million in 2017 and 2016, respectively, we had investing cash flows related to our investments and redemptions in repurchase agreements and short-term investments as follow:

(Amounts in millions)	December 31, 2017			December 31, 2016		
	Repurchase Agreements	Short-term Investments	Total	Repurchase Agreements	Short-term Investments	Total
Investments	\$312.2	\$223.0	\$535.2	\$324.6	\$—	\$324.6
Sales and redemptions	318.4	230.0	548.4	228.8	44.2	273.0
Net cash received/(invested)	\$6.2	\$7.0	\$13.2	\$(95.8)	\$44.2	\$(51.6)

In 2017 we paid \$382.7 million net of cash acquired for the acquisition of Sheppard, Meritor WABCO and WABCO Automotive South Africa as discussed in Note 22 of Notes to the Consolidated Financial Statements. This is in comparison to 2016 when we paid \$92.3 million for the acquisitions of MICO, LCL and Trans-Safety LOCKS.

Financing activities - Net cash provided by financing activities amounted to \$260.6 million for 2017 compared to \$220.6 million for 2016. The main driver of this higher net cash flow from financing activities is related to lower expenditures for share repurchases, where we repurchased shares for a total of \$120.0 million in 2017 compared to \$250.0 million in 2016. This was partially offset by lower net borrowings as our total third-party debt increased by \$382.8 million in 2017 compared to an increase of \$464.2 million in 2016. We also paid \$0.3 million in 2017 for the settlement of a forward contract in comparison to cash received of \$15.2 million in 2016 for such settlements.

We also repurchased shares in 2017 and 2016 for a total amount of \$120.0 million and \$250.0 million. As previously disclosed, the Company's share repurchase program was suspended as a result of an acquisition proposal received by the Company in the second quarter of 2017. The Company did not restart its repurchase program as a result of two strategic acquisitions closed in the second half of the year. The Company restarted its share repurchase program in 2018.

We received \$9.5 million of stock option proceeds and withheld \$4.9 million of shares related to employee tax payments made for equity award vestings in 2017 compared to \$3.9 million and \$6.0 million in 2016, respectively. Dividends paid to noncontrolling interests amounted to \$7.1 million and \$6.7 million in 2017 and 2016, respectively. In 2017, we also received \$0.6 million from a noncontrolling interest shareholder related to their share of capital increase in one of our consolidated joint ventures.

Senior Unsecured Notes Schuldschein Loans

On March 22, 2018 the Company, through a European subsidiary, entered into a series of six individual senior unsecured loan agreements with an aggregate principal amount of €300.0 million (collectively, the Schuldschein Loans), as follows:

(Amounts in millions)	Face value	Coupon	Maturity date
Fixed rate term loan - Series A	€0.0	0.85%	March 31, 2021
Fixed rate term loan - Series B	60.0	1.15%	March 31, 2022

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Fixed rate term loan - Series C	80.0	1.43%	March 31, 2023
Floating rate term loan - Series A	50.0	6-month EURIBOR plus 80 bps	March 31, 2021
Floating rate term loan - Series B	60.0	6-month EURIBOR plus 90 bps	March 31, 2022
Floating rate term loan - Series C	40.0	6-month EURIBOR plus 100 bps	March 31, 2023
	€00.0		

Table of Contents

Senior Notes (EUR and USD)

On November 15, 2016, the Company issued €440.0 million in aggregate principal amount of senior unsecured notes, comprised of €190.0 million of 0.84% senior unsecured notes due 2023, €80.0 million of 1.20% senior unsecured notes due 2026 and €170.0 million of 1.36% senior unsecured notes due 2028. The Company paid \$1.4 million of debt issuance costs in connection with these senior unsecured notes. Interest on these notes is payable semi-annually on January 1 and July 1 of each year, and commenced on July 1, 2017.

On June 25, 2015, the Company issued \$500.0 million in aggregate principal amount of senior unsecured notes, comprised of \$150 million of 2.83% senior unsecured notes due 2022, \$200 million of 3.08% senior unsecured notes due 2025 and \$150 million of 3.18% senior unsecured notes due 2027. The Company paid \$2.1 million of debt issuance costs in connection with these senior unsecured notes. Interest on these notes is payable semi-annually on January 1 and July 1 of each year, and commenced on January 1, 2016.

The proceeds from the Senior USD Notes were utilized to repay outstanding balances on the revolving credit facilities, fund the Company's share repurchase program, finance acquisitions and meet general financing requirements.

On April 30, 2018, the Company prepaid the outstanding principal amount of \$500.0 million on the Senior USD Notes, and recognized a loss on debt extinguishment of \$2.3 million net of taxes, of which the pretax amount, \$2.6 million, was recorded in other non-operating expenses in the consolidated statement of operations.

Credit Facilities

Effective June 28, 2018, the Company amended its existing multi-currency unsecured revolving credit facility, increasing the maximum principal amount of borrowings under the facility from \$400 million (the 2015 Facility) to \$600 million (the 2018 Facility), with an option to increase up to additional \$250.0 million. The 2018 Facility also extended the previously scheduled maturity date of September 30, 2022 for the 2015 Facility to June 28, 2023, subject to two one-year extension options. Concurrent with entering into the 2018 Facility, the Company also terminated the \$100 million multi-currency five-year unsecured revolving credit facility (the 2014 Facility) that was due to expire on December 17, 2019.

On the effective date of the 2018 Facility, the Company repaid the outstanding balance of €104 million and €52 million under the 2015 Facility and 2014 Facility, respectively, and commenced borrowing under the 2018 Facility. As of December 31, 2018, there were no outstanding borrowings on the revolving credit facilities.

Derivative Instruments and Hedging Activities

The Company designated borrowings under its revolving credit facilities and Senior EUR Notes to partially hedge the foreign currency exposure of its net investment in certain Euro-denominated wholly-owned subsidiaries. As of December 31, 2018 and 2017, the Company designated Euro-denominated loans of €440.0 million (approximately \$503.6 million at December 31, 2018 exchange rate) and €763.0 million (approximately \$912.0 million at December 31, 2017 exchange rate) as hedges of its net investment in these subsidiaries. For the twelve-month periods ended December 31, 2018 and 2017, the Company recorded a gain of \$16.8 million, net of taxes of \$4.7 million, and a loss of \$43.2 million, net of taxes of \$25.1 million, respectively, in cumulative translation adjustment within accumulated other comprehensive income.

From July 2017, WABCO entered into a number of International Swaps and Derivatives Association (ISDA) Master Agreements with multiple derivative counterparties. An ISDA Master Agreement is a bilateral trading agreement

between two parties that allow both parties to enter into over-the-counter derivative contracts. The ISDA Master Agreement contains a Schedule to the Master Agreement and a Credit Support Annex, which governs the maintenance, reporting, collateral management and default process (netting provisions in the event of a default and/or a termination event). Under an ISDA Master Agreement, the Company may, under certain circumstances, offset with the counterparty certain derivative financial instruments' payables and/or receivables with collateral held and/or posted and create one single net payment. The provisions of the ISDA Master Agreement typically permit a single net payment in the event of default including the bankruptcy or insolvency of the counterparty.

Off-Balance Sheet Arrangements

We did not engage in any off-balance sheet financial arrangements as of December 31, 2018.

Table of Contents

Contractual Obligations

We had \$26.4 million of streamlining liabilities as of December 31, 2018. While we expect approximately \$14.8 million of payments to be made in 2019, we are unable to estimate the timing of all future payments. See Note 6 of Notes to the Consolidated Financial Statements for further discussion.

The following table summarizes our expected cash outflows resulting from our contractual obligations as of December 31, 2018. Some of the figures are based on our estimates and assumptions about these obligations. The obligations we will actually pay in future periods may vary from those reflected in the table.

(Amounts in millions)	Payments due by period				
	Total	2019	2020 and 2021	2022 and 2023	Beyond 2023
Debt obligations ⁽¹⁾	\$901.3	\$8.2	\$ 84.8	\$ 459.9	\$ 348.4
Lease obligations ⁽²⁾	121.1	30.1	43.3	24.5	23.2
Purchase obligations ⁽³⁾	270.0	270.0	—	—	—
Pension and post-retirement contributions ⁽⁴⁾	295.8	26.5	55.5	57.5	156.3
Transition tax payable ⁽⁵⁾	169.9	16.2	32.4	70.7	50.6
Total	\$1,758.1	\$351.0	\$ 216.0	\$ 612.6	\$ 578.5

Includes principal and interest payments due on our senior unsecured notes. For floating rate debt, interest payments were calculated based on the applicable interest rates as of December 31, 2018. Payment obligations denominated in a foreign currency were calculated using the local currency foreign exchange rates in effect at December 31, 2018. See Note 15 to of Notes to the Consolidated Financial Statements for additional information.

⁽²⁾ Includes future rental commitments under all non-cancelable operating leases in effect at December 31, 2018.

⁽³⁾ In the normal course of business we expect to purchase approximately \$2.5 billion in 2019 of materials and services, and estimate that on average no more than approximately \$270.0 million is outstanding at any one time in the form of legally binding commitments. We spent approximately \$2.3 billion, \$2.0 billion and \$1.7 billion on materials and services in 2018, 2017 and 2016, respectively.

⁽⁴⁾ Amounts represent undiscounted projected benefit payments over the next ten years and represent our best estimate of future contributions to our pension and post-retirement benefit plans. The expected benefit payments have been estimated based on the same assumptions that were used to measure our accumulated benefit obligation as of December 31, 2018 and include benefits attributable to estimated future service of current employees.

⁽⁵⁾ Includes a one-time repatriation tax resulting from the Tax Cuts and Jobs Act. The Tax Cuts and Jobs Act permits the Company to pay the tax liability interest free over a period of up to eight years.

Capital Expenditures

We believe our capital spending in recent years has been sufficient to maintain efficient production capacity, to implement important product and process redesigns and to expand capacity to meet increased demand. Productivity projects have freed up capacity in our manufacturing facilities and are expected to continue to do so. We expect to continue investing to expand and modernize our existing facilities and invest in our facilities to create capacity for new product development. Specifically for 2019, we expect our capital spending to remain at levels consistent with prior year as previously discussed.

Pending Adoptions of Recently Issued Accounting Standards

Refer to Note 3 of Notes to the Consolidated Financial Statements for a complete description of recent accounting standards which we have not yet been required to implement and which may be applicable to our operations.

Critical Accounting Policies and Estimates

Our discussion and analysis of our financial condition and results of operations are based upon our consolidated financial statements, which have been prepared in accordance with U.S. GAAP. The preparation of financial statements in conformity with those accounting principles requires us to make judgments and estimates that affect the amounts reported in the consolidated

Table of Contents

financial statements and accompanying notes. Those judgments and estimates have a significant effect on the consolidated financial statements because they result primarily from the need to make estimates about the effects of matters that are inherently uncertain. Actual results could differ from those estimates. We frequently reevaluate our judgments and estimates that are based upon historical experience and on various other assumptions that we believe to be reasonable under the circumstances.

We believe that of our significant accounting policies, the ones that may involve a higher degree of uncertainty, judgment and complexity pertain to revenue recognition, goodwill, recoverability of other long-lived assets, pension and post-retirement benefits, warranties, business combinations, income taxes and contingencies. See Note 2 of Notes to the Consolidated Financial Statements for additional discussion of our accounting policies.

Revenue Recognition - Revenue under ASC 606 Revenue from Contracts with Customers, is recognized when control of a product or service is transferred to a customer. The majority of our sales are derived from OEM customers. Revenue from the sale of serial production parts that is produced to industry standards for OEM customers is recognized at a point-in-time when control of the parts transfers to customers based on the shipping terms as these parts typically have an alternative use or the underlying contracts do not contain an enforceable right to payment prior to shipment depending on jurisdiction. In instances where customization services are performed for the OEM, and if the sales meet the over-time revenue recognition criteria, we will use the cost-to-cost method to recognize revenue. Under this method, progress is measured based in the ratio of actual costs incurred relative to the total estimated costs. Most OEM serial production contracts include a provision for volume discounts, and in certain markets, we provide customers with discounts not stated in the contract. In those instances where there is a valid expectation for the customers to receive a discount, the amount of variable consideration which is included in the transaction price may be constrained, and is included in the net sales price only to the extent that it is probable that a significant reversal in the amount of the cumulative revenue recognized under the contract will not occur in a future period.

The sale of aftermarket parts and spare parts are relatively homogeneous and revenue is recognized at a point-in-time when control transfers to the customer based on shipping terms. Aftermarket contracts include variable consideration related to discounts, bonuses and product returns. Revenue recognition for aftermarket parts and spare parts is not subject to the variable consideration constraint.

FMS sales include contracts for products, services, or a combination of products and services. The payment for products and certain services is fixed, with consideration being variable for the Software-as-a-Service (SAAS) performance obligation until the number of activated devices is known. Allocation of the transaction price to each performance obligation using stand alone selling price (SSP). When SSP does not exist, the company estimates the SSP based on the adjusted market approach. Revenue for hardware is recognized at a point-in-time and over-time for services as they are provided under the contract. Management exercises significant judgments as it relates to the FMS revenue recognition in such areas as determining performance obligations, variable consideration, allocation of the transaction price and timing of revenue recognition.

Prior to the adoption of ASC 606, revenue was allocated to multiple element arrangements based upon the relative selling prices of each deliverable. In applying the relative selling price method, the Company determined the selling price for each deliverable using vendor specific objective evidence (VSOE), if it existed, or third-party evidence (TPE) of selling price. If neither VSOE nor TPE of selling price existed for a deliverable, the best estimate of selling price (BESP) was used for that element. BESP represented the price at which the Company would transact a sale if the element were sold on a standalone basis. The Company determined BESP for an element by considering multiple factors including, but not limited to, the Company's go-to-market strategy, pricing practices, internal costs, gross margin, market conditions and geographies. Revenue allocated to each element was then recognized when the other revenue recognition criteria are met for that element.

Goodwill - The Company has a significant amount of goodwill on its balance sheet that is not amortized, but subject to impairment tests each fiscal year on October 1 or more often when events or circumstances indicate that the carrying amount of goodwill may not be recoverable. The Company's impairment tests utilize the two-step approach. The first step of the goodwill impairment test compares fair value of a reporting unit with its carrying amount, including goodwill. If the fair value of a reporting unit exceeds its carrying amount, goodwill of the reporting unit is not considered impaired and thus the second step of the impairment test is unnecessary. If the carrying amount of a reporting unit exceeds its fair value, the second step of the goodwill impairment test shall be performed to measure the amount of impairment loss, if any. The second step of the goodwill impairment test compares the implied fair value of reporting unit goodwill with the carrying amount of that goodwill. If the carrying amount of reporting unit goodwill exceeds the implied fair value of that goodwill, an impairment loss shall be recognized in an amount equal to that excess.

The recoverability of goodwill is performed at the entity level as the Company operates as one reportable segment and one reporting unit. The plants, engineering, technical support, distribution centers and other support functions are shared among various product families and serve all distribution channels with many customers. In order to approximate the fair value of the

Table of Contents

reporting unit for purposes of testing recoverability, the Company uses the total market capitalization of the Company, a market approach, which is then compared to the total book value of the Company. In the event the Company's fair value has fallen below book value, the Company will compare the estimated fair value of goodwill to its book value. If the book value of goodwill exceeds the estimated fair value of goodwill, the Company will recognize the difference as an impairment loss in operating income. There has been no impairment of goodwill during 2018, and the Company's goodwill was not at risk for failing the first step of its impairment test.

The Company expects the announced change to an organizational structure managed by business regions in 2019 to impact its determination of its operating segments and reporting units, and will also require the Company to evaluate its goodwill for impairment immediately before and after the implementation of the new organizational structure. There is no indication that a change in the operating segments or reporting units of the Company will have a material effect on the consolidated financial statements.

Recoverability of Other Long-lived Assets - The Company makes judgments about the recoverability of long-lived assets, including fixed assets and finite-lived intangible assets whenever events or changes in circumstances indicate that an impairment may exist. If circumstances indicate an impairment may exist, we use an estimate of the undiscounted value of expected future operating cash flows to determine whether the long-lived assets are impaired. Long-lived assets will be evaluated for impairment either individually or in asset groups where their cash flows are largely independent of cash flows generated from other long-lived assets. If the aggregate undiscounted cash flows are less than the carrying amount of the assets, the resulting impairment charge to be recorded is calculated based on the excess of the carrying amount of the assets over the fair value of such assets, with the fair value generally determined based on an analysis of discounted cash flows.

Pension and Post-Retirement Benefits - The Company has significant pension and post-retirement benefit costs and liabilities that are developed from actuarial valuations. Inherent in these valuations are key assumptions including discount rates, expected return on plan assets, mortality rates, merit and promotion increases and the health care cost trend rate. The Company is required to consider current market conditions, including changes in interest rates and health care costs, in making its assumptions. Changes in the related pension and post-retirement benefit costs or liabilities may occur in the future due to changes in the assumptions. The assumptions as to the expected long-term rates of return on plan assets are based upon the composition of plan assets, historical long-term rates of return on similar assets and current and expected market conditions. The discount rate used for U.S. plans reflects the market rate for high-quality fixed-income investments on the Company's annual measurement date (December 31) and is subject to change each year. The discount rate was determined by matching, on an approximate basis, the coupons and maturities for a portfolio of corporate bonds (rated AA or better) to the expected plan benefit payments defined by the projected benefit obligation. The discount rates used for plans outside the United States are based on a combination of relevant indices regarding corporate and government securities, the duration of the liability and appropriate judgment. See the disclosures about pension and post-retirement obligations, the composition of plan assets, assumptions and other matters in Note 14 of Notes to the Consolidated Financial Statements.

Warranties - Products sold by WABCO are covered by a basic limited warranty with terms and conditions that vary depending upon the product and country in which it was sold. The limited warranty covers the equipment, parts and labor (in certain cases) necessary to satisfy the warranty obligation generally for a period of two years. Estimated product warranty expenses are accrued in cost of goods sold at the time the related sale is recognized. Estimates of warranty expenses are based primarily on warranty claims experience and specific customer contracts. Warranty expenses include accruals for basic warranties for product sold, as well as accruals for product recalls, service campaigns and other related events when they are known and estimable, less costs recoverable from suppliers related to warranty claims. To the extent we experience changes in warranty claim activity or costs associated with servicing those claims, our warranty accrual is adjusted accordingly. Warranty accrual estimates are updated based upon the most current warranty claims information available. The Company's warranty costs net of recoveries as a percentage of sales totaled 0.8% in 2018, 0.9% in 2017 and 0.8% in 2016. We do not expect this percentage to change materially

in the near future. See Note 16 of Notes to the Consolidated Financial Statements for a three-year summary of warranty costs.

Business Combinations - We allocate the fair value of purchase consideration to the assets acquired, liabilities assumed, and non-controlling interests in the acquiree generally based on their fair values at the acquisition date. The excess of the fair value of purchase consideration over the fair value of these assets acquired, liabilities assumed and non-controlling interests in the acquiree is recorded as goodwill. When determining the fair values of assets acquired, liabilities assumed, and non-controlling interests in the acquiree, management makes significant estimates and assumptions, especially with respect to intangible assets. Critical estimates in valuing intangible assets include, but are not limited to, expected future cash flows, which includes consideration of future growth rates and margins, attrition rates, future changes in technology and brand awareness, loyalty and position, and discount rates. Fair value estimates are based on the assumptions management believes a market participant would use in pricing the asset or liability. Amounts recorded in a business combination may change during the measurement period,

Table of Contents

which is a period not to exceed one year from the date of acquisition, as additional information about conditions existing at the acquisition date becomes available.

Income Taxes - Our income tax expense, deferred tax assets and liabilities, and liabilities for unrecognized tax benefits reflect management's best estimate of current and future taxes to be paid. We are subject to income taxes in the United States and numerous foreign jurisdictions. Significant judgments and estimates are required in the determination of the consolidated income tax expense. The impact of mix of U.S. versus foreign earnings may have a material impact on the effective tax rate given that tax rates in certain foreign jurisdictions (primarily Belgium, China, Germany, India, the Netherlands and Poland) vary from the U.S. statutory tax rate. See Note 17 of Notes to the Consolidated Financial Statements for Reconciliation of Effective Income Tax Rate.

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

The calculation of our tax liabilities involves dealing with uncertainties in the application of complex tax laws and regulations in a multitude of jurisdictions across our global operations. ASC 740, Income Taxes states that a tax benefit from an uncertain tax position may be recognized when it is more likely than not that the position will be sustained upon examination, including resolutions of any related appeals or litigation processes, on the basis of the technical merits.

We record unrecognized tax benefits as liabilities in accordance with ASC 740 and adjust these liabilities when our judgment changes as a result of the evaluation of new information not previously available. Because of the complexity of some of these uncertainties, the ultimate resolution may result in a payment that is materially different from our current estimate of the unrecognized tax benefit liabilities. These differences will be reflected as increases or decreases to income tax expense in the period in which new information is available

Contingencies - We are subject to proceedings, lawsuits and other claims related to products and other matters. We are required to assess the likelihood of any adverse judgments or outcomes to these matters as well as potential ranges of probable and reasonably possible losses. A determination of the amount of liability to be recorded, if any, for these contingencies is made after careful analysis of each individual issue. It is reasonably possible that the Company could incur losses in excess of the amounts accrued. Although this amount cannot be estimated, we believe that any additional losses would not have a material adverse impact on the consolidated financial statements.

Seasonality

Our operations are directly related to the commercial vehicle industry. We may experience seasonal variations in the demand for our products to the extent that OEM vehicle production fluctuates, such as during July, August and December when North American and European OEM plants may close for summer shutdowns and holiday periods. Shut-down periods in the rest of the world may vary by country.

Table of Contents

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

We are exposed to financial risk resulting from volatility in foreign currency exchange rates, interest rates and commodity prices. All of those risks are closely monitored.

Foreign Currency Exchange Rates

We conduct operations through controlled subsidiaries in most of the major countries of Western and Eastern Europe, Brazil, China, South Korea, India, Thailand and Japan as well as the United States. In addition, we conduct business in many countries through cross border sales and purchases, affiliated companies and partnerships in which we own 50% or less of the stock or partnership interest. As our financial statements are presented in U.S. Dollars, fluctuations in currency exchange rates can have a significant impact on the reported results of our operations, especially for the countries and currencies referred to above. Applying a Value-At-Risk (VAR) methodology to our foreign currency exchange rate exposure, across the translational and transactional exposures for the year 2018, the potential maximum loss in earnings is estimated to be \$19 million which is based on a one-year horizon and a 95% confidence level. The VAR model is a risk analysis tool and does not purport to represent actual losses in fair value that could be incurred by us, nor does it consider the potential effect of favorable changes in market factors or our ability to pass on foreign exchange effects to commercial counterparties. See also Note 20 of Notes to the Consolidated Financial Statements.

Interest Rate Sensitivity

We are exposed to market rate risk resulting from fluctuations in variable interest rate borrowings included in our debt portfolio. Our debt portfolio includes long-term fixed and floating rate term borrowings under the €300.0 million Schuldschein Loans, long-term fixed rate term borrowings under the €440.0 million Senior EUR Notes, and short-term variable rate borrowings, if any, under our multi-currency credit facility that has a borrowing capacity up to \$600.0 million. See Note 15 of Notes to the Consolidated Financial Statements for further discussion of our debt.

At December 31, 2018, we had an aggregate outstanding debt balance of \$845.2 million of which \$171.7 million was related to floating rate debt under our Schuldschein Loans. The floating rate component of the Schuldschein loans is based on the Euro Interbank Offered Rate (Euribor) plus 0.80% to 1.00%. There were no outstanding borrowings under the multi-currency revolving credit facility at December 31, 2018, which may incur interest based on an applicable margin that can vary from 0.30% to 0.85% based on the Company's leverage ratio plus LIBOR for loans denominated in U.S. Dollars and EURIBOR for loans denominated in Euros (SIBOR for loans denominated in Singapore Dollars and HIBOR for loans denominated in Hong Kong Dollars). As of December 31, 2018, a 1% increase in interest rates within the variable portion of our debt portfolio would have the effect of increasing annualized interest expense by approximately \$1.3 million. As of December 31, 2018, a 1% decrease in interest rates would have no effect due to the interest rate floor on our variable rate debt.

As of December 31, 2018, we also had \$639.6 million of cash, cash equivalents and short-term investments on hand. These balances are predominantly invested in interest bearing short-term instruments. As of December 31, 2018, a 1% change of the interest rates would have the effect of increasing or decreasing net interest income by approximately \$7.0 million.

Commodity Exposures

We are also exposed to fluctuations in commodity prices through the purchase of base metals and steel, mainly through contractual agreements with component suppliers. As we do not purchase these commodities directly, changes in their prices could affect our financial results with a time lag of up to 6 months.

Applying a VAR methodology to our 2018 commodity exposure, the potential maximum loss in earnings is estimated to be \$23.1 million which is based on a one-year horizon and a 95% confidence level. The VAR model is a risk analysis tool and does not purport to represent actual losses in fair value that could be incurred by us, nor does it consider the potential effect of favorable changes in market factors or our ability to pass on effects to commercial counterparties.

Table of Contents

Item 8. Financial Statements and Supplementary Data

Report of Independent Registered Public Accounting Firm

To the Shareholders and the Board of Directors of WABCO Holdings Inc.

Opinion on the Financial Statements

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

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the Company's internal control over financial reporting as of December 31, 2018, based on criteria established in Internal Control-Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework), and our report dated February 15, 2019 expressed an unqualified opinion thereon.

Basis for opinion

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

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

Ernst & Young Bedrijfsrevisoren BCVBA/Réviseurs d'Entreprises SCCRL

We have served as the Company's auditor since 2007.

Diegem, Belgium
February 15, 2019

Table of ContentsWABCO HOLDINGS INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF OPERATIONS

(Amounts in millions, except share and per share data)	Year Ended December 31,		
	2018	2017	2016
Sales	\$3,831.0	\$ 3,304.2	\$ 2,810.0
Cost of sales	2,658.5	2,290.4	1,931.0
Gross profit	1,172.5	1,013.8	879.0
Costs and expenses:			
Selling and administrative expenses	476.0	411.2	356.6
Research, development and engineering expenses	184.4	147.0	135.2
Other operating (income)/expense, net	(0.4)	20.6	5.3
Operating income	512.5	435.0	381.9
Equity income of unconsolidated joint ventures, net	1.0	23.1	24.8
Gain on remeasurement of equity investments	—	247.7	—
Other non-operating expense, net	(42.3)	(37.2)	(24.9)
Interest expense, net	(7.5)	(16.0)	(12.7)
Income before income taxes	463.7	652.6	369.1
Income tax expense	49.3	229.7	121.8
Net income including noncontrolling interests	414.4	422.9	247.3
Less: net income attributable to noncontrolling interests	20.3	16.8	24.3
Net income attributable to Company	\$394.1	\$ 406.1	\$ 223.0
Net income attributable to Company per common share			
Basic	\$7.46	\$ 7.53	\$ 4.00
Diluted	\$7.43	\$ 7.50	\$ 3.98
Cash dividends per share of common stock	\$—	\$—	\$—
Weighted average common shares outstanding			
Basic	52,846,962	53,903,938	55,695,738
Diluted	53,062,573	54,139,815	55,981,816

See Notes to the Consolidated Financial Statements.

Table of ContentsWABCO HOLDINGS INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME

(Amounts in millions)	Year Ended December 31,		
	2018	2017	2016
Net income including noncontrolling interests	\$414.4	\$422.9	\$247.3
Other comprehensive (loss)/income:			
Currency translation adjustments	(71.2)	154.2	(55.0)
Pensions and post-retirement benefit plan adjustments, net	5.0	(38.0)	(15.9)
Unrealized gains on hedges, net	0.8	0.2	0.2
Unrealized losses on investments, net	—	(0.1)	—
Total other comprehensive (loss)/income	\$(65.4)	\$116.3	\$(70.7)
Comprehensive income	\$349.0	\$539.2	\$176.6
Less: Comprehensive income attributable to noncontrolling interests	14.4	20.3	23.0
Comprehensive income attributable to Company	\$334.6	\$518.9	\$153.6

See Notes to the Consolidated Financial Statements.

Table of ContentsWABCO HOLDINGS INC. AND SUBSIDIARIES
CONSOLIDATED BALANCE SHEETS

	December 31, 2018	December 31, 2017
(Amounts in millions, except share data)		
ASSETS		
Current assets:		
Cash and cash equivalents	\$ 503.8	\$ 1,141.5
Short-term investments	135.8	0.6
Accounts receivable, net	611.5	669.2
Inventories, net	319.1	321.4
Guaranteed notes receivable	44.1	39.7
Investments in repurchase agreements	85.8	137.5
Other current assets	96.8	84.3
Total current assets	1,796.9	2,394.2
Property, plant and equipment, net	553.6	522.3
Goodwill	809.4	834.7
Deferred tax assets	236.7	211.1
Investments in unconsolidated joint ventures	10.4	6.5
Intangible assets, net	246.6	266.6
Other assets	85.0	88.0
TOTAL ASSETS	\$ 3,738.6	\$ 4,323.4
LIABILITIES AND EQUITY		
Current liabilities:		
Loans payable to banks	\$ —	\$ 386.5
Accounts payable	232.5	258.1
Accrued payroll	111.2	130.4
Current portion of warranties	23.3	29.5
VAT payable	15.7	18.2
Accrued expenses	73.8	81.6
Promotion and customer incentives	26.6	24.3
Accrued income tax	28.2	56.2
Other accrued liabilities	84.7	88.5
Total current liabilities	596.0	1,073.3
Long-term debt	845.2	1,023.3
Pension and post-retirement benefits	716.0	700.7
Deferred tax liabilities	75.4	75.3
Long-term income tax liabilities	156.8	166.8
Other liabilities	84.0	82.9
Total liabilities	2,473.4	3,122.3
Shareholders' equity:		
Preferred stock, 4,000,000 shares authorized; none issued and outstanding	—	—
Common stock, \$.01 par value, 400,000,000 shares authorized; shares issued: 79,018,266 in 2018; 78,937,828 in 2017; and shares outstanding: 51,364,925 in 2018; 53,735,486 in 2017	0.8	0.8
Capital surplus	898.5	883.2
Treasury stock, at cost: 27,653,341 shares in 2018; 25,202,342 shares in 2017	(2,159.3) (1,861.3)
Retained earnings	2,960.8	2,563.2
Accumulated other comprehensive loss	(524.0) (464.5)

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Total shareholders' equity	1,176.8	1,121.4
Noncontrolling interests	88.4	79.7
Total equity	1,265.2	1,201.1
TOTAL LIABILITIES AND EQUITY	\$ 3,738.6	\$ 4,323.4

See Notes to the Consolidated Financial Statements.

54

Table of ContentsWABCO HOLDINGS INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF CASH FLOWS

(Amounts in millions)	Year Ended December 31,		
	2018	2017	2016
Operating activities:			
Net income including noncontrolling interests	\$414.4	\$422.9	\$247.3
Adjustments to reconcile net income to net cash provided by operating activities:			
Depreciation	95.8	84.8	76.0
Impairment of non-marketable equity securities	5.5	—	—
Amortization of intangibles	28.9	22.3	22.0
Equity in earnings of unconsolidated joint ventures, net of dividends received	(1.0)	0.8	3.9
Non-cash stock compensation	20.0	16.4	13.1
Non-cash interest expense and debt issuance cost amortization	15.4	23.1	17.7
Deferred income tax (benefit)/expense	(23.6)	(48.2)	68.3
Pensions and post-retirement benefit expense	62.2	57.5	44.2
Gain on remeasurement of equity investments	—	(247.7)	—
Foreign currency effects on changes in monetary assets/liabilities	(2.3)	(6.8)	(5.5)
Unrealized loss/(gain) on revaluation of foreign currency forward contracts	2.5	(1.7)	1.1
Loss on debt extinguishment	2.3	—	—
Other	2.8	0.6	0.8
Changes in assets and liabilities:			
Accounts receivable, net	27.5	(64.3)	(61.5)
Inventories, net	(13.4)	(16.0)	(3.9)
Accounts payable	(23.8)	5.4	21.7
Other accrued liabilities and taxes	(66.8)	12.6	66.4
Other current and long-term assets	(40.5)	27.4	(38.8)
Other long-term liabilities	(11.5)	157.1	(45.8)
Pension and post-retirement benefit contributions	(25.9)	(24.7)	(21.6)
Net cash provided by operating activities	468.5	421.5	405.4
Investing activities:			
Purchases of property, plant and equipment	(118.2)	(104.7)	(104.0)
Investments in capitalized software	(13.9)	(5.8)	(10.0)
Proceeds from disposal of property, plant and equipment	—	—	7.0
Purchases of short-term investments and repurchase agreements	(687.2)	(535.2)	(324.6)
Sales and maturities of short-term investments and repurchase agreements	585.2	548.4	273.0
Cost of preferred stock investment	—	(10.0)	(0.9)
Return of investment in unconsolidated joint venture	—	1.8	—
Investment in unconsolidated joint ventures	(3.8)	—	—
Acquisitions of businesses, net	(8.6)	(382.7)	(92.3)
Net cash used by investing activities	(246.5)	(488.2)	(251.8)
Financing activities:			
Borrowings of long-term debt	368.5	25.3	730.1
Repayments of long-term debt	(500.0)	(25.0)	(261.0)
Net (repayments)/borrowings of short-term debt	(385.4)	382.5	(4.9)
Settlement of forward contract	—	(0.3)	15.2
Taxes withheld and paid on employee stock award vestings	(5.1)	(4.9)	(6.0)
Purchases of treasury stock	(300.0)	(120.0)	(250.0)
Proceeds from noncontrolling interest shareholders	—	0.6	—

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Dividends to noncontrolling interest holders	(5.7)	(7.1)	(6.7)
Proceeds from exercise of stock options	0.6	9.5	3.9
Net cash (used)/provided by financing activities	(827.1)	260.6	220.6
Effect of exchange rate changes on cash and cash equivalents	(32.2)	85.1	(26.9)
Net (decrease)/increase in cash and cash equivalents	(637.3)	279.0	347.3
Cash and cash equivalents at beginning of period	1,141.5	862.5	515.2
Cash and cash equivalents at end of period	\$504.2	\$1,141.5	\$862.5

Table of Contents

(Amounts in millions)	Year Ended December 31,		
	2018	2017	2016
Supplemental cash flow disclosures			
Cash paid during the period for:			
Interest	\$20.0	\$20.0	\$16.5
Income taxes	\$109.0	\$64.1	\$50.8
Non cash activity:			
Increase/(decrease) in capital expenditures included in accounts payable and other accrued liabilities	\$13.8	\$1.8	\$(14.9)
Reconciliation of cash, cash equivalents and restricted cash to the consolidated balance sheets:			
Cash and cash equivalents	\$503.8	\$1,141.5	\$862.5
Restricted cash, included in other assets	0.4	—	—
Cash, cash equivalents and restricted cash at end of period	\$504.2	\$1,141.5	\$862.5

See Notes to the Consolidated Financial Statements.

Table of ContentsWABCO HOLDINGS INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF SHAREHOLDERS' EQUITY

(Amounts in millions)	Common Stock	Capital Surplus	Treasury Stock	Retained Earnings	Accumulated Other Comprehensive Loss	Non Controlling Interests	Total
Balance at December 31, 2015	\$ 0.8	\$852.6	\$(1,497.3)	\$1,938.5	\$ (507.9)	\$ 49.6	\$836.3
Net income	—	—	—	223.0	—	24.3	247.3
Other comprehensive loss	—	—	—	—	(69.4)	(1.3)	(70.7)
Treasury stock purchased	—	—	(250.0)	—	—	—	(250.0)
Stock options exercised	—	3.9	—	—	—	—	3.9
Treasury stock reissued	—	(2.9)	2.9	—	—	—	—
Stock-based compensation	—	7.6	—	(0.4)	—	—	7.2
Dividends paid	—	—	—	—	—	(6.7)	(6.7)
Balance at December 31, 2016	\$ 0.8	\$861.2	\$(1,744.4)	\$2,161.1	\$ (577.3)	\$ 65.9	\$767.3
Net income	—	—	—	406.1	—	16.8	422.9
Other comprehensive income	—	—	—	—	112.8	3.5	116.3
Treasury stock purchased	—	—	(120.0)	—	—	—	(120.0)
Stock options exercised	—	9.5	—	—	—	—	9.5
Treasury stock reissued	—	0.9	3.1	(4.0)	—	—	—
Stock-based compensation	—	11.6	—	—	—	—	11.6
Dividends paid	—	—	—	—	—	(7.1)	(7.1)
Proceeds from minority interest shareholders	—	—	—	—	—	0.6	0.6
Balance at December 31, 2017	\$ 0.8	\$883.2	\$(1,861.3)	\$2,563.2	\$ (464.5)	\$ 79.7	\$1,201.1
Adoption of ASU 2016-16 - See Note 3	—	—	—	5.3	—	—	5.3
Net income	—	—	—	394.1	—	20.3	414.4
Other comprehensive loss	—	—	—	—	(59.5)	(5.9)	(65.4)
Treasury stock purchased	—	—	(300.0)	—	—	—	(300.0)
Stock options exercised	—	0.6	—	—	—	—	0.6
Treasury stock reissued	—	(0.2)	2.0	(1.8)	—	—	—
Stock-based compensation	—	14.9	—	—	—	—	14.9
Dividends paid	—	—	—	—	—	(5.7)	(5.7)
Balance at December 31, 2018	\$ 0.8	\$898.5	\$(2,159.3)	\$2,960.8	\$ (524.0)	\$ 88.4	\$1,265.2

See Notes to the Consolidated Financial Statements.

Table of Contents

WABCO HOLDINGS INC. AND SUBSIDIARIES
NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS
December 31, 2018

NOTE 1. Description of Company

WABCO Holdings Inc. and its subsidiaries (collectively "WABCO," "Company," "we," or "our") engineer, develop, manufacture and sell integrated systems controlling advanced braking, stability, suspension, steering, transmission automation, as well as air compression and processing primarily for commercial vehicles. WABCO's largest selling products are pneumatic anti-lock braking systems (ABS), electronic braking systems (EBS), electronic stability control (ESC) systems, brake controls, automated manual transmission systems (AMT), air disc brakes and a large variety of conventional mechanical products such as actuators, air compressors and air control valves for medium- and heavy-duty trucks, buses and trailers. In addition, we supply commercial vehicle aftermarket distributors and service partners as well as fleet operators with replacement parts, fleet management solutions, diagnostic tools, training and other expert services. WABCO sells its products primarily to two groups of customers around the world: original equipment manufacturers (OEMs) including truck and bus, trailer, car and off-highway, and commercial vehicle aftermarket distributors of replacement parts and services as well as commercial vehicle fleet operators for management solutions and services. We also provide remanufacturing services globally.

WABCO was founded in the United States in 1869 as Westinghouse Air Brake Company. The Company was purchased by American Standard Companies Inc. (American Standard) in 1968 and operated as the Vehicle Control Systems business division within American Standard until the Company was spun off from American Standard on July 31, 2007. Subsequent to the spin-off, American Standard changed its name to Trane Inc., which is herein referred to as "Trane." On June 5, 2008, Trane was acquired in a merger with Ingersoll-Rand Company Limited (Ingersoll Rand) and exists today as a wholly owned subsidiary of Ingersoll Rand.

The spin-off by Trane of its Vehicle Control Systems business became effective on July 31, 2007, through a distribution of 100% of the common stock of WABCO to Trane's shareholders (the Distribution). The Distribution was effected through a separation and distribution agreement pursuant to which Trane distributed all of the shares of WABCO common stock as a dividend on Trane common stock, in the amount of one share of WABCO common stock for every three shares of outstanding Trane common stock to each shareholder on the record date. Trane received a private letter ruling from the Internal Revenue Service and an opinion from tax counsel indicating that the spin-off was tax free to the shareholders of Trane and WABCO.

NOTE 2. Summary of Significant Accounting Policies

Use of Estimates - The preparation of consolidated financial statements in conformity with U.S. GAAP requires management to make estimates and assumptions that affect the amounts reported in the consolidated financial statements and accompanying notes. Management believes the most complex and sensitive judgments, because of their significance to the consolidated financial statements, result primarily from the need to make estimates about the effects of matters that are inherently uncertain. Actual results could differ from those estimates. The more significant estimates included in the preparation of the consolidated financial statements are related to revenue recognition, useful lives and recoverability of long-lived assets, warranties, pension and post-retirement benefits, valuation of equity investments, income taxes, provisions for loss contingencies, business combinations and stock-based compensation.

Principles of Consolidation and Presentation - All majority owned or controlled subsidiaries of WABCO are included in the consolidated financial statements and intercompany transactions are eliminated upon consolidation. WABCO investments in unconsolidated joint ventures are included at cost plus its equity in undistributed earnings in accordance with the equity method of accounting and reflected as investments in unconsolidated joint ventures on the consolidated balance sheets. Certain prior period amounts in the consolidated statement of cash flows have been reclassified to present the foreign currency effects on changes in monetary assets and liabilities and the revaluation of foreign currency forward contracts as non-cash adjustments to reconcile net income to net cash provided by operating activities.

Reportable Segment - Based on the organizational structure, as well as the nature of financial information available and reviewed by the Company's chief operating decision maker to assess performance and make decisions about resource allocations, the Company has concluded that WABCO has one reportable segment as of December 31, 2018. During the fourth quarter of 2018, the Company disclosed a new organizational structure managed by business regions. However, the Company is currently in the implementation phase of this new structure including defining its revised internal reporting to the chief operating decision

Table of Contents

maker. The financial reporting to the Company's chief operating decision maker has remained unchanged as of December 31, 2018 and as of the filing date of February 15, 2019. See also Note 19 for discussion.

Foreign Currency Translation - Adjustments resulting from the translation of foreign currency denominated assets and liabilities into U.S. Dollars at exchange rates in effect as of the balance sheet date, and income and expense accounts at the average exchange rates in effect during the period, are recorded as a component of accumulated other comprehensive loss in shareholders' equity. Accumulated other comprehensive loss also includes the effects of exchange rates on intercompany transactions of a long-term investment nature and transactions designated as a hedge of a net-investment in foreign subsidiaries. Gains or losses resulting from transactions in a currency other than the functional currency are reflected in the consolidated statements of operations as other non-operating income or expense.

Revenue Recognition - The Company adopted Accounting Standards Update (ASU) 2014-09 Revenue from Contracts with Customers, together with its amendments collectively referred to as ASC 606, as of January 1, 2018 using the modified retrospective method as applied to customer contracts that were not completed as of the date of adoption. 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.

Revenue under ASC 606 is recognized when control over a product or service is transferred to a customer. Revenue is measured at the transaction price which is based on the amount of consideration that the Company expects to receive in exchange for transferring the promised goods or services to the customer and excludes any amounts collected on behalf of third parties. 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. The Company enters into contracts that may include both products and services, which are generally capable of being distinct and accounted for as separate performance obligations.

The Company generates revenue through serial production of parts in the OEM end-market and through the delivery of parts, spare parts and fleet management solutions (FMS) in the Aftermarket. Truck and bus contracts generally include Long Term Supply Agreements (LTSA) and Purchase Orders (PO) whereby the LTSA stipulates the pricing and delivery terms and is evaluated together with a PO, which identifies the quantity, timing, and the type of product to be transferred. Certain customer contracts do not always have an LTSA, in which case, the contracts are governed by the PO from the customer.

Payments from customers are typically due within 60 days of invoicing but varies based on jurisdiction and local practices. The Company does not have significant financing components or payment terms greater than 12 months. In most jurisdictions where the Company operates, sales are subject to Value Added Tax (VAT). Sales are presented net of VAT in the consolidated statements of operations. Amounts billed to customers for shipping and handling costs are included in sales. Shipping and handling costs associated with outbound freight after control over a product has transferred to a customer are accounted for as a fulfillment cost and are included in cost of sales.

OEM

The sale of serial production parts to OEMs or independent distributors that do not require customization, such as most trailer parts or trailer production parts, are satisfied at a point in time as the parts are deemed to have an alternative use to the Company. Revenue is recognized when the control of the parts transfers to the customer, which is based on shipping terms. The transaction price for these parts is equal to the contracted part price of each unit and represents the standalone selling price for the part and there is no expectation of material variable consideration in the transaction price. Management does not exercise significant judgment when accounting for the sale of serial production parts that are relatively homogeneous and produced to industry standards.

Certain serial production parts may require specific customization. The Company performs these customization services in order to obtain the LTSA. In some instances, the Company receives reimbursement for a portion of the pre-production cost incurred from the OEM. These reimbursements are not within the scope of ASC 606 and are

accounted for under the guidance in ASC 340-10, Other Assets and Deferred Costs, and are offset against capitalized costs or research and development expenses depending on the terms of the contract. Revenue for serial production contracts requiring customization is recognized at a point in time as most customized serial production parts have an alternative use in that they may be sold in the aftermarket. Serial production contracts also generally do not provide for an enforceable right for full recovery under the LTSA that would be necessary for over-time revenue recognition. Revenue for serial production contracts is recognized when the control of the parts transfers to the customer based on the shipping terms. If any sales were to meet the over-time recognition criteria, the Company has elected to recognize revenue as it produces the specified units, using a “cost-to-cost” method, which is an appropriate method under ASC 606-10-50-18 to measure progress towards completion of the performance obligation to deliver the parts to the customer. The Company believes that this method better reflects its efforts to satisfy its performance obligation as the cost incurred (resources

Table of Contents

consumed, labor hours expended, time elapsed and machine hours used) is proportionate to its progress in satisfying the performance obligation.

Most serial production contracts include provisions for volume discounts. In certain markets, the Company has historically provided customers with discounts not stated in the contract. These practices create a valid expectation for the customer to receive discounts on purchases. The Company considers these adjustments to the contract price as variable considerations, which it estimates based on the most likely amount approach. Volume discounts offered to serial production part customers provide for a limited number of outcomes and are typically binary in nature when determining the amount of the customer discount. Variable consideration is not constrained. Revenue recognized is limited to the amount the Company expects to receive. Amounts billed but ultimately expected to be refunded to the customer are included within promotion and customer incentives on the consolidated balance sheet. Management has exercised significant judgment as it relates to revenue recognition for serial parts production in such areas as scoping, contract identification, determining performance obligations, variable consideration, and the timing of revenue recognition.

Aftermarket

The Company generates revenue through the delivery of aftermarket parts and spare parts to OEMs and independent distributors, and the delivery of FMS to truck, fleet, trailer and cargo management providers. Aftermarket parts production contracts have one type of performance obligation which is the delivery of aftermarket parts and spare parts. Aftermarket products are deemed to have alternative use since they can be sold to multiple customers. Revenue for aftermarket part production contracts is recognized at a point in time and revenue is recognized when the control of the parts transfers to the customer which is based on shipping terms.

Aftermarket contracts may include variable consideration related to discounts, bonuses, and product returns. Variable consideration for aftermarket parts is not constrained. The Company grants its customers cash discounts and various performance bonuses and incentives. The customer usually has the right to return products to the Company in the event of defective products or excess quantity. The Company estimates the volume discounts based on the most likely amount. Discounts and incentives offered to aftermarket customers provide for a limited number of outcomes and are typically binary in nature when determining the amount of the customer discount. Amounts billed and ultimately expected to be refunded to the customer are included within customer and promotion incentives on the consolidated balance sheets. The transaction price for each individual aftermarket part or spare part is identified on the aftermarket contract and represents the standalone selling price for the part.

FMS contracts generally include hardware and software and are bundled with a term-based service contract. The FMS revenue stream has multiple performance obligations that include products, services, or a combination of products and services. WABCO receives a fixed payment for the equipment and certain services and receives a variable payment for the Software-as-a-Service (SaaS) performance obligation based on the number of activated devices. Variable consideration is constrained until the amount of activated devices is known. WABCO allocates the total transaction price to the performance obligations based on the stand alone selling price (SSP) for each obligation. When the SSP does not exist, the Company estimates the SSP based on the adjusted market approach. Revenue is recognized when control of the goods or services transfers to the customer, at a point in time (based on shipping terms) for hardware and over-time as the services are provided for the remaining performance obligations. Management has exercised significant judgment as it relates to the revenue recognition for fleet management services in such areas as determining performance obligations, variable consideration, allocation of transaction price and the timing of revenue recognition.

Revenue recognition prior to January 1, 2018

The Company recognizes revenue when title and risk of loss have transferred, persuasive evidence of arrangement exists, the sales price is fixed or determinable and collectibility is reasonably assured. Certain of the Company's product offerings contain multiple deliverables including hardware with embedded firmware, back office hosting services, unspecified software upgrades and enhancements related to the software embedded in these products through service contracts, which are considered separate units of accounting. For products under these arrangements, the software and non-software components function together to deliver the tangible product's essential functionality.

The Company allocates revenue to each element in these multiple-element arrangements based upon the relative selling prices of each deliverable. In applying the relative selling price method, the Company determines the selling price for each deliverable using vendor specific objective evidence (VSOE), if it exists, or third-party evidence (TPE) of selling price. If neither VSOE nor TPE of selling price exist for a deliverable, the best estimate of selling price (BESP) is then used for that element. BESP represents the price at which the Company would transact a sale if the element were sold on a standalone basis. The Company determines BESP for an element by considering multiple factors including, but not limited to, the Company's go-to-market strategy, pricing practices, internal costs, gross margin, market conditions and geographies. Revenue allocated to each element is then recognized when the other revenue recognition criteria are met for that element.

Table of Contents

Rebates and sales incentives

The Company records cooperative advertising allowances, rebates and other forms of sales incentives as a reduction of sales at the later of the date of the sale or the date the incentive is offered. For these costs, the Company recorded \$51.8 million, \$48.6 million and \$53.8 million in 2018, 2017 and 2016, respectively, in the accompanying consolidated statements of operations.

Cash and Cash Equivalents - Cash equivalents include all highly liquid investments with maturity of three months or less when purchased. Restricted cash balances are classified as either other current assets or other assets, depending upon the nature of the restriction.

Marketable Investments - Investments in marketable securities may consist of mutual funds or deposit funds holding primarily term deposits, certificates of deposit and short-term bonds. The Company classifies its marketable investments as either short-term or long-term based on the contractual maturity of each underlying instrument, its availability of use in current operations and the Company's holding intention. Prior to the adoption of ASU 2016-01 as discussed in Note 3, marketable securities were accounted for as available-for-sale securities with changes in market value included in other comprehensive income. Subsequent to the adoption of ASU 2016-01 effective January 1, 2018 discussed in Note 3, the net unrealized change in the market value of investments in marketable securities is recorded in other non-operating expense, net in the consolidated statement of operations. As of December 31, 2018, the Company had marketable securities of \$135.8 million classified as short-term investments and \$2.8 million included in other assets on the consolidated balance sheets. As of December 31, 2017, the Company had marketable securities of \$0.6 million classified as short-term investments and had \$2.9 million included in other assets on the consolidated balance sheets.

The Company monitors its marketable securities for indications of impairment and recognizes an impairment loss when it is determined the fair value is less than the carrying value. The Company did not recognize any impairment loss on its marketable securities during the years ended December 31, 2018, 2017 or 2016.

Accounts receivable, net - Accounts receivable are recorded at invoiced amounts less the allowance for doubtful accounts. The Company performs ongoing credit evaluations of its customers and records an allowance to reduce receivables to the amount reasonably expected to be collected. In determining the allowance for doubtful accounts WABCO analyzes the aging of accounts receivable, historical bad debts, customer creditworthiness, availability of credit insurance and current economic trends. The allowance for doubtful accounts was \$10.7 million and \$9.4 million at December 31, 2018 and 2017, respectively.

Transfers of Financial Instruments - The Company accounts for sales and transfers of financial instruments under ASC 860, Transfers and Servicing. ASC 860 states that a transfer of financial assets (either all or a portion of a financial asset) in which the transferor surrenders control over those financial assets shall be accounted for as a sale to the extent that consideration other than beneficial interests in the transferred assets is received in exchange. In the normal course of business, the Company may discount and sell accounts receivable or exchange accounts receivable for short-term notes receivable. Accounts receivable that are sold without recourse and that meet the criteria for sale accounting under ASC 860 are excluded from accounts receivable on the consolidated balance sheets. The proceeds received from such sales are included in operating cash flows. In instances where receivables are sold with recourse, such that the Company effectively maintains control over the receivables, the Company accounts for these as secured borrowings. The expenses associated with the discounting of receivables are recorded in the consolidated statements of operations as other non-operating expense.

The Company may receive customer notes in settlement of accounts receivable, primarily in the Asia Pacific region. The collection of such customer notes receivables are included in operating cash flows based on the substance of the underlying transactions, which are operating in nature. Notes receivable held by the Company that are secured by

bank guarantees are classified as guaranteed note receivable. The Company also accepts unsecured notes in settlement of accounts receivable from certain customers. Notes receivable may be held by the Company until maturity, transferred to suppliers to settle liabilities, or sold to third party financial institutions in exchange for cash. As of December 31, 2018 and 2017, there was \$44.1 million and \$39.7 million of guaranteed notes receivable outstanding, respectively, and \$2.2 million and \$3.3 million of unguaranteed notes receivable outstanding, respectively. See Note 12 for additional information on guaranteed notes receivable.

Investment in Repurchase Agreements - The Company may enter into agreements to purchase securities under agreements to resell (reverse repurchase agreements). Reverse repurchase agreements are accounted for as secured financing transactions and reported as investment in repurchase agreements on the consolidated balance sheets. These agreements are recorded at their contracted resale amounts plus accrued interest. In reverse repurchase transactions, the Company takes possession of or obtains a security interest in the related securities, and has the right to sell or repledge the collateral received.

Table of Contents

Inventories, net - Inventories are stated at the lower of cost or market using the last-in, first-out (LIFO) and first-in, first out (FIFO) methods with most inventories valued using the LIFO method. The inventories of an acquired business may be valued using either LIFO or FIFO as the Company considers the cost method that provides for the better matching of costs to the sales. Inventories are categorized as finished products, products-in-process and raw materials. On a quarterly basis, the Company tests its inventory for slow moving and obsolete stock by considering both the historical and expected sales and the Company will record a provision, if needed.

Property, Plant & Equipment, net - Property, plant and equipment balances, including tooling, are stated at cost less accumulated depreciation. WABCO capitalizes costs, including interest during construction of fixed asset additions, improvements, and betterments that add to productive capacity or extend the useful life of the fixed asset. WABCO assesses facilities and equipments for impairment when events or circumstances indicate that the carrying amount of these assets may not be recoverable. Maintenance and repair expenditures are expensed as incurred. Depreciation and amortization are computed on the straight-line method based on the estimated useful life of the asset or asset group, which are 40 years for buildings and 5 to 15 years for machinery and equipment. Tooling may be depreciated over its estimated useful life from 2 to 10 years using the straight-line method or units of production methods.

Equity Method and Non-Marketable Investments - The Company uses the equity method of accounting for equity investments in instances where the Company has the ability to exercise significant influence, but does not have a controlling financial interest. The proportionate share of income or losses from investments accounted for under the equity method is recorded in the consolidated statements of operations. The carrying value of equity method investments of \$10.4 million and \$6.5 million at December 31, 2018 and 2017, respectively, is reported in the consolidated balance sheets as investments in unconsolidated joint ventures, and is adjusted for the Company's proportionate share of net earnings and losses, as well as dividends. The Company evaluates its equity method investments for impairment whenever events or changes in circumstances indicate a loss in value of the investment may be other than temporary. This evaluation considers the investee financial condition as well as investee historical and projected results of operations and cash flows. If the actual outcomes for an investee are significantly different from projections, the Company may impair its investment. See Note 18 for additional information on equity method investments.

Prior to the adoption of ASU 2016-01 discussed in Note 3, the Company used the cost method to account for non-marketable equity investments for which it does not control and for which it does not have the ability to exercise significant influence over the entity's operating and financial policies. Upon adoption of ASU 2016-01, the Company has elected the measurement alternative for its investments in equity securities without a readily determinable fair value. Under the measurement alternative, the Company measures its non-marketable investments at cost, less impairment and adjusted for observable price changes for identical or similar investments of the investee. At each reporting period the Company performs a qualitative assessment, considering impairment indicators, to evaluate whether its non-marketable investments are impaired. If the fair value of a non-marketable investment is less than its carrying value, an impairment loss is recognized in an amount equal to the difference between the fair value and the carrying value. See Note 21 for additional information on non-marketable investments

Pre-Production Costs Related to Long-Term Supply Arrangements -The Company may incur pre-production engineering and tooling related costs such as molds, dies, and tools (referred to as "tooling"), for products produced under long-term supply agreements with its customers. If the Company owns the related tooling, or if the Company does not own the tooling but receives a non-cancelable right from its customers to use the related tooling during the supply arrangement, then the costs incurred by the Company are capitalized as part of property, plant and equipment, subject to an impairment assessment, and amortized over the shorter of their useful life or the supply arrangement. If the Company has the contractual right to reimbursement for the tooling, the cost of the tooling is also capitalized as property, plant and equipment, subject to an impairment assessment, pending transfer of ownership and reimbursement from the customer. If there is an estimated loss on an arrangement to provide tooling to a customer, it

is recorded in the period in which the loss is estimated and is probable.

Non-reimbursable design and development costs for products to be sold under long-term supply arrangements are expensed as incurred to research, development and engineering expenses unless the cost reimbursement is contractually guaranteed in a customer contract, in which case the costs are capitalized and subsequently reduced upon lump sum or piece price recoveries from the customer.

Goodwill - Goodwill represents the excess of fair value of consideration paid for an acquired entity over the fair value of the assets acquired and liabilities assumed in a business combination. Goodwill is not amortized, but subject to impairment tests each fiscal year on October 1 or more often when events or circumstances indicate that the carrying amount of goodwill may not be recoverable. The Company's impairment test utilizes the two-step approach. The first step of the goodwill impairment test compares the fair value of a reporting unit with its carrying amount, including goodwill. If the fair value of a reporting unit exceeds its carrying amount, goodwill of the reporting unit is not considered impaired and thus the second step of the impairment test is unnecessary. If the carrying amount of a reporting unit exceeds its fair value, the second step of the goodwill impairment test is

Table of Contents

performed to measure the amount of the impairment loss, if any. The second step of the goodwill impairment test compares the implied fair value of reporting unit goodwill with the carrying amount of that goodwill. If the carrying amount of reporting unit goodwill exceeds the implied fair value of that goodwill, an impairment loss shall be recognized in an amount equal to that excess.

The recoverability of goodwill is performed at the entity level as the Company operates as one reportable segment and one reporting unit. The plants, engineering, technical support, distribution centers and other support functions are shared among various product families and serve all distribution channels with many customers. In order to approximate the fair value of the reporting unit for purposes of testing recoverability, we use the total market capitalization of the Company, a market approach, which is then compared to the total book value of the Company. In the event the Company's fair value has fallen below book value, the Company will compare the estimated fair value of goodwill to its book value. If the book value of goodwill exceeds the estimated fair value of goodwill, the Company will recognize the difference as an impairment loss in operating income. There has been no impairment of goodwill during each of the years presented in the consolidated statements of operations.

The Company expects the announced change to an organizational structure managed by business regions in 2019 to impact its determination of its operating segments and reporting units, and will also require the Company to evaluate its goodwill for impairment immediately before and after the change in operating segments. There is no indication that a change in the operating segments of the Company will have a material effect on the consolidated financial statements.

Intangible Assets, net - Intangible assets with determinable lives consist of customer and distribution relationships, patented and unpatented technology, in-process research and development, and other intangibles that are amortized on a straight-line basis over their estimated useful lives, ranging from 1 to 20 years except for intangibles related to trade name which may have a longer useful life. WABCO also capitalizes the cost of obtaining or developing internal-use computer software, including directly related payroll costs, as capitalized software within intangible assets. Capitalized software costs are amortized on a straight-line basis over periods of up to 7 years, beginning when the software is ready for its intended use. WABCO assesses intangible assets for impairment when events or circumstances indicate that the carrying amount of these assets may not be recoverable.

Warranties - Products sold by WABCO are covered by a basic limited warranty with terms and conditions that vary depending upon the product and country in which it was sold. The limited warranty covers the equipment, parts and labor (in certain cases) necessary to satisfy the warranty obligation generally for a period of 2 years. Estimated product warranty expenses are accrued in cost of sales at the time the related sale is recognized. Estimates of warranty expenses are based primarily on warranty claims experience and specific customer contracts. Warranty expenses include accruals for basic warranties for product sold, as well as accruals for product recalls, service campaigns and other related events when they are known and estimable, less costs recoverable from suppliers related to warranty claims. To the extent WABCO experiences changes in warranty claim activity or costs associated with servicing those claims, its warranty accrual is adjusted accordingly. Warranty accrual estimates are updated based upon the most current warranty claims information available. The Company's warranty costs net of recoveries as a percentage of sales totaled 0.8% in 2018, 0.9% in 2017 and 0.8% in 2016. See Note 16 for additional information on warranties.

Pension and Post-retirement Benefits - Pension and post-retirement pension benefits are provided for substantially all employees of WABCO, both in the United States and abroad through plans specific to each of WABCO's legal entities. Defined benefits pension plans are primarily concentrated in Germany, United Kingdom, Austria, Switzerland and Belgium. In the United States, certain employees receive post-retirement health care and life insurance benefits. The impact of Health Care Reform legislation in the United States is immaterial to the Company. All pension and post-retirement benefits are accounted for on an accrual basis using actuarial assumptions. WABCO measures the defined benefit and post-retirement plan assets and obligations for purposes of determining their funded status as of

the end of the Company's fiscal year, and recognizes changes in the funded status in comprehensive income in the year in which the changes occur. The costs of the benefits provided under these plans are included in the accompanying consolidated financial statements. See Note 14 for additional disclosures.

Fair Value of Financial Instruments - Financial instruments consist mainly of cash, short-term investments, accounts receivable, guaranteed notes receivable, investment in repurchase agreements, derivative instruments, pension plan assets, accounts payable, short-term borrowings and long-term debt.

Fair value is defined as the price that would be received for an asset, or paid to transfer a liability, in an orderly transaction between market participants at the measurement date. Valuation techniques maximize the use of observable inputs and minimize the use of unobservable inputs. When determining the fair value measurements for assets and liabilities, the Company considers the principal or most advantageous market in which we would transact and consider assumptions that market participants would use when pricing the asset or liability. The following summarizes the three levels of inputs required to measure fair value, of which the first two are considered observable and the third is considered unobservable:

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

Table of Contents

Level 2 - Observable inputs other than Level 1 prices, such as quoted prices for similar assets or liabilities; quoted prices in markets that are not active; or other inputs that are observable or can be corroborated by observable market data for substantially the full term of the assets or liabilities.

Level 3 - Unobservable inputs that are supported by little or no market activity and that are significant to the fair value of the assets or liabilities.

As of December 31, 2018 and 2017, the carrying amount of cash, accounts receivable, accounts payable and short-term borrowings approximated their fair-value due to their short-term nature. The carrying value of short-term investments, investment in repurchase agreements, derivative instruments and long-term debt was determined to approximate fair value based on observable Level 2 inputs. The fair value of short-term investments and investments in repurchase agreements are based on pricing sources for identical instruments in less active markets. The fair value of the guaranteed notes receivable is based on Level 2 inputs, including credit ratings and other criteria observable in the market. The fair value of derivative instruments is determined using model-based valuation techniques for which significant assumptions are observable in the market. The fair value of long-term debt is based upon observable Level 2 inputs regarding interest rates available to the Company at each reporting period.

Derivative Instruments and Hedging Activities - The Company enters into derivative instruments to manage its exposure to movements in currency exchange rates and recognizes derivative assets and liabilities at fair value on the consolidated balance sheets. The Company uses Euro-denominated debt and foreign currency contracts to partially hedge its net investment in Euro-denominated wholly-owned subsidiaries. Foreign currency gains and losses on Euro-denominated debt and foreign currency contracts designated and qualifying as partial hedges of a net investment are included in accumulated other comprehensive income on the consolidated balance sheets. The change in fair value of foreign currency contracts that are not designated as hedging instruments are recorded to the same line item as the hedged item, as non-operating expense/income in the consolidated statements of operations. See Note 19 for additional information on derivative instruments.

Research, Development and Engineering Expenses - Research, development and engineering costs include research activities, product development and product engineering, and are expensed as incurred. Research, development and engineering costs were approximately \$184.4 million in 2018, \$147.0 million in 2017 and \$135.2 million in 2016.

Business Combinations - The Company allocates the fair value of purchase consideration to the assets acquired, liabilities assumed and non-controlling interests in the acquiree generally based on their fair values at the acquisition date. The excess of the fair value of purchase consideration over the fair value of these assets acquired, liabilities assumed and non-controlling interests in the acquiree is recorded as goodwill. When determining the fair values of assets acquired, liabilities assumed and non-controlling interests in the acquiree, the Company makes significant estimates and assumptions, especially with respect to intangible assets. Critical estimates in valuing intangible assets include, but are not limited to, expected future cash flows, which includes consideration of future growth rates and margins, attrition rates, future changes in technology and brand awareness, loyalty and position, and discount rates. Fair value estimates are based on the assumptions the Company believes a market participant would use in pricing the asset or liability. Amounts recorded in a business combination may change during the measurement period, which is a period not to exceed one year from the date of acquisition, as additional information about conditions existing at the acquisition date becomes available.

Income Taxes - Deferred income taxes are determined on the liability method, and are recognized for all temporary differences between the tax basis of assets and liabilities and their reported amounts in the consolidated financial statements.

A tax position is a position in a previously filed tax return or a position expected to be taken in a future tax filing that is reflected in measuring current or deferred income tax assets and liabilities. Tax positions are recognized only when

it is more likely than not (likelihood of greater than 50%) based on technical merits, that the position will be sustained upon examination. Tax positions that meet the more likely than not threshold are measured using a probability weighted approach as the largest amount of tax benefit that is greater than 50% likely of being realized upon settlement. Tax positions are not permitted to be recognized, derecognized, or remeasured due to changes subsequent to the balance sheet date, but prior to the issuance of the financial statements. Rather, these changes are recorded in the period the change occurs with appropriate disclosure of such subsequent events, if significant.

We record a valuation allowance to reduce our deferred tax assets to the amount that we believe is more likely than not to be realized. We calculate this valuation allowance in accordance with the provisions of ASC 740, Income Taxes, which requires an assessment of both positive and negative evidence regarding the realizability of these deferred tax assets, when measuring the need for a valuation allowance. While we have considered future taxable income and ongoing prudent and feasible tax planning strategies in assessing the need for the valuation allowance, in the event we were to determine that we would not be able to realize all or part of our net deferred tax assets in the future, an adjustment to decrease the net deferred tax assets would be charged to income in the period such determination was made. Likewise, should we determine that we would be able

Table of Contents

to realize our deferred tax assets in the future in excess of our net recorded amount, an adjustment to increase the net deferred tax assets would increase income in the period such determination was made.

Earnings Per Share - Basic net income per share has been computed using the weighted average number of WABCO common shares outstanding. The average number of outstanding shares of common stock used in computing diluted net income per share includes weighted average incremental shares when the impact is not anti-dilutive.

The weighted average incremental shares represent the net amount of shares the Company would issue upon the assumed exercise of in-the-money stock options and vesting of restricted stock units (RSUs) and deferred stock units (DSUs) after assuming that the Company would use the proceeds from the exercises to repurchase stock. The weighted average incremental shares also includes the net amount of shares issuable for performance stock units (PSUs) at the end of the reporting period, if any at all, based on the number of shares issuable if the end of the period were the end of the vesting period. Anti-dilutive shares, if applicable, are excluded.

	Year Ended December 31,		
	2018	2017	2016
Weighted average incremental shares included in diluted EPS	215,611	235,877	286,078
Shares excluded due to anti-dilutive effect on earnings per share	70	1,626	472

Comprehensive Income - Comprehensive income consists of net income, foreign currency translation adjustments (including translation on intercompany transactions of a long-term investment nature and net investment hedges), pension and post-retirement liability adjustments, unrecognized gains or losses on pensions and post-retirement benefit plans, unrecognized gains or losses on investments prior to the adoption of ASU 2016-01 discussed in Note 3, and unrecognized gains or losses on hedges, and is presented in the accompanying consolidated statements of shareholders' equity and comprehensive income.

Stock-Based Compensation - WABCO measures and recognizes in its consolidated statements of operations the expense associated with all share-based payment awards made to employees and directors including stock options, RSUs, PSUs, DSUs and restricted stock grants based on their estimated fair value.

There were no stock options granted to employees during the years ended December 31, 2018, 2017 or 2016. RSUs granted to certain executives and employees and DSUs granted to non-management directors are time-based awards where the stock based compensation expense is measured based on the grant date fair value determined based on the number of shares granted and the quoted market price of the Company's common stock on the date of grant. Compensation expense for time-based RSU is amortized using graded vesting over the service period. The fair value of the PSUs is based on the grant date fair value of the number of awards expected to vest based on the Company's best estimate of the ultimate performance against respective targets.

All options granted prior to 2007 were adjusted upon the Distribution into two separate options, one relating to the Company's common stock and one relating to Trane common stock. This adjustment was made such that immediately following the Distribution (i) the number of shares relating to the Company options were equal to the number of shares of Company common stock that the option holder would have received in the Distribution had Trane options represented outstanding shares of Trane common stock, and (ii) the per share option exercise price of the original Trane stock option was proportionally allocated between the two types of stock options based upon the relative per share trading prices of the Company and Trane immediately following the Distribution. Thus, upon the Distribution, WABCO options were being held by both WABCO and Trane employees and Trane options continued to be held by WABCO employees. Options granted to WABCO employees in 2007 were equitably adjusted upon Distribution so as to relate solely to shares of the Company's common stock. These adjustments preserved the economic value of the awards immediately prior to the Distribution. All Company options issued as part of this adjustment and the Trane options were fully vested at this time. Further, for purposes of vesting and the post-termination exercise periods

applicable to such stock options, the Trane Inc. Management Development and Compensation Committee determined that continued employment with the Company will be viewed as continued employment with the issuer of the options.

NOTE 3. Recently Issued Accounting Standards

Recently Adopted Accounting Standards

In August 2018, the FASB issued ASU 2018-15 Intangibles - Goodwill and Other-Internal-Use Software which aligns the requirements for capitalizing implementation costs incurred in a hosting arrangement that is a service contract with the requirements for capitalizing implementation costs incurred to develop or obtain internal-use software. This guidance is effective for interim

Table of Contents

and annual reporting periods beginning after December 15, 2019, and early adoption is permitted, including adoption in any interim period. The Company adopted the provisions of ASU 2018-15 as of October 1, 2018 on a prospective basis. There was no material impact on the Company's consolidated financial statements resulting from the adoption of this guidance.

In May 2017, the FASB issued ASU 2017-09 Compensation-Stock Compensation, which provides guidance about which changes to the terms and conditions of a share-based payment award require an entity to apply modification accounting. ASU 2017-09 is effective for the interim and annual periods beginning after December 15, 2017. The Company adopted the provisions of ASU 2017-09 as of January 1, 2018. There was no material impact on the Company's consolidated financial statements resulting from the adoption of this guidance.

In March 2017, the FASB issued ASU 2017-07 Compensation-Retirement Benefits, in order to improve the presentation of net periodic pension cost and net periodic postretirement benefit cost in the statements of operations. Under ASU 2017-07, the service cost component of the net periodic benefit cost is disclosed in the same income statement line item as other employee compensation costs arising from services rendered during the period, and the other components are reported separately from the line item that includes the service cost and outside of any subtotal of operating income. ASU 2017-07 is effective for annual periods beginning after December 15, 2017 and early adoption is permitted. As previously disclosed in the Company's 2017 Annual Report on Form 10-K, the provisions of ASU 2017-07 were adopted as of January 1, 2017 and changes were applied retrospectively in the Company's consolidated statements of operations.

In January 2017, the FASB issued ASU 2017-01 Clarifying the Definition of a Business, which revises the definition of a business and provides guidance to assist entities with evaluating whether transactions should be accounted for as acquisitions (or disposals) of assets or businesses. The guidance is effective for the fiscal year, and interim periods within that fiscal year, beginning after December 15, 2017. The Company adopted the provisions of ASU 2017-01 as of January 1, 2018. There was no material impact on the Company's consolidated financial statements resulting from the adoption of this guidance.

In November 2016, the FASB issued ASU 2016-18 Restricted Cash, which requires amounts generally described as restricted cash and restricted cash equivalents be included with cash and cash equivalents when reconciling the total beginning and ending amounts for the periods shown on the statement of cash flows. ASU 2016-18 is effective for fiscal years beginning after December 15, 2017 (including interim periods within those periods) using a retrospective transition method to each period presented. The Company adopted the provisions of ASU 2016-18 as of January 1, 2018. There was no material impact on the Company's consolidated financial statements resulting from the adoption of this guidance.

In October 2016, the FASB issued ASU 2016-16 Intra-entity Transfer of Assets Other than Inventory, which requires the recognition of the income tax consequences of an intra-entity transfer of an asset, other than inventory, when the transfer occurs. ASU 2016-16 is effective for interim and annual periods beginning after December 15, 2017. The Company adopted the provisions of ASU 2016-16 as of January 1, 2018, resulting in an adjustment of the deferred tax assets to retained earnings of \$5.3 million.

In August 2016, the FASB issued ASU 2016-15 Statement of Cash Flows - Classification of Certain Cash Receipts and Cash Payments, which provides guidance on the presentation of certain cash receipts and cash payments in the statement of cash flows in order to reduce diversity in existing practice. ASU 2016-15 is effective for interim and annual periods beginning after December 15, 2017. The Company adopted the provisions of ASU 2016-15 as of January 1, 2018. There was no material impact on the Company's consolidated financial statements resulting from the adoption of this guidance.

In January 2016, the FASB issued ASU 2016-01, Recognition and Measurement of Financial Assets and Financial Liabilities, as amended by ASU 2018-03, Financial Instruments-Overall: Technical Corrections and Improvements, issued in February 2018, which among other changes in accounting and disclosure requirements, replaces the cost method of accounting for non-marketable equity securities with a model for recognizing impairments and observable price changes, and also eliminates the available-for-sale classification for marketable equity securities. Under the new guidance, other than when the consolidation or equity method of accounting is utilized, changes in the fair value of equity securities are to be recognized in earnings. The Company adopted the provisions of ASU 2016-01 and ASU 2018-03 as of January 1, 2018 resulting in a cumulative effect adjustment to retained earnings of \$0.1 million related to the unrealized gain on marketable equity securities.

In May 2014, the FASB issued ASC 606 which requires revenue to be recognized when a customer obtains control of promised goods and services at an amount that reflects the consideration the Company expects to receive in exchange for those goods and services. In addition, ASU 2014-09 requires certain additional disclosures around the nature, amount, timing, and uncertainty of revenues and cash flows arising from contracts with customers. The Company adopted ASC 606 as of January 1, 2018 using the modified retrospective method. The vast majority of sales continue to be recognized at a point in time as customer contracts did not meet the criteria in ASC 606 for over-time revenue

Table of Contents

recognition, specifically the over-time revenue recognition criteria of creating an asset with no alternative use and having an enforceable right to payment for progress towards completion. The complexity of certain contracts requires the Company to assess the criteria for over-time revenue recognition by jurisdiction. The adoption of ASC 606 did not impact the Company's accounting for reimbursements received from customers related to non-recurring product engineering activities. These activities will continue to be out-of-scope of ASC 606. Overall, the adoption of ASC 606 did not have a material impact on the Company's consolidated balance sheet, statement of operations and statement of cash flows for the year ended December 31, 2018. See Note 4 for disclosures required by ASC 606 and the updated accounting policy for revenue recognition.

Pending Adoptions of Recently Issued Accounting Standards

In August 2018, the FASB issued ASU 2018-14 Compensation - Retirement Benefits - Defined Benefit Plans - General (Topic 715-20): Disclosure Framework - Changes to the Disclosure Requirements for Defined Benefit Plans. This ASU modifies the disclosure requirements for employers that sponsor defined benefit pension or other postretirement plans. The ASU removes the requirements to disclose: amounts in accumulated other comprehensive income (loss) expected to be recognized as components of net periodic benefit cost over the next fiscal year; the amount and timing of plan assets expected to be returned to the employer; and the effects of a one-percentage point change in assumed health care cost trend rates. The ASU requires disclosure of an explanation of the reasons for significant gains and losses related to changes in the benefit obligation for the period. This guidance is effective for fiscal years, and interim periods within those fiscal years, beginning after December 15, 2020. Early adoption is permitted for all entities and the amendments in this update are required to be applied on a retrospective basis to all periods presented. The Company is currently evaluating this guidance to determine the impact on its disclosures.

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 ASU removes the requirement to disclose: the amount of and reasons for transfers between Level 1 and Level 2 of the fair value hierarchy; the policy for timing of transfers between levels; and the valuation processes for Level 3 fair value measurements. The ASU requires disclosure of changes in unrealized gains and losses for the period included in other comprehensive income (loss) for recurring Level 3 fair value measurements held at the end of the reporting period and the range and weighted average of significant unobservable inputs used to develop Level 3 fair value measurements. The amendments on changes in unrealized gains and losses, the range and weighted average of significant unobservable inputs used to develop Level 3 fair value measurements, and the narrative description of measurement uncertainty should be applied prospectively for only the most recent interim or annual period presented in the initial fiscal year of adoption. All other amendments should be applied retrospectively to all periods presented upon their effective date. This guidance is effective for fiscal years, and interim periods within those fiscal years, beginning after December 15, 2019. Early adoption is permitted. The Company is currently evaluating this guidance to determine the impact on its disclosures.

In June 2018, the FASB issued ASU 2018-07 Compensation-Stock Compensation (Topic 718), to simplify the accounting for share-based payments granted to nonemployees by aligning the accounting with the requirements for employee share-based compensation. ASU 2018-07 is effective for the Company beginning in fiscal 2019, including interim periods within that fiscal year. Early adoption is permitted but no earlier than a company's adoption of ASC 606. The Company does not expect the adoption of this guidance to have a material impact on the Company's consolidated financial statements.

In February 2018, the FASB issued ASU 2018-02 Reclassification of Certain Tax Effects from Accumulated Other Comprehensive Income. The standard provides financial statement preparers with an option to reclassify stranded tax effects within Accumulated Other Comprehensive Income (AOCI) to retained earnings in each period in which the effect of the change in the U.S. federal corporate income tax rate in the Tax Cuts and Jobs Act (or portion thereof) is recorded. ASU 2018-02 is effective for the Company beginning in fiscal 2019, including interim periods within that fiscal year. Early adoption is permitted. The Company does not expect the adoption of this guidance to have a material

impact on the Company's consolidated financial statements.

In August 2017, the FASB issued ASU 2017-12 Targeted Improvements to Accounting for Hedging Activities, which aims at improving the financial reporting of hedging relationships to better portray the economic results of an entity's risk management activities in its financial statements, by expanding and refining hedge accounting for both nonfinancial and financial risk components and aligning the recognition and presentation of the effects of the hedging instrument and the hedged item in the financial statements. ASU 2017-12 is effective for the Company beginning in fiscal 2019, including interim periods within that fiscal year. Early adoption is permitted. The Company does not expect the adoption of this guidance to have a material impact on the Company's consolidated financial statements.

In January 2017, the FASB issued ASU 2017-04 Intangibles - Goodwill and Other: Simplifying the Test for Goodwill Impairment. The standard eliminates the requirement to measure the implied fair value of goodwill by assigning the fair value of a reporting unit to all assets and liabilities within that unit ("the Step 2 test") from the goodwill impairment test. Instead, if the carrying amount of a reporting unit exceeds its fair value, an impairment loss is recognized in an amount equal to that excess,

Table of Contents

limited by the amount of goodwill in that reporting unit. The standard is effective for the Company beginning January 1, 2020 and will be applied to any annual or interim goodwill impairment assessment after that date. Early adoption is permitted for interim and annual impairment testing after January 1, 2017. The Company does not expect the adoption of this guidance to have a material impact on the Company's consolidated financial statements.

In June 2016, the FASB issued ASU No. 2016-13 Financial Instruments-Credit Losses to replace the incurred loss model for financial assets measured at amortized cost and require entities to measure all expected credit losses for financial assets held at the reporting date based on historical experience, current conditions, and reasonable and supportable forecasts. For trade and other receivables, loans and other financial instruments, the Company will be required to use a forward-looking expected loss model rather than the incurred loss model for recognizing credit losses which reflects losses that are probable. The new guidance is effective for fiscal years beginning after December 15, 2019. Early adoption is permitted for fiscal years, and interim periods within those fiscal years, beginning after December 15, 2018. The Company is currently evaluating the impact that the adoption of this guidance will have on its consolidated financial statements.

In February 2016, the FASB issued ASU 2016-02 Leases. ASU 2016-02 replaces ASC 840 Leases and is codified in ASC 842 Leases. ASU 2016-02 requires recognition of operating leases as lease assets and liabilities on the balance sheet, and disclosure of key information about leasing arrangements. ASU 2016-02 will be effective for the Company for the year ending December 31, 2019. The Company regularly enters into operating leases for which current guidance does not require recognition on the consolidated balance sheets. The Company will apply the modified retrospective transition method and elect the transition option to use the effective date of January 1, 2019 as the date of initial application. The Company will recognize the cumulative effect of the transition adjustment as of the effective date, and does not expect to provide any new lease disclosures for periods before the effective date. The Company elected the package of practical expedients and did not elect the use of the hindsight practical expedient. As a result, the Company will, in effect, continue to account for existing leases in accordance with ASC 840, throughout the entire lease term, including periods after the effective date, with the exception that the Company will apply the new balance sheet recognition guidance for operating leases and apply ASC 842 for remeasurements and modifications after the transition date.

Other key practical expedients elected by the Company (as a lessee) relate to maintaining leases with an initial term of 12 months or less off the balance sheet; not separating lease and non-lease components and the use of the portfolio approach to determine the incremental borrowing rate. For transition purposes, the Company will be using the incremental borrowing rate based on the total lease term and total minimum rental payments.

While the Company continues to finalize its transition adjustments, it anticipates that this standard will result in the recognition of right-of-use assets and leasing liabilities on its consolidated balance sheets of approximately \$95 million to \$120 million. The Company does not expect a material impact on its consolidated statement of operations.

In connection with the adoption of ASU 2016-02, the Company has assembled a cross-functional team supported by external consultants to evaluate the lease portfolio, systems, processes and policy change requirements. The Company analyzed service contracts not in the form of a lease and did identify certain contracts that met the definition of a lease under ASC 840 and ASC 842 which were included in the right-of-use assets and leasing liabilities estimates mentioned above. Further, the Company analyzed its part sales contracts with OEMs and part purchase contracts from suppliers and did not identify any material leases of production equipment. The Company has also selected a third-party software program to track, store and analyze its leases. The Company has implemented the software program for its leases and as such all material leases have been input into the system.

The Company does not expect the pending adoption of other recently issued accounting standards to have a material impact on its consolidated financial statements.

NOTE 4. Revenue from Contracts with Customers

The Company follows the guidance under ASC 606 effective January 1, 2018. Revenue under ASC 606 is measured based on consideration specified in a contract with a customer, and excludes any sales incentives and amounts collected on behalf of third parties. The Company recognizes revenue when it satisfies a performance obligation by transferring control over a product or service to a customer, which is typically at a point in time. Estimates of variable consideration are included in revenue to the extent that it is probable that a significant reversal of cumulative revenue will not occur once the uncertainty is resolved. See Note 2 for additional discussion of the revenue recognition accounting policy.

Disaggregation of Revenue

The following table presents product sales disaggregated by end-market:

68

Table of Contents

(Amount in millions)	Year Ended December 31,		
	2018	2017	2016
OEM ⁽¹⁾	\$2,886.9	\$2,511.8	\$2,101.0
Aftermarket	944.1	792.4	709.0
Total sales	\$3,831.0	\$3,304.2	\$2,810.0

⁽¹⁾ Sales for 2016 and until the third quarter of 2017 include sales to the Meritor WABCO joint venture, which was acquired in the fourth quarter of 2017, and consolidated from that date.

The following table presents product sales disaggregated by geography, based on the billing addresses of customers:

(Amount in millions)	Year Ended December 31,		
	2018	2017	2016
United States	\$859.0	\$579.6	\$399.9
Europe	1,860.7	1,705.3	1,509.2
Other ⁽¹⁾	1,111.3	1,019.3	900.9
Total sales	\$3,831.0	\$3,304.2	\$2,810.0

⁽¹⁾ Sales to other regions includes revenues primarily from Japan, China, Brazil and India.

Contract Balances

Timing of revenue recognition may differ from the timing of invoicing to customers. Contract assets primarily relate to the Company's rights to consideration for work completed but not billed at the reporting date. The contract assets are transferred to receivables when the rights become unconditional. Contract liabilities primarily relate to performance obligations to be satisfied in the future. Contract assets and contract liabilities were not material as of December 31, 2018.

Transaction Price Allocated to the Remaining Performance Obligations

The aggregate amount of the transaction price allocated to the performance obligations that are unsatisfied (or partially unsatisfied) as of December 31, 2018 was not material. The Company has elected to apply the practical expedient in paragraph ASC 606-10-50-14 and does not disclose information about remaining performance obligations that have original expected durations of one year or less.

NOTE 5. Accumulated Other Comprehensive Loss

The table below presents the changes in accumulated other comprehensive loss, net of taxes and noncontrolling interests, for the years ended December 31, 2018, 2017 and 2016:

Table of Contents

(Amount in millions)	Year Ended December 31,		
	2018	2017	2016
Foreign currency translation adjustments :			
Balance at beginning of period	\$(177.6)	\$(328.7)	\$(271.2)
Comprehensive (loss)/income before reclassification, net	(65.4)	152.9	(57.5)
Remeasurement of equity investments ⁽¹⁾	—	(1.8)	—
Balance at end of period ⁽²⁾	(243.0)	(177.6)	(328.7)
Loss on intra-entity transactions :			
Balance at beginning of period	(11.8)	(11.4)	(15.2)
Comprehensive (loss)/income before reclassification, net	(0.1)	(0.4)	3.8
Balance at end of period ⁽³⁾	(11.9)	(11.8)	(11.4)
Unrealized gains on investments:			
Balance at beginning of period	0.1	0.2	0.2
Adjustments for the period	(0.1)	(0.1)	—
Balance at end of period	—	0.1	0.2
Unrealized losses on hedges:			
Balance at beginning of period	(0.8)	(1.0)	(1.2)
Comprehensive income before reclassification, net	—	0.2	—
Amounts reclassified to earnings, net	0.8	—	0.2
Balance at end of period	—	(0.8)	(1.0)
Pension and post-retirement plans:			
Balance at beginning of period	(274.4)	(236.4)	(220.5)
Comprehensive loss before reclassification, net	(12.2)	(56.2)	(26.5)
Amounts reclassified to earnings, net ⁽⁴⁾	17.5	18.2	10.6
Balance at end of period	(269.1)	(274.4)	(236.4)
Accumulated other comprehensive loss at end of period	\$(524.0)	\$(464.5)	\$(577.3)

⁽¹⁾ Consists of \$1.8 million associated with the foreign currency translation adjustment reclassified to gain on remeasurement of equity method investment in the consolidated statements of operations upon the Company's acquisition of the remaining interests in WABCO Automotive South Africa. See Note 22 for further discussion.

⁽²⁾ Includes losses of \$10.8 million and \$27.6 million as of December 31, 2018 and 2017, respectively, net of taxes of \$10.7 million and \$15.4 million, respectively, related to foreign currency gains and losses on Euro-denominated debt and foreign currency contracts designated and qualifying as partial hedges of a net investment.

⁽³⁾ Relates to intra-entity foreign currency transactions that are of a long term investment nature, when the entities to the transaction are consolidated, combined or accounted for by the equity method in the Company's financial statements.

⁽⁴⁾ Consists of amortization of prior service cost and actuarial losses that are included as a component of pension expenses within other non-operating expenses. The amounts reclassified to earnings are recorded net of tax of \$7.0 million, \$7.9 million and \$4.5 million for the years ended December 31, 2018, 2017 and 2016, respectively. See Note 14 for further discussion.

Table of Contents

NOTE 6. Streamlining

The Company accounts for employee-related streamlining charges as either a one-time benefit arrangement or an ongoing benefit arrangement as appropriate. From time to time the Company also has streamlining charges that are not related to employees, such as facility exit costs.

In the third quarter of 2015, the Company announced proposals to cease manufacturing at two production facilities to preserve the Company's global competitiveness for certain mechanical products. These proposals resulted in a workforce reduction of 316 positions and included a smaller program initiated in the fourth quarter of 2014 (the 2014/2015 Program). As of December 31, 2018, production at both facilities has been transferred to other facilities within the Company's globally integrated supply chain. The cumulative costs incurred as of December 31, 2018 related to the 2014/2015 Program was \$65.2 million, which approximates the total expected costs to be incurred under this program.

Based on the Company's efforts to maintain its global footprint, the Company has periodically entered into other streamlining programs as deemed necessary which may include workforce reductions, site closures or relocations and the rotation of manufacturing footprint to low cost regions (Other Programs).

The following is a summary of changes in the Company's streamlining program liabilities for the years ended December 31, 2018 and 2017.

(Amounts in millions)	Year Ended	
	2018	2017
2014 / 2015 Program		
Balance at beginning of period	\$ 16.8	\$ 27.8
Charges	2.2	1.7
Payments	(12.5)	(15.6)
Foreign exchange effects	(0.1)	2.9
Balance at end of period	\$ 6.4	\$ 16.8
Other Programs		
Balance at beginning of period	\$ 26.9	\$ 23.4
Charges	11.8	10.3
Payments	(17.8)	(10.0)
Foreign exchange effects	(0.9)	3.2
Balance at end of period	\$ 20.0	\$ 26.9
Total streamlining liability	\$ 26.4	\$ 43.7

As of December 31, 2018 and December 31, 2017, the balance included in other accrued liabilities (current) amounted to \$14.8 million and \$24.2 million, respectively, while the balance included in other liabilities (non-current) amounted to \$11.6 million and \$19.5 million, respectively.

The following is a summary of the streamlining costs recorded for the years ended December 31, 2018, 2017 and 2016 :

Charges for Year Ended December 31, 2018	Charges for Year Ended December 31, 2017	Charges for Year Ended December 31, 2016
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(Amounts in millions)	2018/2017		2017/2016		2016/2015	
	Program	Other Programs	Program	Other Programs	Program	Other Programs
Employee-related charges – cost of sales	\$ 0.1	\$ 3.1	\$ (1.0)	\$ 8.1	\$ 4.0	\$ 6.9
Employee-related charges – selling and administrative	0.7	6.8	2.3	2.2	(0.2)	3.2
Asset write-offs	—	—	—	—	0.6	—
Other streamlining charges	1.4	1.9	0.4	—	1.7	0.2
Total program costs	\$ 2.2	\$ 11.8	\$ 1.7	\$ 10.3	\$ 6.1	\$ 10.3

Streamlining costs incurred for Other Programs include charges related to footprint relocations and headcount reductions. For the years ended December 31, 2018, 2017 and 2016, the Company recorded \$8.7 million, \$5.9 million and \$6.8 million,

Table of Contents

respectively, related to headcount reductions primarily driven by its continued cost optimization efforts. The Company also recorded restructuring charges of \$3.1 million, \$4.4 million and \$3.5 million for the years ended December 31, 2018, 2017 and 2016, respectively, related to footprint relocations including the anticipated move of its corporate headquarters and the transfer of certain product lines and business processes to best cost countries including India and Poland.

NOTE 7. Capital Stock

The following is a summary of common stock issued, treasury stock and common stock outstanding for the years ending December 31, 2018, 2017 and 2016.

	Number of Shares of Common Stock		
	Issued	Treasury Stock	Outstanding
Balance, December 31, 2015	78,500,084	(21,740,518)	56,759,566
Shares issued upon exercise of stock options	87,047	16,400	103,447
Shares issued upon vesting of RSUs	38,723	9,288	48,011
Shares issued upon vesting of PSUs	67,219	17,675	84,894
Shares issued for DSUs	7,100	—	7,100
Shares issued for stock awards	1,100	—	1,100
Shares purchased for treasury	—	(2,512,200)	(2,512,200)
Balance, December 31, 2016	78,701,273	(24,209,355)	54,491,918
Shares issued upon exercise of stock options	161,687	28,840	190,527
Shares issued upon vesting of RSUs	44,419	3,998	48,417
Shares issued upon vesting of PSUs	24,525	7,175	31,700
Shares issued for DSUs	5,924	—	5,924
Shares purchased for treasury	—	(1,033,000)	(1,033,000)
Balance, December 31, 2017	78,937,828	(25,202,342)	53,735,486
Shares issued upon exercise of stock options	14,964	12,999	27,963
Shares issued upon vesting of RSUs	36,126	8,447	44,573
Shares issued upon vesting of PSUs	21,515	6,009	27,524
Shares issued for DSUs	7,833	—	7,833
Shares purchased for treasury	—	(2,478,454)	(2,478,454)
Balance, December 31, 2018	79,018,266	(27,653,341)	51,364,925

The Company accounts for purchases of treasury stock under the cost method with the costs of such share purchases reflected in treasury stock in the accompanying consolidated balance sheets. Upon the exercise or vesting of an equity incentive award, the Company may reissue shares from treasury stock or may elect to issue new shares. When treasury shares are reissued, they are recorded at the average cost of the treasury shares acquired since the inception of the share buy back programs, net of shares previously reissued. Gains on the reissuance of treasury shares are recorded as capital surplus. Losses on the reissuance of treasury shares are charged to capital surplus to the extent of previous gains recorded, and to retained earnings for any losses in excess. The Company has reissued a total of 110,831 shares from treasury stock related to certain employee vestings under its equity incentive program.

On December 2, 2016, the Board of Directors authorized the repurchase of shares of common stock for an amount of \$600.0 million through December 31, 2018. During the year ended December 31, 2018, the Company purchased 2,478,454 shares for \$300.0 million. As of December 31, 2018, the Company had no availability remaining under this repurchase authorization.

On December 7, 2018, the Board of Directors authorized the repurchase of shares of common stock for an amount of \$600.0 million from January 1, 2019 through December 31, 2020.

NOTE 8. Stock-Based Compensation

The Company's Certificate of Incorporation authorizes the Company to issue up to 400,000,000 shares of common stock, par value \$0.01 per share and 4,000,000 shares of preferred stock, par value \$0.01 per share.

72

Table of Contents

The Company paid no dividends on its common stock in 2018, 2017 and 2016.

The issuance of stock-based compensation is intended to promote long-term financial success and increase shareholder value by providing the Company with greater flexibility to implement the optimal mix of annual and long-term cash, equity and equity-based incentives. It is also intended to align the interests of employees with the interests of shareholders by affording them certain opportunities to acquire an interest in our stock. The Company believes that these incentives and opportunities will encourage its executives and other key employees to continue employment, by providing them with a competitive level of compensation that varies based on performance.

In May 2018, the existing Amended and Restated WABCO Holdings Inc. 2009 Omnibus Incentive Plan (2009 Restated Omnibus Plan), previously adopted on May 28, 2009, was further amended and restated and was approved by the shareholders at the Annual Meeting of Shareholders. The Company also maintains the 2007 Omnibus Incentive Plan for awards granted prior to the establishment of the 2009 Restated Omnibus Plan. The term of the 2009 Restated Omnibus Plan extends through May 2028. The 2009 Restated Omnibus Plan further places restrictions on vesting for time-based equity incentive awards and places annual limits on incentive awards granted to any single participant. During a calendar year, no participant may receive annual and long-term cash awards that, in the aggregate, exceed \$10,000,000. In addition, no participant shall be granted stock options, stock appreciation rights, or both with respect to more than 750,000 shares during any calendar year. No individual shall be granted restricted shares or restricted stock units, with respect to more than 200,000 shares or units as the case may be during any calendar year. If an award granted under the 2009 Restated Omnibus Plan expires or becomes unexercisable without having been exercised in full, or, with respect to full-value incentive awards, is forfeited to or repurchased by the Company, these shares will become available for future grant or sale under the 2009 Restated Omnibus Plan. Shares withheld by the Company to satisfy tax withholding obligations on any equity incentive award would be fully counted against the share authorization.

As of December 31, 2018, a total of 407,911 stock options, RSUs, PSUs and DSUs were outstanding and there were 2,669,703 shares remaining available for grant under the 2009 Restated Omnibus Plan.

The PSUs granted as part of the Company's equity incentive awards vest at levels ranging from none to 200% of the number of granted PSUs depending upon the achievement of three-year cumulative earnings per share goals as approved by the Compensation, Nominating and Governance Committee of the Board of Directors. The Company assesses the expected achievement levels at the end of each reporting period. As of December 31, 2018, the Company believes it is probable that the performance conditions will be met and has accrued for the compensation expense accordingly.

The DSUs are granted to our non-management directors as part of the equity portion of their annual retainer and are fully vested at grant. Each DSU provides the right to the issuance of a share of our common stock, within ten days after the earlier of the director's death or disability, the 13-month anniversary of the grant date or the director's separation from service. Each director may also elect within a month after the grant date to defer the receipt of shares for five or more years. No election can be made to accelerate the issuance of stock from a DSU.

The Company records stock-based compensation based on the estimated fair value of the award at the grant date and is recognized as an expense in the consolidated statements of operations over the requisite service period. The estimated fair value of the award is based on the closing market price of the Company's common stock on the date of grant. For PSUs, the grant date fair value of the number of awards expected to vest based on the Company's best estimate of ultimate performance against the respective targets is recognized as compensation expense on a straight-line basis over the requisite vesting period of the awards.

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Total stock-based compensation cost recognized in selling and administrative expenses during the years ended December 31, 2018, 2017 and 2016 was as follows:

(Amounts in millions)	Year Ended December 31,		
	2018	2017	2016
Stock-based compensation	\$20.0	\$16.4	\$13.1

The following tables summarize the stock options, RSUs, PSUs, DSUs and stock awards activity for each of the periods presented:

73

Table of Contents

	Underlying Shares			Weighted
	WABCO	Trane	Total	Average
	employees	employees		Exercise
				Price
Options Outstanding December 31, 2015	296,032	95,587	391,619	\$ 43.37
Options Granted	—	—	—	\$ —
Options Exercised	(49,466)	(54,494)	(103,960)	\$ 38.70
Options Forfeited	—	(128)	(128)	\$ 32.38
Options Outstanding December 31, 2016	246,566	40,965	287,531	\$ 45.07
Options Granted	—	—	—	\$ —
Options Exercised	(152,419)	(40,882)	(193,301)	\$ 50.90
Options Forfeited	(394)	(83)	(477)	\$ 44.15
Options Outstanding December 31, 2017	93,753	—	93,753	\$ 33.04
Options Granted	—	—	—	\$ —
Options Exercised	(29,081)	—	(29,081)	\$ 25.50
Options Forfeited	(1,080)	—	(1,080)	\$ 58.85
Options Outstanding December 31, 2018	63,592	—	63,592	\$ 36.05
Exercisable at December 31, 2018	63,592	—	63,592	\$ 36.05

	Underlying	Weighted
	Shares	Average
		Grant
		Date Fair
		Value
RSUs Outstanding December 31, 2015	153,087	\$ 101.91
RSUs Granted	94,033	\$ 92.59
RSUs Vested	(73,358)	\$ 91.60
RSUs Forfeited	(13,452)	\$ 100.55
RSUs Outstanding December 31, 2016	160,310	\$ 101.27
RSUs Granted	81,116	\$ 118.72
RSUs Vested	(75,887)	\$ 102.67
RSUs Forfeited	(13,358)	\$ 106.32
RSUs Outstanding December 31, 2017	152,181	\$ 109.43
RSUs Granted	68,908	\$ 137.04
RSUs Vested	(66,979)	\$ 107.40
RSUs Forfeited	(7,892)	\$ 120.99
RSUs Outstanding December 31, 2018	146,218	\$ 122.74

Table of Contents

	Underlying	Weighted
	Shares	Average
		Grant
		Date Fair
		Value
PSUs Outstanding December 31, 2015	172,712	\$ 93.31
PSUs Granted	152,010	\$ 82.76
PSUs Vested	(126,840)	\$ 68.10
PSUs Forfeited	(22,192)	\$ 102.46
PSUs Outstanding December 31, 2016	175,690	\$ 101.31
PSUs Granted	72,163	\$ 115.85
PSUs Vested	(48,357)	\$ 103.41
PSUs Forfeited	(25,589)	\$ 103.14
PSUs Outstanding December 31, 2017	173,907	\$ 106.48
PSUs Granted	57,110	\$ 139.93
PSUs Vested	(41,436)	\$ 115.88
PSUs Forfeited	(9,766)	\$ 110.74
PSUs Outstanding December 31, 2018	179,815	\$ 114.70

	Underlying	Weighted
	Shares	Average
		Grant
		Date Fair
		Value
DSUs Outstanding December 31, 2015	14,989	\$ 86.35
DSUs Granted	9,194	\$ 105.52
DSUs Issued	(7,100)	\$ 88.10
DSUs Outstanding December 31, 2016	17,083	\$ 95.93
DSUs Granted	7,752	\$ 118.75
DSUs Issued	(5,924)	\$ 105.51
DSUs Outstanding December 31, 2017	18,911	\$ 102.28
DSUs Granted	7,208	\$ 127.77
DSUs Issued	(7,833)	\$ 109.85
DSUs Outstanding December 31, 2018	18,286	\$ 109.09

	Shares	Weighted
		Average
		Grant
		Date Fair
		Value
Stock Awards granted:		
Year ended December 31, 2016	1,100	\$ 107.47
Year ended December 31, 2017	—	\$ —
Year ended December 31, 2018	—	\$ —

The table below shows the vesting schedule of the RSUs granted for each of the periods presented:

	Vesting Schedule Equal installments over 3 years	After 3 years	Total
RSUs granted in 2016	86,123	7,910	94,033
RSUs granted in 2017	69,253	11,863	81,116
RSUs granted in 2018	65,190	3,718	68,908

As discussed above, the PSUs granted in each of the years ended December 31, 2018, 2017 and 2016 vest, if at all, and at levels depending upon, the achievement of certain three-year cumulative earnings per share goals. To the extent that the PSUs

Table of Contents

vest at a level greater (or lesser) than 100% as a result of the final performance achievement, the Company considers the increment (or reduction) in shares vested as additional grants (or forfeitures) in the year of vesting.

The DSUs granted in each of the years ended December 31, 2018, 2017 and 2016 vest immediately upon grant.

As of December 31, 2018, all outstanding stock option awards were fully vested and had a total aggregate intrinsic value of \$4.5 million. Aggregate intrinsic value is calculated by subtracting the exercise price of the option from the closing price of the Company's common stock on December 31, 2018, multiplied by the number of shares per each option.

The total intrinsic value of options exercised was \$3.1 million, \$13.2 million and \$6.4 million for the years ended December 31, 2018, 2017 and 2016, respectively. Total fair value of shares vested was \$15.9 million, \$15.1 million and \$19.3 million for the years ended December 31, 2018, 2017 and 2016 respectively. The 326,033 of unvested RSUs and PSUs as of December 31, 2018 will result in the recognition of \$21.8 million of compensation cost to be recognized over a weighted average period of 2.0 years.

The contractual life of all options is 10.0 years. The weighted average remaining contractual life of options outstanding as of December 31, 2018 was 1.3 years. The tax benefit from stock options exercised during the period amounted to \$1.0 million and \$2.2 million for the year ended December 31, 2018 and 2017, respectively. It was immaterial for the year ended December 31, 2016.

NOTE 9. Other Operating and Non-Operating (Income) and Expense, Net

The components of other operating and non-operating (income) and expense, net, are as follow:

(Amounts in millions)	Year Ended December 31,		
	2018	2017	2016
Other operating (income)/expense, net			
Indemnification costs ⁽¹⁾	\$0.7	\$16.1	\$—
Bank charges	1.3	1.1	1.6
Miscellaneous taxes	5.0	6.1	4.2
Release of contingent consideration ⁽²⁾	(3.1)	—	—
Government subsidy	(2.8)	(1.6)	—
Other income	(1.5)	(1.1)	(0.5)
	\$ (0.4)	\$20.6	\$5.3
Other non-operating expense, net			
Pension and post-retirement benefit costs	\$36.1	\$36.0	\$26.0
Guaranteed notes receivable discount fees	2.2	2.3	0.4
Foreign exchange gains, net	(1.8)	(1.2)	(1.5)
Impairment of non-marketable equity securities ⁽³⁾	5.5	—	—
Loss on debt extinguishment ⁽⁴⁾	2.6	—	—
Other (income)/expense, net	(2.3)	0.1	—
	\$42.3	\$37.2	\$24.9

(1)

Indemnification costs in 2017 included expenses recorded primarily related to tax claims in Brazil. See Note 16 for additional information.

- (2) Relates to the release of contingent consideration on the 2016 acquisition of Laydon Composites Ltd.
- (3) Non-marketable equity securities are evaluated for impairment each reporting period and adjusted to their estimated fair value using the measurement alternative, namely cost less impairment and adjusted for observable price changes for identical or similar investments of the investee. See Note 21 for additional information.
- (4) Loss on debt extinguishment resulting from the prepayment of the Senior USD Notes. See Note 15 for additional information.

Table of Contents

NOTE 10. Inventories, Net

The components of inventories are as follows:

Year Ended		
December 31,		
(Amounts		
in	2018	2017
millions)		
Finished products	\$185.2	\$177.8
Products in process	15.3	20.8
Raw materials	137.1	142.6
Inventories gross	337.6	341.2
Less: inventory reserve	18.5	19.8
Inventories, net	\$319.1	\$321.4

Inventory costs are primarily comprised of direct material and labor costs, as well as material overhead such as inbound freight and custom and excise duties. Prior year balances have been reclassified to conform to the current year presentation, primarily by separately disclosing the inventory reserve. For inventories valued using the LIFO method, the current replacement cost approximated the LIFO carrying cost for 2018 and 2017. Reserves for LIFO amounted to \$1.3 million for the years ended December 31, 2018 and 2017.

Inventory reserves amounted to \$18.5 million and \$19.8 million for the years ended December 31, 2018 and 2017, respectively. The decrease in the reserve balance for 2018 was primarily attributable to foreign exchange impacts (\$0.8 million), while the increase in the reserve balance for 2017 was mainly driven by acquisitions and foreign exchange impacts (\$2.3 million and \$1.8 million, respectively).

NOTE 11. Property, Plant and Equipment, Net

The components of property, plant and equipment, at cost, are as follows:

	Year Ended	
	December 31,	
(Amounts in millions)	2018	2017
Land	\$26.8	\$26.4
Buildings	222.9	187.0

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Machinery and equipment	1,088.4	1,057.0
Improvements in progress	38.7	47.9
Gross property, plant and equipment	1,376.8	1,318.3
Less: accumulated depreciation	823.2	796.0
Property, plant and equipment, net	\$553.6	\$522.3

Depreciation expense, including expense related to assets under capital leases, for the years ended December 31, 2018, 2017 and 2016 was \$95.8 million, \$84.8 million and \$76.0 million, respectively.

Property, plant and equipment, net includes tooling investments of \$80.0 million and \$70.2 million for the years ended December 31, 2018 and 2017, respectively.

NOTE 12. Guaranteed Notes Receivable

The Company's receivables available for financing include sales to reputable state owned and public enterprises in China that are settled through bankers acceptance drafts which are registered and endorsed to the Company. These notes receivable are fully guaranteed by banks and generally have contractual maturities of six months or less, but the ultimate recourse remains against the original trade debtor. These guaranteed notes are available for discounting with banking institutions in China or transferring to suppliers to settle liabilities. The total amount of notes receivable discounted or transferred for the years ended December 31, 2018, 2017 and 2016 was \$281.6 million, \$261.8 million and \$114.3 million, respectively. Expenses related to discounting these notes amounted to \$2.2 million, \$2.3 million and \$0.4 million for the years ended December 31, 2018, 2017 and 2016, respectively, which are included in other non-operating expense, net. The fair value of these guaranteed notes receivable is determined based

Table of Contents

on Level 2 inputs including credit ratings and other criteria observable in the market. The fair value of these notes equal their carrying amounts of \$44.1 million and 39.7 million as of December 31, 2018 and 2017, respectively.

The Company monitors the credit quality of both the drawers of the draft and guarantors on a monthly basis by reviewing various factors such as payment history, level of state involvement in the institution, size, national importance as well as current economic conditions in China. Since the Company has not experienced any historical losses nor is the Company expecting future credit losses based on a review of the various credit quality indicators described above, we have not established a loss provision against these receivables as of December 31, 2018 or 2017.

NOTE 13. Goodwill and Intangible Assets

The following table summarizes the changes in the carrying amount of goodwill for the years ended December 31, 2018 and 2017.

(Amounts in millions)	Year Ended	
	December 31,	
	2018	2017
Balance of goodwill, beginning of year	\$834.7	\$399.2
Acquisitions ⁽¹⁾	(3.2)	385.9
Foreign exchange translation	(22.1)	49.6
Balance of goodwill, end of year	\$809.4	\$834.7

⁽¹⁾ Includes measurement period adjustments in connection with the 2017 acquisitions. See Note 22 for further discussion.

Intangible assets for the years ended December 31, 2018 and 2017 are as follow:

(Amounts in millions)	Year ended December 31,			2017		
	2018			2017		
	Gross carrying amount	Accumulated amortization	Net Book Value	Gross carrying amount	Accumulated amortization	Net Book Value
Capitalized software	\$120.5	\$ (92.0)	\$28.5	\$120.3	\$ (87.6)	\$32.7
Customer relationships	161.9	(38.0)	123.9	164.7	(27.6)	137.1
Trade names	81.2	(4.8)	76.4	81.4	(2.7)	78.7
Other intangible assets	58.7	(40.9)	17.8	69.0	(50.9)	18.1
Intangible assets, net	\$422.3	\$ (175.7)	\$246.6	\$435.4	\$ (168.8)	\$266.6

Amortization expense for intangible assets was \$28.9 million, \$22.3 million and \$22.0 million for the years ended December 31, 2018, 2017 and 2016. The Company expects to incur approximately \$30.0 million of amortization expense for each of the next five fiscal years excluding any amortization that may arise from future acquisitions.

NOTE 14. Pension and Post-retirement Benefits

WABCO employees participate in a number of benefit plans. The plans include a 401(k) savings plan for the Company's U.S. salaried and hourly employees, which is an individual-account defined contribution plan. WABCO employees in certain countries including Germany, the United Kingdom and Switzerland, participate in defined benefit plans or retiree medical plans sponsored by local WABCO legal entities. WABCO has also assumed

responsibility for certain retiree medical plans in the United States and a pension plan in Germany relating to former employees of Trane's Bath & Kitchen division. In addition, in 2016, certain legislative changes in Belgium to employee benefit plans required that these plans be accounted for as defined benefit plans.

Benefits under defined benefit pension plans on a worldwide basis are generally based on years of service and either employee compensation during the last years of employment or negotiated benefit levels. WABCO recognizes in its consolidated balance sheets an asset for a defined benefit post-retirement plan's overfunded status or a liability for a plan's underfunded status. The long-term liability of \$716.0 million on the consolidated balance sheet as of December 31, 2018 is primarily due to the underfunded plan in Germany, where the majority of the Company's prior and current employees are based.

Table of Contents

The following table provides a reconciliation of the changes in pension and retirement health and life insurance benefit obligations and fair value of assets for the years ending December 31, 2018 and 2017, and a statement of the funded status as of December 31, 2018 and 2017.

(Amounts in millions)	2018		2017	
	Health & Life Ins. Benefits	Pension Benefits	Health & Life Ins. Benefits	Pension Benefits
Reconciliation of benefit obligation:				
Obligation at beginning of year	\$ 12.4	\$ 889.7	\$ 11.8	\$ 762.0
Service cost	0.8	25.3	0.7	20.8
Interest cost	0.5	16.4	0.5	14.5
Participant contributions	—	0.4	—	0.3
Actuarial (gain)/loss	(0.7)	24.4	0.7	20.9
Plan amendments ⁽¹⁾	—	3.6	—	—
Benefit payments	(1.1)	(28.6)	(1.3)	(29.6)
Foreign exchange effects	(0.1)	(40.1)	—	99.2
Other	—	(1.5)	—	1.6
Obligation at end of year	\$ 11.8	\$ 889.6	\$ 12.4	\$ 889.7

⁽¹⁾ Plan amendments relate to the UK court ruling in 2018 relating to the Guaranteed Minimum Pension (GMP) equalization.

(Amounts in millions)	2018		2017	
	Health & Life Ins. Benefits	Pension Benefits	Health & Life Ins. Benefits	Pension Benefits
Reconciliation of fair value of plan assets:				
Fair value of plan assets at beginning of year	\$—	\$ 180.4	\$—	\$ 177.0
Actual loss on assets ⁽²⁾	—	(2.2)	—	(8.5)
Employer contributions	1.1	24.8	1.3	23.4
Participant contributions	—	0.4	—	0.3
Benefit payments	(1.1)	(28.4)	(1.3)	(29.6)
Foreign exchange effects	—	(8.6)	—	15.9
Other	—	(1.7)	—	1.9
Fair value of plan assets at end of year	\$—	\$ 164.7	\$—	\$ 180.4
Funded status at December 31	\$(11.8)	\$(724.9)	\$(12.4)	\$(709.3)
Amounts recognized in the balance sheet:				
Noncurrent assets (included in other assets)	\$—	\$—	\$—	\$—
Current liabilities (included in accrued payroll)	(0.9)	(19.5)	(0.9)	(20.1)
Noncurrent liabilities	(10.9)	(705.4)	(11.5)	(689.2)
Net amounts recognized in balance sheet:	\$(11.8)	\$(724.9)	\$(12.4)	\$(709.3)
Cumulative amounts recognized in other comprehensive income consist of:				
Prior service cost	\$—	\$ 4.4	\$ 0.1	\$ 1.1

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Net actuarial loss	8.3	369.4	9.5	378.0
Total (before tax effects)	\$8.3	\$373.8	\$9.6	\$379.1

(2) Actual loss on assets for the year ended December 31, 2017 was primarily driven by a revaluation of assets managed under insurance contracts as a result of updated census data.

79

Table of Contents

\$25.0 million of the amount in other comprehensive income as of December 31, 2018 is expected to be recognized as pension and post-retirement costs in 2019.

The following table provides a summary of pension plans with projected benefit obligations and accumulated benefit obligations in excess of plan assets as of December 31:

(Amounts in millions)	2018	2017
For plans with projected benefit obligations in excess of plan assets:		
Projected benefit obligation	\$823.3	\$880.8
Fair value of plan assets	101.3	177.1
For plans with accumulated benefit obligations in excess of plan assets:		
Accumulated benefit obligation	\$633.1	\$628.2
Fair value of plan assets	35.6	38.1

Total pension and post-retirement costs are shown below:

(Amounts in millions)	Year Ended		
	December 31,		
	2018	2017	2016
Foreign pensions	\$60.4	\$55.8	\$42.3
Health & Life insurance benefits	1.8	1.7	1.9
Total pension and post-retirement benefit costs	\$62.2	\$57.5	\$44.2

The components of pension and post-retirement costs are broken out in the tables below:

Pension Benefit Costs

(Amounts in millions)	Year Ended December		
	31,		
	2018	2017	2016
Service cost - benefits earned during period	\$25.3	\$20.8	\$17.1
Interest cost on projected benefit obligation	16.4	14.5	17.4
Less: assumed return on plan assets	(5.4)	(5.2)	(6.7)
Amortization of prior service cost	0.1	0.1	0.1
Amortization of net loss	24.7	26.1	14.4
Gain on curtailment	(0.7)	(0.5)	—
Pension benefit costs	\$60.4	\$55.8	\$42.3

Other Post-Retirement Benefit Costs

(Amounts in millions)	Year Ended		
	December 31,		
	2018	2017	2016
Service cost - benefits earned during period	\$0.8	\$0.7	\$1.0
Interest cost on projected benefit obligation	0.5	0.5	0.4
Amortization of net loss	0.5	0.5	0.5

Other post-retirement benefit costs	\$1.8	\$1.7	\$1.9
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For plans where the total unrecognized net gain or loss exceeds the greater of 10% of the projected benefit obligation or 10% of the plan assets, the excess is amortized on a straight-line basis over the average expected future working lifetime of the active participants of that plan. For plans without active participants, the amortization period is the average life expectancy of plan participants.

80

Table of Contents

Major assumptions used in determining the benefit obligation and net cost for post-retirement plans are presented below as weighted averages:

	2018 Health & Life Ins. Benefits	2018 Foreign Pension Plans	2017 Health & Life Ins. Benefits	2017 Foreign Pension Plans
Benefit Obligation at December 31				
Discount rate	4.30 %	1.90 %	3.55 %	1.87 %
Salary growth	N/A	3.71 %	N/A	2.85 %
Net Periodic Pension Cost for the year				
Discount rate	3.55 %	1.87 %	4.00 %	1.79 %
Salary growth	N/A	2.85 %	N/A	3.03 %
Expected return on plan assets	N/A	2.40 %	N/A	2.75 %

The discount rate assumption in this chart changed from 2017 to 2018, resulting in a change in the pension benefit obligation. In the chart above that reconciles the change in benefit obligations for the year, the impact of the discount rate change is included in the actuarial loss/(gain) line item. The discount rate noted for foreign pension plans is a weighted average rate based on each of the applicable country's rates.

The assumed rate of return is a long-term investment return that takes into account the classes of assets held by the defined benefit plans and expected returns for each class of assets. Return expectations reflect forward-looking analysis as well as historical experience.

WABCO's asset management strategy focuses on maintaining a diversified portfolio using various classes of assets to generate attractive returns while managing risk. The Company periodically reviews its target asset allocations for a given plan to ensure it aligns with the asset management strategy. In determining the target asset allocation for a given plan, consideration is given to the nature of its liabilities, and portfolios are periodically rebalanced with reference to the target level.

Asset Allocation	2018	2017	2018 Target	2017 Target
Debt securities (issued by non-U.S. government agencies)	6 %	9 %	12 %	12 %
Mutual funds	32 %	29 %	27 %	27 %
Insurance contracts	47 %	47 %	47 %	47 %
Investments in collective foundations	14 %	15 %	14 %	14 %
Cash	1 %	1 %	— %	— %

All assets are measured at the current fair value. The fair value of the Company's plan assets as of December 31, 2018 and 2017, for each class of assets, is as follows:

(Amounts in millions)	December 31, 2018	Fair Value Hierarchy		
		Level 1	Level 2	Level 3
Debt securities (issued by non-U.S. government agencies)	\$ 8.9	8.9	\$—	\$—
Mutual funds	53.4	—	53.4	—
Insurance contracts	77.3	—	—	77.3
Investments in collective foundations	23.8	—	—	23.8

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Cash	1.3	1.3	—	—
Total plan assets	\$ 164.7	\$10.2	\$53.4	\$101.1

81

Table of Contents

(Amounts in millions)	December 31, 2017	Fair Value Hierarchy		
		Level 1	Level 2	Level 3
Debt securities (issued by non-U.S. government agencies)	\$ 15.5	\$15.5	\$—	\$—
Mutual funds	52.3	—	52.3	—
Insurance contracts	84.4	—	—	84.4
Investments in collective foundations	27.1	—	—	27.1
Cash	1.1	1.1	—	—
Total plan assets	\$ 180.4	\$16.6	\$52.3	\$111.5

The reconciliation of the fair value of the plan assets measured using significant unobservable (Level 3) inputs for the years ended December 31, 2018 and 2017 was as follows:

(Amounts in millions)	2018	2017
Beginning balance	\$111.5	\$115.0
Actual loss on assets ⁽¹⁾	(0.4)	(9.4)
Contributions to assets	3.4	2.7
Benefit payments from assets	(7.4)	(9.0)
Transfers	(1.2)	1.9
Foreign exchange effects	(4.8)	10.3
Ending balance	\$101.1	\$111.5

⁽¹⁾ Actual loss on assets for the year ended December 31, 2017 was primarily driven by a revaluation of assets managed under insurance contracts as a result of updated census data.

WABCO makes contributions to funded pension plans that at a minimum, meet all statutory funding requirements. Contributions, including payment of benefits incurred by unfunded plans and health and life insurance benefits, totaled \$25.9 million in 2018 compared to \$24.7 million in 2017. Contributions in 2019 are expected to be in line with the contributions made during 2018.

Expected future benefit payments from our pension and retirement health and life insurance benefit plans are shown in the table below:

(Amounts in millions)	2019	2020	2021	2022	2023	2024-2028
Domestic plans without subsidy	\$0.9	\$0.9	\$0.8	\$0.8	\$0.8	\$ 4.5
Foreign pension plans	\$25.6	\$26.7	\$27.1	\$27.8	\$28.1	\$ 151.8

The weighted average annual assumed rate of increase in the health care cost trend rate was 7.0% for 2017, 6.8% for 2018 and is assumed to reach 6.5% in 2019 and then gradually decline to 4.75% by 2027. The health care cost trend rate assumption has the following effect:

(Amounts in millions)	1% Increase	1% Decrease
Effect on the health care component of accumulated post-retirement obligation	\$ 1.6	\$ (1.4)
Effect on total of service and interest cost components of net periodic post-retirement health care benefit costs	\$ 0.3	\$ (0.2)

NOTE 15. Debt

Schuldschein Loans

On March 22, 2018 the Company, through a European subsidiary, entered into a series of six individual senior unsecured loan agreements with an aggregate principal amount of €300.0 million (collectively, the Schuldschein Loans), as follows :

82

Table of Contents

(Amounts in millions)	Face value	Coupon	Maturity date
Fixed rate term loan - Series A	€0.0	0.85%	March 31, 2021
Fixed rate term loan - Series B	60.0	1.15%	March 31, 2022
Fixed rate term loan - Series C	80.0	1.43%	March 31, 2023
Floating rate term loan - Series A	50.0	6-month EURIBOR plus 80 bps	March 31, 2021
Floating rate term loan - Series B	60.0	6-month EURIBOR plus 90 bps	March 31, 2022
Floating rate term loan - Series C	40.0	6-month EURIBOR plus 100 bps	March 31, 2023
	€00.0		

The Company paid approximately €1.1 million of debt issuance costs in connection with the Schuldschein Loans, which has been presented in the consolidated balance sheets as a direct reduction of the related debt liability. Interest under the fixed rate tranches will be paid annually on March 31 of each year, commencing March 31, 2019. Interest under the floating rate tranches are paid semi-annually on March 31 and September 30 of each year, and commenced on September 30, 2018.

As of December 31, 2018, the outstanding debt balance net of unamortized debt issuance costs was €299.1 million (\$342.3 million at December 31, 2018 exchange rates). The proceeds from the Schuldschein Loans will be utilized to meet general financing requirements.

Subject to certain conditions, the Company may, at its option, prepay all or any part of the Schuldschein Loans in an amount equal to the higher of the outstanding nominal amount of such loans (or the part of it) and the discounted value.

The Schuldschein Loans contain customary affirmative and negative covenants, and financial covenants consisting of a consolidated net indebtedness to consolidated EBITDA (earnings before interest, taxes, depreciation and amortization adjusted for certain items) ratio of not more than three times at the end of each fiscal quarter based upon the preceding twelve consecutive months, as well as a consolidated EBITDA to consolidated net interest expense ratio of not less than three times at the end of each fiscal quarter based upon the preceding twelve consecutive months. The Company was in compliance with all of the covenants as of December 31, 2018.

Senior EUR Notes

On November 15, 2016, the Company issued an aggregate amount of €440.0 million of senior unsecured notes (collectively, the Senior EUR Notes).

(Amounts in EUR millions)	Face value	Coupon	Maturity Date
Series D Notes	€90.0	0.84 %	November 15, 2023
Series E Notes	80.0	1.20 %	November 15, 2026
Series F Notes	170.0	1.36 %	November 15, 2028
	€40.0		

The Company paid approximately \$1.4 million of debt issuance costs in connection with the Senior EUR Notes, which has been presented in the consolidated balance sheets as a direct reduction of the related debt liability. Interest on the Senior EUR Notes is payable semi-annually on January 1 and July 1 of each year, and commenced July 1, 2017. As of December 31, 2018, the outstanding debt balance, net of unamortized debt issuance costs, was €439.0 million (\$502.4 million at December 31, 2018 exchange rates). This debt balance included a revaluation loss of \$16.5 million, net of taxes of \$15.3 million, related to these notes that has been recognized in cumulative translation

adjustment within accumulated other comprehensive income. See Note 20 for further discussion.

The proceeds from the Senior EUR Notes were partially utilized to repay outstanding balances on our revolving credit facilities. The remaining proceeds are intended to fund our share repurchase program, finance acquisitions and meet general financing requirements.

Subject to certain conditions, the Company may, at its option, prepay all or part of the Senior EUR Notes plus any accrued and unpaid interest to the date of prepayment and certain penalties as defined in the EUR Note Purchase Agreement. The Company

Table of Contents

may also be required, subject to certain events and conditions, to make an offer to prepay all of the Senior EUR Notes including any accrued and unpaid interest to the date of prepayment. Each holder has the option to accept or reject such offer to prepay.

The EUR Note Purchase Agreement contains customary affirmative and negative covenants, and financial covenants consisting of a consolidated net indebtedness to consolidated EBITDA (earnings before interest, taxes, depreciation and amortization adjusted for certain items) ratio of not more than three times at the end of fiscal quarter based upon the preceding twelve consecutive months, as well as a consolidated EBITDA to consolidated net interest expense ratio of not less than three times at the end of fiscal quarter based upon the preceding twelve consecutive months. The EUR Note Purchase Agreement also provides for customary events of default, the occurrence of which could result in an acceleration of the Company's obligations under the EUR Note Purchase Agreement. We were in compliance with all of the covenants as of December 31, 2018.

The Company also agreed to indemnify the note purchasers holding Senior EUR Notes that are subject to a swap agreement for certain losses associated with swap breakage resulting from a prepayment of the Senior EUR Notes or from an acceleration of the Senior EUR Notes as a result of an event of default.

Senior USD Notes

On June 25, 2015, the Company issued an aggregate amount of \$500.0 million of senior unsecured notes (collectively, the Senior USD Notes) as follows:

(Amounts in millions)	Face value	Coupon	Maturity Date
Series A Notes	\$ 150.0	2.83 %	June 25, 2022
Series B Notes	200.0	3.08 %	June 25, 2025
Series C Notes	150.0	3.18 %	June 25, 2027
	\$500.0		

The proceeds from the Senior USD Notes were used to repay loans outstanding loans under revolving credit facilities, fund share repurchases and acquisitions, refinance existing indebtedness and meet general financing requirements. The Company paid approximately \$2.1 million of debt issuance costs in connection with the Senior USD Notes, which has been presented in the consolidated balance sheets as a direct reduction of the related debt liability.

On April 30, 2018, the Company prepaid the outstanding principal amount of \$500.0 million on the Senior USD Notes, and recognized a loss on debt extinguishment of \$2.3 million net of taxes, of which the pretax amount, \$2.6 million, was recorded in other non-operating expenses in the consolidated statement of operations.

Revolving Credit Facilities

Effective June 28, 2018, the Company amended its existing multi-currency unsecured revolving credit facility, increasing the maximum principal amount of borrowings under the facility from \$400 million (the 2015 Facility) to \$600 million (the 2018 Facility), with an option to increase up to additional \$250.0 million. The 2018 Facility also extended the previously scheduled maturity date of September 30, 2022 for the 2015 Facility to June 28, 2023, subject to two one-year extension options. Concurrent with entering into the 2018 Facility, the Company also terminated the \$100 million multi-currency five-year unsecured revolving credit facility (the 2014 Facility) that was due to expire on December 17, 2019.

On the effective date of the 2018 Facility, the Company repaid the outstanding balance of €104 million and €52 million under the 2015 Facility and 2014 Facility, respectively, and commenced borrowing under the 2018 Facility. As of

December 31, 2018, there were no outstanding borrowings on the revolving credit facility.

Under the 2018 Facility, the Company may borrow, on a revolving basis, outstanding loans in an aggregate principal amount at any one time not in excess of \$600 million. The proceeds from borrowings under the 2018 Facility will be made available to fund the share repurchase program, finance acquisitions, provide working capital and for other general corporate purposes. Up to \$50 million under the 2018 Facility may be used for issuing letters of credit, which was fully unused as of December 31, 2018, and up to \$50 million is available in the form of swing line loans, all \$50 million of which was available for use as of December 31, 2018.

The following table summarizes the balance of outstanding borrowings on these facilities:

84

Table of Contents

(Amounts in millions)	December 31, December 31,	
	2018	2017
2014 Facility	N/A	\$ 82.5
2015 Facility	N/A	303.6
2018 Facility	—	N/A
	\$ —	\$ 386.1
Incremental ability to borrow	\$ 600.0	\$ 113.9

Interest on loans under the 2018 Facility will be calculated at a rate per annum equal to an applicable margin which can vary from 0.30% to 0.85% based on the Company's leverage ratio plus LIBOR for loans denominated in U.S. Dollars and EURIBOR for loans denominated in Euros (SIBOR for loans denominated in Singapore Dollars and HIBOR for loans denominated in Hong Kong Dollars).

The 2018 Facility contains terms and provisions (including representations, covenants and conditions) customary for transactions of this type. Financial covenants include a leverage test (consolidated net indebtedness not to exceed three times adjusted four quarter trailing consolidated EBITDA) and a maximum subsidiary indebtedness test. The maximum subsidiary indebtedness test limits the total aggregate amount of indebtedness of the Company's subsidiaries, excluding indebtedness under the 2018 Facility, to 20 percent of consolidated total assets as at the end of the most recently ended financial year, of which not more than \$150 million may be secured, provided however that the Company may incur additional subsidiary indebtedness subject to, inter alia, providing additional corporate guarantees. Other undertakings and covenants include delivery of financial reports and other information, compliance with laws including environmental laws and permits, the Employee Retirement Income Security Act (ERISA) and U.S. regulations, the Foreign Account Tax Compliance Act (FATCA), sanctions-related obligations, negative pledge, limitations on mergers and sales of assets, change of business and use of proceeds. We were in compliance with all of the covenants as of December 31, 2018.

Other Debt

As of December 31, 2018, the Company's various subsidiaries had borrowings from banks totaling \$0.5 million which was fully classified as long-term debt. This is in comparison to \$0.7 million as of December 31, 2017, of which \$0.3 million was classified as long-term debt.

The following table summarizes maturities of long-term debt outstanding as of December 31, 2018.

(Amounts in millions)	
2019	—
2020	0.3
2021	68.7
2022	137.3
2023	354.8
Thereafter	286.2
Less: unamortized debt issuance fees	(2.1)
Total long-term debt	\$845.2

NOTE 16. Warranties, Guarantees, Commitments and Contingencies

Warranties

Products sold by WABCO are covered by a basic limited warranty with terms and conditions that vary depending upon the product and country in which it was sold. The limited warranty covers the equipment, parts and labor (in certain cases) necessary to satisfy the warranty obligation generally for a period of two years. Estimated product warranty expenses are accrued in cost of goods sold at the time the related sale is recognized. Estimates of warranty expenses are based primarily on warranty claims experience and specific customer contracts. Warranty expenses include accruals for basic warranties for product sold, as well as

85

Table of Contents

accruals for product recalls, service campaigns and other related events when they are known and estimable. To the extent WABCO experiences changes in warranty claim activity or costs associated with servicing those claims, its warranty accrual is adjusted accordingly. Warranty accrual estimates and the allocation of warranty between short and long term are updated based upon the most current warranty claims information available.

The following is a summary of changes in the Company's product warranty liability for the years ended December 31, 2018, 2017 and 2016.

(Amounts in millions)	Year Ended December		
	2018	2017	2016
Balance of warranty costs accrued, beginning of period	\$50.9	\$49.3	\$40.9
Warranty costs accrued	31.3	32.5	48.9
Warranty claims settled	(36.4)	(36.0)	(38.1)
Foreign exchange translation effects	(2.1)	5.1	(2.4)
Balance of warranty costs accrued, end of period	\$43.7	\$50.9	\$49.3
Current liability, included in current portion of warranties	23.3	29.5	32.2
Long-term liability, included in other liabilities	20.4	21.4	17.1
Warranty costs accrued	31.3	32.5	48.9
Less: received and anticipated recoveries from suppliers	(0.5)	(2.0)	(27.4)
Warranty costs net of received and anticipated recoveries	\$30.8	\$30.5	\$21.5

Guarantees and Commitments

Future minimum rental commitments under all non-cancelable operating leases with original terms in excess of one year in effect as of December 31, 2018, are: \$30.1 million in 2019; \$26.0 million in 2020; \$17.3 million in 2021; \$13.9 million in 2022; \$10.6 million in 2023 and \$23.2 million thereafter, amounting to a total of \$121.1 million. Rental expense for all operating leases was \$23.8 million, \$18.2 million and \$17.8 million for the years ended December 31, 2018, 2017 and 2016, respectively.

The Company has uncollateralized bank guarantees totaling \$37.3 million of which \$25.8 million is related to statutorily-required guarantees for tax and other litigation, \$3.0 million is related to letters of credit, and \$8.5 million is related to other individually immaterial items.

Right of Recourse

As discussed in Note 12, the Company may receive guaranteed notes receivable in the form of bankers acceptance drafts from its customers in China as payment of outstanding accounts receivable. These banker's acceptance drafts are non-interest bearing obligations of the issuing bank and generally have contractual maturities of six months or less. The Company may use these banker's acceptance drafts prior to the scheduled maturity date to settle outstanding accounts payable with vendors. Banker's acceptance drafts transferred to vendors are subject to customary right of recourse provisions prior to their scheduled maturity date against the original debtor. As of December 31, 2018 and 2017, the Company had approximately \$28.2 million and \$39.5 million, respectively, of banker's acceptance drafts subject to customary right of recourse provisions, which were transferred to vendors and had not reached their scheduled maturity date. Historically, the banker's acceptance drafts have settled upon maturity without any claim of recourse against the Company.

Contingencies

We are subject to proceedings, lawsuits and other claims related to products and other matters. We are required to assess the likelihood of any adverse judgments or outcomes to these matters as well as potential ranges of probable and reasonably possible losses. A determination of the amount of liability to be recorded, if any, for these contingencies is made after careful analysis of each individual issue.

Under an indemnification agreement, WABCO Brazil is responsible for certain claims related to Trane's (formerly called American Standard) business for periods prior to the Company's spin-off from Trane in 2007. In particular, there are tax claims pending in various stages of the Brazilian legal process related to income, social contribution and/or value added taxes for which a contingency exists and which may or may not ultimately be incurred by the Company.

Table of Contents

As previously disclosed, this includes one particular case for which an accrual of BRL 38.2 million including interest (\$9.9 million based on December 31, 2018 exchange rates) was recorded based on management's assessment after considering advice of external legal counsel with respect to the likelihood of loss in this case. A corresponding deposit was made in the first quarter of 2017 into an escrow account with the Brazilian government, representing substantially all of the potential liability for the case. In March 2018, our appeal to have this case heard at the Brazilian Superior Court of Justice (the Court) was accepted. The Court subsequently heard the case and rejected our position ultimately ruling in favor of the tax authorities during the first quarter of 2018. There will be no further appeals. Accordingly, management expects this case to be closed by the Brazilian authorities within the next twelve months and has classified the accrual and deposit within other current liabilities and other current assets, respectively, as of December 31, 2018.

The estimated total amount of other remaining contingencies for tax claims under the indemnification agreement as of December 31, 2018 was \$20.9 million including interest. However, based on management's assessment following advice of our external legal counsel, the Company believes that it has valid arguments in all of these cases and thus no accrual is required at this time.

NOTE 17. Income Taxes

Income before income taxes and the applicable provision for income taxes were:

(Amounts in millions)	Year Ended December 31,		
	2018	2017	2016
Income before income taxes:			
Domestic	\$36.2	\$227.3	\$14.0
Foreign	427.5	425.3	355.1
	\$463.7	\$652.6	\$369.1
Provision/(benefit) for income taxes:			
Current:			
Domestic	\$1.5	\$(9.8)	\$1.5
Domestic Transition Tax	5.9	196.4	—
Foreign	65.5	91.3	52.0
	\$72.9	\$277.9	\$53.5
Deferred:			
Domestic	\$4.6	\$(30.0)	\$(16.0)
Foreign	(28.2)	(18.2)	84.3
	\$(23.6)	\$(48.2)	\$68.3
Total provision	\$49.3	\$229.7	\$121.8

Our effective tax rate (ETR) of 10.6% for the year ended December 31, 2018 included the following non-recurring items which resulted in our ETR being significantly lower than our statutory rate of 21%:

- During the fourth quarter of 2018, we recorded a \$33.3 million income tax benefit as a result of effectively settling the Belgium Patent Income Deduction (PID) claim for 2013-14, reducing the ETR by 7.2%;

- During the fourth quarter of 2018, we recorded an \$11.4 million income tax benefit related to the settlement of a transfer pricing arbitration claim between Germany and Belgium, reducing the ETR by 2.5%.

In addition, during 2018, our ETR continues to benefit from the availability of various tax incentives and programs in foreign jurisdictions including the Belgium PID, China High & New Technology Enterprise (HNTE) and a Dutch hybrid group financing structure. We recorded a current year tax benefit of \$22.9 million, reducing the ETR by 4.9% for the Belgium PID, which is due to expire in June 2021.

Table of Contents

Belgium Excess Profit Ruling

The Belgian Tax Code contained provisions to reduce the taxable base of companies, through rulings granted by the Belgian Government under the excess profit ruling (EPR) program. WABCO qualified for the EPR program in 2012. On January 11, 2016, the European Commission ruled that the EPR program permitted under Belgian law is illegal and incompatible with European State Aid law (hereinafter referred to as the "Decision"). As a result, the European Commission required Belgium to stop applying the EPR program and to recover all past tax benefits received by applicable companies under the program (i.e. a "clawback"). The Company recorded an income tax provision of \$69.3 million during 2016 with respect to the clawback of all the tax benefits obtained under the EPR program for tax years 2012 to 2014. This income tax provision did not have any cash impact because the Company had net operating losses (NOLs) available to deduct against the incremental taxable profit. The Company together with the Belgian State and a number of other impacted Belgian taxpayers appealed the Decision before the General Court of the European Union (the General Court). As a result of the Decision, the Company previously sought and obtained an alternative tax relief for 2015 and future years under the Belgium PID program and requested approval to apply the PID for years 2013-14.

In the fourth quarter of 2018, we received confirmation from the Belgian Tax authorities that our request for PID benefits, applicable for years 2013-14, was approved by the Recovery Team of the European Commission and as a result we recorded a tax benefit of \$33.3 million. The remaining unrecognized tax benefit related to the EPR program is \$32.9 million and includes cumulative translation adjustments of \$3.0 million and a cumulative decrease of \$6.1 million for revaluation resulting from 2017 Belgium tax reform.

On February 14, 2019, the General Court issued a judgment to annul the Decision. See Note 23 for discussion.

The Tax Act

On December 22, 2017, the U.S. government enacted comprehensive tax legislation known as the Tax Cuts and Jobs Act (The Tax Act). The Tax Act includes a reduction in the corporate tax rate to 21%, from 35%, implementing a territorial tax system, a one-time transition tax on unrepatriated earnings of foreign subsidiaries at reduced tax rates regardless of whether the earnings are repatriated and the modification or repeal of many business deductions and credits. The reduction in corporate tax rate from 35% to 21% significantly impacts the reconciliation of effective income tax rate as most foreign jurisdictions in which we have significant operations have a statutory tax rate higher than 21% but less than 35%.

While the Tax Act provides for a territorial tax system, beginning in 2018, it includes the global intangible low-taxed income (GILTI) provision. The Company elected to account for GILTI tax in the period in which it is incurred. The GILTI provision requires the Company to include in its U.S. income tax return foreign subsidiary earnings in excess of an allowable return on foreign subsidiary's tangible assets. The GILTI tax expense is primarily caused by a U.S. foreign tax credit limitation which requires an allocation of interest expense to the GILTI income, effectively rendering the allocated interest expense non-deductible. The GILTI provision has resulted in a \$1.5 million increase in income tax expense for 2018.

The SEC staff issued Staff Accounting Bulletin No. 118 (SAB 118) to address the application of U.S. GAAP in situations when a registrant does not have the necessary information available, prepared, or analyzed (including computations) in reasonable detail to complete the accounting for certain income tax effects of the Tax Act. During 2017, the Company recognized provisional income tax expense of \$100.0 million. The provisional U.S. tax is comprised of the estimated transition tax payable with the Company's U.S. tax filings of \$196.4 million offset by the reversal of previously recorded deferred tax liabilities on outside basis differences in foreign subsidiaries of \$96.4 million. During 2018, the Company recognized \$5.8 million of income tax expense related to the final transition tax payable of \$202.2 million included on the Company's 2017 U.S. tax filing. In addition, we recognized \$2.0 million of

income tax expense related to changes in the revaluation of deferred tax assets and liabilities, which was primarily due to finalization of R.H. Sheppard Co., Inc. purchase accounting. The Company recognized a deferred tax benefit of \$32.4 million to reflect the reduced U.S. tax rate and other effects of the Tax Act as of December 31, 2017. The accounting for the tax effects of the Tax Act has been completed in 2018.

Belgium Tax Reform

On December 25, 2017, Belgium enacted tax legislation including a reduction in the corporate tax rate, decreasing from 33.99% to 29.58% in 2018 and then to 25.00% beginning in 2020. During 2018 and 2017, the Company recognized income tax expense of \$5.2 million and \$13.8 million, respectively, related to the remeasurement of our net deferred tax assets at the tax rate the underlying items are expected to be realized.

Reconciliation of Effective Income Tax Rate

Table of Contents

A reconciliation between the actual income tax expense provided and the income taxes computed by applying the statutory federal income tax rate of 21.0% in 2018 and 35.0% in 2017 and 2016 to the income before income taxes is as follows:

(Amounts in millions)	Year Ended December		
	2018	2017	2016
Tax provision at statutory rate	\$97.4	\$228.3	\$129.2
State income taxes, net	(2.6)	8.9	0.2
Foreign earnings taxed at other than statutory rate	33.2	(21.6)	(28.5)
Decrease in valuation allowance	(10.6)	(1.8)	(0.4)
Unremitted foreign earnings	—	—	(0.5)
2013-14 PID claim (2018) / EPR Clawback (2016)	(33.3)	—	69.3
Patent Income Deduction	(22.9)	(21.7)	(20.8)
High & New Technology Enterprise (HNTE)	(8.7)	(10.5)	(7.6)
Hybrid financing structure	(11.4)	(11.5)	(11.1)
Notional Interest Deduction (NID)	(1.0)	(1.7)	(2.9)
Change in other uncertain tax positions	2.1	0.6	(10.6)
Equity compensation	2.0	(2.4)	4.6
Belgium tax rate change	5.2	13.8	—
U.S. tax rate change	2.0	(32.4)	—
Net U.S. transition tax	5.8	100.0	—
Other, net	(7.9)	(18.3)	0.9
Total provision	\$49.3	\$229.7	\$121.8

The effective income tax rates for 2018, 2017 and 2016 were 10.6%, 35.2% and 33.0%, respectively.

The Company has operations and a taxable presence in countries outside the United States and all of these countries have a tax rate that is different than the rate in the U.S. The countries in which the Company has a material presence and where the foreign earnings are taxed at a rate significantly other than 21% include Belgium, Brazil, China, Germany, India and the Netherlands. The tax effect of foreign earnings taxed at other than the statutory rate is an increase of \$33.2 million and a decrease of \$21.6 million and \$28.5 million in 2018, 2017 and 2016, respectively. The increase in 2018 is largely due to the change in the U.S. statutory rate from 35% to 21% beginning from January 1, 2018.

Deferred Tax Assets and Liabilities

The following table details the gross deferred tax liabilities and assets and the related valuation allowances:

Table of Contents

(Amounts in millions)	Year Ended	
	December 31, 2018	2017
Deferred tax liabilities:		
Facilities (accelerated depreciation, capitalized interest and purchase accounting differences)	\$17.6	\$22.0
Basis difference in subsidiaries	65.0	66.8
Intangibles	12.5	15.9
	\$95.1	\$104.7
Deferred tax assets:		
Net operating losses and tax credits	\$8.5	\$28.3
Post-retirement and other employee benefits	149.3	143.3
Capitalized assets	69.2	50.2
Inventory	1.6	1.6
Warranties	2.1	3.0
Unrealized foreign exchange losses	10.0	13.2
Other	17.5	13.3
	\$258.2	\$252.9
Valuation allowances	(1.8)	(12.4)
Net deferred tax assets	\$161.3	\$135.8

As at December 31, 2018, Management considered new evidence, both positive and negative, that could affect its view of the future realization of deferred tax assets.

At December 31, 2017 the Company had a valuation allowance recorded against Belgian deferred tax assets related to a transfer pricing arbitration claim between Germany and Belgium. During the fourth quarter of 2018, the Company successfully settled the arbitration claim and Belgium accepted an additional tax deduction of \$38.6 million. As a result, the Company reversed the associated valuation allowance of \$11.4 million. The amount was offset by other valuation allowance changes of \$0.8 million resulting in a net benefit of \$10.6 million.

Management has determined that \$1.8 million of its deferred tax assets in certain jurisdictions will not be realized since evidence such as historical operating profits resulted in a lack of taxable earnings during the most recent three-year period ended December 31, 2018, and the lack of projected earnings provided sufficient negative evidence to record a valuation allowance against such deferred tax assets related to carryforwards for net operating losses.

Tax Loss Carryforwards

As of December 31, 2018, the Company has \$151.8 million of net operating loss carry forwards (NOLs) available for utilization in future years. Approximately \$139.7 million of such NOLs have an unlimited life and the remainder of \$12.1 million is available for periods of up to 20 years. The net operating loss carryforwards include \$125.0 million for which unrecognized tax benefits of \$34.8 million have been recorded at December 31, 2018.

Unrecognized Tax Benefits

The Company conducts business globally and, as a result, it files income tax returns in the U.S. federal, state and local, and foreign jurisdictions. In the normal course of business, the Company is subject to examination by taxing authorities throughout the world and has significant presence in the following jurisdictions: Belgium, Brazil, China, Germany, India, the Netherlands, Poland and the U.S. With no material exceptions, the Company is no longer subject

to examinations by tax authorities for years before 2008. However, the Belgium and U.S. federal income tax returns are no longer subject to examination through years 2012 and 2014, respectively.

Unrecognized tax benefits as of December 31, 2018 amounted to \$40.2 million of which \$34.8 million has been offset against deferred tax assets as stated above. The Company believes that \$2.2 million of the remaining unrecognized tax benefits will be settled during 2019. The Company is currently unable to estimate the timing of payment of the remaining unrecognized tax benefits of \$3.2 million. Total accrued interest as of December 31, 2018, 2017 and 2016 was approximately \$0.6 million, \$0.4 million and

Table of Contents

\$0.8 million, respectively. The Company recognizes accrued interest and penalties related to unrecognized tax benefits in income tax expense.

A reconciliation of the beginning and ending balances of unrecognized tax benefits (exclusive of interest) is as follows:

(Amounts in millions)	Year Ended December		
	2018	2017	2016
Beginning balance, January 1	\$71.6	\$69.4	\$14.6
Additions for tax positions related to current year	—	1.7	66.7
Additions for tax positions related to prior years	3.4	4.2	—
Reductions for tax positions related to prior years	(35.4)	(3.4)	(1.1)
Cash settlements	—	(0.2)	—
Expirations of statute of limitations	—	(0.1)	(10.8)
Ending balance, December 31	\$39.6	\$71.6	\$69.4

During 2018, the Company reduced its unrecognized tax benefit by a net \$32.0 million, which is primarily related to the EPR/PID clawback of \$33.3 million, as a result of receiving PID benefits for years 2013-14. The remaining difference includes a net increase in other unrecognized tax positions of \$3.6 million, which was slightly offset by a decrease of \$2.3 million as a result of foreign currency translation adjustments.

During 2017, the Company reduced its unrecognized tax benefit related to the EPR/PID clawback by \$8.0 million as the result of Belgian tax rate changes; however, the unrecognized tax benefit increased by \$9.0 million as the result of foreign currency translation. During 2016, the Company recorded an unrecognized tax benefit related to the EPR/PID clawback of \$69.3 million net of \$4.1 million of foreign currency translation adjustments. Further, during 2016, the Company reversed unrecognized tax benefits due primarily to the expiration of the applicable statute of limitation of \$11.9 million net of \$0.6 million of foreign currency translation adjustments.

In February 2018, the Company received a final tax and interest assessment in India for the 2013 tax year related to a capital gain on an intercompany transfer of an Indian subsidiary. The assessment was for INR 3.5 billion (\$50.7 million at December 31, 2018 exchange rates). In addition, a penalty assessment was issued in March for INR 2.1 billion (\$30.7 million at December 31, 2018 exchange rates). The Company believes that no tax is due under the relevant double tax treaty between the Netherlands and India and therefore no unrecognized tax benefit has been recorded. The Company appealed both the tax and penalty assessments during March 2018. In May 2018, the Commissioner of Income Tax granted a partial stay of demand requiring the Company to pay 15% of the assessment (INR 531.4 million, equivalent to \$7.6 million at December 31, 2018 exchange rates) during the next twelve months. The assessed penalty has been held in abeyance pending the appeal. As of December 31, 2018, the Company has deposited installments totaling INR 400.0 million (\$5.7 million at December 31, 2018 exchange rates) which are recorded in other assets on the consolidated balance sheet.

As of December 31, 2018 and 2017, there were \$39.6 million and \$71.6 million of unrecognized tax benefits that, if recognized, would impact the annual effective tax rate.

Indefinite Reinvestment of Foreign Earnings

Non-U.S. income taxes are provided for the reversal of basis differences on investments in foreign subsidiaries not deemed to be indefinitely reinvested in the local countries. Non-U.S. income taxes have not been provided on the excess of the amount for financial reporting over the tax basis of investments in foreign subsidiaries that are indefinitely reinvested of \$29.0 million as of December 31, 2018. Determination of the amount of any unrecognized

deferred income tax liability on this temporary difference is not practicable because of the complexities of the hypothetical calculation related to how income basis differences would be repatriated.

Table of Contents

NOTE 18. Related Party Transactions

Equity Method Investments

Transactions with equity method investees are considered to be related-party transactions. During the year ended December 31, 2017, the Company acquired its remaining interests in WABCO Automotive South Africa and Meritor WABCO Vehicle Control Systems, both of which were previously accounted for under the equity method. Transactions occurring between the Company and these entities prior to their acquisition dates are identified as related party transactions.

The equity method investments held by the Company and its respective ownership interests at December 31, 2018 include the following:

Entity	Description	Ownership %
WABCOWURTH Workshop Services GmbH (WABCOWURTH)	Supplier of diagnostic systems	50.0%
Sino-American RH Sheppard Hubei Steering Systems LTD (Sheppard Hubei)	Provider of steering gear solutions in China	50.0%
China Source Engineered Components Trading Corporation Ltd (SSCS)	Wholesaler of machined parts	37.5%
Shanghai G7 WABCO IOT Technology Co Ltd (G7)	Developer of fleet management solutions	50.0%

WABCO received no dividends from its equity method investees during the year ended December 31, 2018, versus \$22.6 million and \$29.8 million for the years ended December 31, 2017 and 2016, respectively.

The following table summarizes the Company's sales and purchases with related parties:

(Amounts in millions)	WABCO Sales to			WABCO Purchases from		
	2018	2017	2016	2018	2017	2016
WABCOWURTH	\$0.2	\$0.2	\$0.2	\$0.5	\$0.2	\$0.3
Sheppard Hubei	—	1.2	—	—	0.1	—
SSCS	—	—	—	—	0.5	—
G7	—	—	—	0.2	—	—
Meritor WABCO	—	156.8	167.6	—	0.1	0.1
WABCO Automotive South Africa	—	4.7	3.6	—	—	—

The following table summarizes receivables and payables with related parties:

(Amounts in millions)	WABCO Receivables from		WABCO Payables to	
	2018	2017	2018	2017
Sheppard Hubei	\$0.4	\$1.6	\$—	\$—
SSCS	—	—	—	0.1

Consolidated Joint Ventures

WABCO has four fully consolidated joint ventures as of December 31, 2018. The first of these joint ventures is in Japan with Sanwa-Seiki where the joint venture distributes WABCO's products in the local market. WABCO's ownership interest in the joint venture with Sanwa-Seiki is 90%.

The second joint venture is in the United States with Cummins Engine Co. (Cummins), a manufacturing partnership formed to produce air compressors designed by WABCO. WABCO's ownership interest in the joint venture with Cummins is 70%.

The third joint venture is with Guangdong FUWA Heavy Industry Co., Ltd., (FUWA) to produce air disc brakes for commercial trailers in China. FUWA is the largest manufacturer of commercial trailer axles in China and in the world. WABCO's ownership interest in the joint venture with FUWA is 70%.

Table of Contents

The fourth joint venture is with FAW Jiefang (FAW), to accelerate WABCO's single-piston air disc brake technology in China. WABCO's ownership interest in the joint venture with FAW is 60%. This joint venture was created during the fourth quarter of 2018 and will commence its manufacturing activity in 2019.

(Amounts in millions)	WABCO		WABCO Purchases			
	Sales to		from			
Joint Venture partners	2018	2017	2016	2018	2017	2016
Sanwa-Seiki	\$ —	\$ —	\$ —	\$22.1	\$25.6	\$22.8
Cummins	96.4	83.4	75.7	—	—	0.1
FUWA	9.3	6.9	7.1	—	—	—

NOTE 19. Geographic Information

WABCO is a fully integrated global business with management structures established in a variety of ways, including around products, distribution channels and key customers. WABCO's plants, engineering, technical support, distribution centers and other support functions are shared among various product families and serve all distribution channels with many customers. Our largest customer is Daimler, which accounted for 14% of our sales in 2018, 11% in 2017 and 10% in 2016. Volvo, our next largest customer, accounted for 11% of our sales in 2018, and 8% in 2017 and 2016.

North American sales for the years ended December 31, 2018, 2017 and 2016 accounted for 23%, 18% and 14% of total sales, respectively. European sales for the years ended December 31, 2018, 2017 and 2016 accounted for 49%, 52% and 54% of total sales, respectively. Asian sales for the years ended December 31, 2018, 2017 and 2016 accounted for 23%, 26% and 24% of total sales, respectively. We are strongly rooted in China and India and have achieved a leading position in the marketplace through increasingly close connectivity to customers. The Company continues to be strengthened in Asia through an extensive network of suppliers, manufacturing sites and engineering hubs.

During the fourth quarter of 2018, the Company disclosed a new organizational structure managed by business regions. The Company is currently in the implementation phase of this new structure including defining its revised internal reporting to the chief operating decision maker. The financial reporting to the Company's chief operating decision maker has remained unchanged as of December 31, 2018 and as of the filing date of February 15, 2019.

Geographic Data

(Amounts in millions)	Year Ended December 31,		
	2018	2017	2016
Product Sales:			
OEM	\$2,886.9	\$2,511.8	\$2,101.0
Aftermarket	944.1	792.4	709.0
Total sales	\$3,831.0	\$3,304.2	\$2,810.0
Sales - Geographic distribution (a):			
United States	\$859.0	\$579.6	\$399.9
Europe (countries below are included in this total)	1,860.7	1,705.3	1,509.2
Germany	700.9	676.3	618.9
France	109.8	93.5	83.6
Netherlands	131.8	115.2	108.8

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Sweden	222.3	214.2	185.9
Other (countries below are included in this total)	1,111.3	1,019.3	900.9
Japan	118.4	115.4	107.7
China	387.8	411.9	290.4
Brazil	115.2	88.9	71.4
India	283.7	231.3	202.1
Total sales	\$3,831.0	\$3,304.2	\$2,810.0

Table of Contents

(a) Sales to external customers are classified by country of destination.

(Amounts in millions)	As of December 31,		
	2018	2017	2016
Long-lived Assets (b)			
Geographic distribution:			
United States	\$711.9	\$715.3	\$92.6
Europe (countries below are included in this total)	710.3	706.1	623.6
Germany	353.3	315.2	262.0
Poland	152.8	153.6	126.0
Other (countries below are included in this total)	272.4	290.2	236.2
India	113.0	106.6	94.6
China	58.1	56.5	54.6
Total long-lived assets	\$1,694.6	\$1,711.6	\$952.4

(b) Amounts are presented on a net basis and exclude deferred tax assets and investments in unconsolidated joint ventures.

NOTE 20. Derivative Instruments and Hedging Activities

ASC 815, Derivatives and Hedging, requires a company to recognize all of its derivative instruments as either assets or liabilities on the balance sheet at fair value. The accounting for changes in the fair value of a derivative instrument depends on whether it qualifies and has been designated as a hedge for accounting purpose. For those derivative instruments that are designated and qualify as hedging instruments, a company must designate the hedging instrument based upon the exposure being hedged as a fair value hedge, cash flow hedge, or a hedge of a net investment in a foreign operation.

The Company recognizes all derivative financial instruments in the consolidated balance sheet at fair value using Level 2 inputs and these are classified as “other current assets,” “other assets,” “other accrued liabilities” or “other liabilities” on the consolidated balance sheets. The impact resulting from changes in the fair value of derivative instruments is recorded in the same line item in the consolidated statement of operations as the underlying exposure being hedged or in accumulated other comprehensive income (AOCI) for derivatives that qualify and have been designated as cash flow hedges or hedges of a net investment in a foreign operation. Any ineffective portion of a financial instrument's change in fair value is recognized in earnings together with changes in the fair value of any derivatives not designated as relationship hedges.

Net Investment Hedges

The Company designated borrowings under its revolving credit facilities and Senior EUR Notes to partially hedge the foreign currency exposure of its net investment in certain Euro-denominated wholly-owned subsidiaries. As of December 31, 2018 and 2017, the Company designated Euro-denominated loans of €440.0 million (approximately \$503.6 million at December 31, 2018 exchange rate) and €763.0 million (approximately \$912.0 million at December 31, 2017 exchange rate) as hedges of its net investment in these subsidiaries. For the twelve-month periods ended December 31, 2018 and 2017, the Company recorded a gain of \$16.8 million, net of taxes of \$4.7 million, and a loss of \$43.2 million, net of taxes of \$25.1 million, respectively, in cumulative translation adjustment within AOCI.

Derivatives Not Designated as Hedges

Foreign exchange contracts are also used by the Company to offset the earnings impact relating to the variability in exchange rates on certain assets and liabilities denominated in non-functional currencies and have not been designated as relationship hedges. As of December 31, 2018 and 2017, the Company had the following net outstanding notional amounts related to foreign currency forward contracts:

94

Table of Contents

(Amount in millions)			As of December 31, 2018		As of December 31, 2017	
Foreign Currency	Unit of Measure	Hedged against	Notional		Notional	
			Quantity Hedged	Amount (USD Equivalent)	Quantity Hedged	Amount (USD Equivalent)
Chinese Yuan	CNY	EUR	849.0	123.4	550.0	84.2
Hong Kong Dollar	HKD	EUR	285.0	36.4	250.0	32.0
British Pound	GBP	EUR	11.7	14.9	9.5	12.8
US Dollar	USD	EUR	*	*	294.2	294.2
Polish Zloty	PLN	EUR	*	*	64.0	18.3

* No significant outstanding foreign currency forward contracts

The Company had additional foreign currency forward contracts with notional amounts that individually amounted to less than \$10 million. As of December 31, 2018 and 2017, respectively, the aggregate notional amount of forward contracts outstanding was €170.2 million (\$194.8 million at December 31, 2018 exchange rates) and €416.4 million (\$497.7 million at December 31, 2017 exchange rates) with an average duration of 1 month. The fair value of the derivatives amounts amounted to \$0.6 million and \$2.0 million as of December 31, 2018 and 2017, respectively.

For the years ended December 31, 2018 and 2017, the Company recognized net losses on its derivative instruments of \$1.1 million and \$6.0 million, respectively. When combined with the revaluation of assets and liabilities, these foreign exchange contracts resulted in net non-operating gains of \$2.9 million and \$1.9 million in 2018 and 2017, respectively.

NOTE 21. Fair Value Measurements

Assets and liabilities measured at fair value on a recurring basis as of December 31, 2018 and 2017 were as follow:

(Amounts in millions)	As of December 31, 2018			Total
	Level 1	Level 2	Level 3	
Short-term and other investments ^(a)	\$—	\$209.4	\$—	\$—209.4
Foreign currency derivative assets ^(b)	—0.6	—	—	0.6

(Amounts in millions)	As of December 31, 2017			Total
	Level 1	Level 2	Level 3	
Short-term and other investments ^(a)	\$—	\$83.0	\$—	\$—83.0
Foreign currency derivative assets ^(b)	—2.0	—	—	2.0

(a) Short-term and other investments consist of mutual funds or deposit funds holding primarily term deposits, certificates of deposit and short-term bonds. The Company considers highly liquid investments with maturities of three months or less when purchased to be cash and cash equivalents. The fair value of short-term and other investments is determined based on pricing sources for identical instruments in less active markets. The unrealized loss on short-term and other investments still held at the reporting date was immaterial for the years ended December 31, 2018 and 2017.

(b) Fair value of derivative instruments determined based on Level 2 inputs including credit ratings and other criteria observable in the market.

Other Fair Value Disclosures

During the third quarter of 2018, the Company determined that the carrying value of one of its non-marketable investments exceeded its estimated fair value and recognized an impairment of \$5.5 million in other non-operating expense, net. The impairment loss recognized considers updated financial information received from the investee indicating that the estimated fair value of the business had declined below the amount previously estimated by the Company determined using discounted cash flow and multiple exit assumptions. There were no observable price changes for identical or similar instruments that would require the Company to further adjust its non-marketable equity investments to their fair value. The carrying value determined using the measurement alternative of the non-marketable investments was \$25.4 million and \$30.9 million at December 31, 2018 and 2017, respectively.

Table of Contents

NOTE 22. Business Combinations

Acquisition of WABCO Automotive South Africa

On December 1, 2017, the Company acquired the remaining 51% interest in its South African partnership with Sturrock and Robson Industries, Pty Ltd. for total consideration of \$7.9 million, of which \$7.4 million was paid in cash and \$0.5 million related to non-cash consideration for payables from the partnership assumed in acquisition accounting. This acquisition extends the Company's global product portfolio, including its recently acquired product lines, to the Sub-Saharan region and further improves the Company's proximity to customers in this region.

The acquisition of the remaining interests was accounted for as a step-acquisition, resulting in a net gain on remeasurement of equity method investment of \$4.2 million. This included a \$6.0 million gain related to the remeasurement of the Company's existing equity method investment to the acquisition date fair value of \$7.1 million, offset by the release of foreign currency translation of \$1.8 million associated with the equity method investment prior to the acquisition. As part of the transaction, the consolidated interest in the South African partnership was integrated into the newly formed WABCO South Africa Pty Ltd. (WABCO South Africa).

The allocation of the purchase consideration to the assets acquired and liabilities assumed as of the acquisition date is final as of December 31, 2018. During the year ended December 31, 2018, the Company made adjustments to the purchase price allocation, to increase intangible assets, accrued liabilities, inventories, other current receivables and property, plant and equipment by \$7.3 million, \$2.4 million, \$0.7 million, \$0.3 million and \$0.3 million, respectively. This resulted in a total net decrease of \$6.2 million to goodwill. The following table summarizes the final allocation of the purchase consideration:

Table of Contents

(Amounts in millions)

Accounts receivable	\$1.8
Inventories	2.1
Other current assets	0.3
Property, plant and equipment	1.1
Intangible assets	7.3
Accrued liabilities	(3.5)
Identifiable net assets	\$9.1
Goodwill	5.9
Total estimated fair value of net assets	\$15.0
Less: fair value of equity method investment	(7.1)
Net purchase consideration	\$7.9

The intangible assets include amounts recognized for the fair value of distribution rights. The fair value of intangible assets

was determined based on an income and cost approach. The intangible assets are being amortized over a weighted-average useful life of approximately 10 years. The goodwill generated is primarily attributable to expected synergies and is not deductible for tax purposes. The transaction-related costs were expensed as incurred and were recorded within operating expenses. The pro forma effects of this acquisition would not materially impact the Company's reported results for any period presented and as a result, no pro forma financial statements have been presented.

Acquisition of Meritor WABCO Vehicle Control Systems (now known as WABCO USA LLC)

On October 1, 2017, the Company acquired the remaining interest in its Meritor WABCO joint venture from Meritor Inc. for \$250.0 million, less cash acquired of \$16.4 million, resulting in net cash consideration of \$233.6 million. A final closing partnership distribution was received by Meritor immediately prior to acquisition, which effectively reduced their ownership interest from 50% to 49.21%. This acquisition of the remaining 49.21% interest in Meritor WABCO unifies the Company's operations in North America and allows customers to access an integrated WABCO product portfolio and benefit from an integrated supply chain.

In connection with the acquisition, the Company entered into a new ten-year distribution agreement with a Meritor affiliate to serve as the exclusive distributor for a certain range of WABCO's Aftermarket products in the U.S. and Canada and its non-exclusive distributor in Mexico. The Company has the option to reacquire the distribution rights, and Meritor has the option to put these distribution rights to the Company, at certain points until April 2021 for an exercise price between \$225 million and \$265 million, based on the earnings of the distribution business.

The acquisition of Meritor WABCO was accounted for as a step-acquisition. The equity investment held by the Company immediately prior to acquisition was remeasured to an acquisition-date fair value of \$258.0 million based on the pro rata value of the new equity interest acquired given that prior to the final closing partnership distribution, both partners had equal proportions of equity interest in the prior joint venture with the same rights and preferences, and that the acquired equity interest was consummated on an arm's length basis by knowledgeable, unrelated parties. This valuation was corroborated by applying an income approach that utilized discounted future estimated cash flows based on projections of revenues and expenses and our weighted-average cost of capital. The resulting gain on remeasurement of equity method investment amounted to \$243.5 million.

During the year ended December 31, 2018, adjustments to the purchase price allocation were not material. The allocation of the purchase consideration to the assets acquired and liabilities assumed as of the acquisition date has been final as of September 30, 2018. The following table summarizes the final allocation of the net purchase

consideration:

97

Table of Contents

(Amounts in millions)

Cash & cash equivalents	\$ 16.4
Accounts receivable	38.6
Inventories	43.5
Other current assets	0.3
Property, plant & equipment	2.1
Intangible assets	165.0
Accounts payable	(56.2)
Accrued liabilities	(17.4)
Identifiable net assets acquired	\$ 192.3
Goodwill	321.0
Total fair value of net assets	\$ 513.3
Less: fair value of equity method investment	(258.0)
Less: elimination of unrealized profits on inventory	(5.3)
Net purchase consideration	\$ 250.0

The intangible assets include amounts recognized for the fair value of trade name and customer-based assets. The fair value of intangible assets was determined based on an income and cost approach. The intangible assets are being amortized over a weighted-average useful life of approximately 42 years. The goodwill generated is primarily attributable to expected synergies and its portion relating to the step-acquisition is deductible for tax purposes. The transaction-related costs were expensed as incurred and were recorded within operating expenses. The pro forma effects of this acquisition would not materially impact the Company's reported results for any period presented and as a result, no pro forma financial statements have been presented.

Acquisition of R.H. Sheppard Co., Inc.

On September 18, 2017, the Company acquired R.H. Sheppard Co., Inc. (Sheppard) for cash consideration of \$165.2 million, excluding cash acquired of \$17.1 million, resulting in net cash paid of \$148.1 million. During the first quarter of 2018, the purchase price was adjusted under the purchase agreement for an additional cash payment of \$6.4 million, bringing the total purchase price to \$165.2 million. Sheppard is a supplier of steering technologies, precision-engineered engine pumps and remanufacturing services for commercial vehicles.

The allocation of the purchase consideration to the assets acquired and liabilities assumed as of the acquisition date has been final as of September 30, 2018. During the year ended December 31, 2018, the Company made adjustments to the purchase price allocation, to increase property, plant and equipments and other liabilities by \$17.4 million and \$8.0 million, respectively, and to decrease inventories, intangible assets, accrued expenses and deferred tax liabilities by \$3.3 million, \$2.8 million, \$0.5 million and \$3.2 million, respectively. This resulted in a total net decrease of \$0.6 million to goodwill, considering the increase to the purchase price of \$6.4 million mentioned above. The following table summarizes the allocation of the net purchase consideration:

Table of Contents

(Amounts in millions)

Cash & cash equivalents	\$17.1	
Accounts receivable	17.5	
Inventories	21.4	
Other current assets	1.1	
Property, plant & equipment	66.4	
Intangible assets	23.1	
Other assets acquired	4.8	
Trade payables	(4.3)
Accrued expenses	(4.2)
Deferred tax liabilities	(22.6)
Other Liabilities	(8.0)
Identifiable net assets acquired	\$112.3	
Goodwill	52.9	
Net purchase consideration	\$165.2	

The intangible assets include amounts recognized for the fair value of customer-based assets and developed technology. The fair value of intangible assets was determined based on an income and cost approach. The intangible assets are being amortized over a weighted-average useful life of approximately 14 years. The goodwill generated is primarily attributable to expected synergies and is not deductible for tax purposes. The transaction-related costs were expensed as incurred and were recorded within operating expenses. The pro forma effects of this acquisition would not materially impact the Company's reported results for any period presented and as a result, no pro forma financial statements have been presented.

Other Acquisitions

On June 6, 2018, the Company acquired Asset Trackr Private Limited (Asset Trackr) for total purchase consideration of \$2.9 million, primarily for goodwill and intangible assets. Of the total purchase consideration, \$2.2 million has been paid and the remaining cash consideration is expected to be paid in the next 18 months, in accordance with the terms of the acquisition agreement. Asset Trackr is an India-based start-up company that helps commercial vehicle fleets track, analyze and optimize their transportation resources and assets in real time.

NOTE 23. Subsequent Events

Subsequent to December 31, 2018, the General Court issued a judgment to annul the Decision of the European Commission, which had previously declared the Belgium EPR regime as illegal and incompatible with European State Aid law. As of December 31, 2018, the Company had recorded an unrecognized tax benefit of \$32.9 million for the remaining EPR deductions. The Company anticipates the European Commission to announce its intention whether to appeal the judgment during 2019, at which time we will reassess this unrecognized tax benefit.

Table of Contents

NOTE 24. Quarterly Data (Unaudited)

(Amounts in millions)	Year 2018			
	First	Second	Third	Fourth
Sales	\$1,003.3	\$1,001.2	\$914.8	\$911.6
Cost of sales	694.3	690.9	639.7	633.5
Gross profit	309.0	310.3	275.1	278.1
Income before income taxes	133.0	132.8	93.3	104.6
Income tax expense/(benefit)	26.3	23.5	13.5	(14.0)
Net income attributable to Company	\$100.7	\$104.4	\$74.5	\$114.5
Net income per common share				
Basic	\$1.87	\$1.96	\$1.42	\$2.21
Diluted	\$1.87	\$1.95	\$1.41	\$2.20

(Amounts in millions)	Year 2017			
	First	Second	Third	Fourth
Sales	\$747.3	\$795.0	\$827.8	\$934.1
Cost of sales	507.1	547.5	578.2	657.5
Gross profit	240.2	247.5	249.6	276.6
Income before income taxes	99.6	105.5	88.7	358.8
Income tax expense	15.3	14.0	14.4	186.1
Net income attributable to Company	\$80.7	\$87.2	\$69.8	\$168.3
Net income per common share				
Basic	\$1.49	\$1.62	\$1.30	\$3.13
Diluted	\$1.48	\$1.61	\$1.30	\$3.12

The sum of each value line for the four quarters does not necessarily equal the amount reported for the full year because of rounding.

Table of Contents

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

None.

ITEM 9A. CONTROLS AND PROCEDURES

The Company has established a Disclosure Controls Committee that assists the Chief Executive Officer and Chief Financial Officer in their evaluation of the Company's disclosure controls and procedures. Our Chief Executive Officer and Chief Financial Officer have concluded, based on their evaluation as of the end of the period covered by this report, that our disclosure controls and procedures, as defined in the Securities Exchange Act of 1934, Rule 13a-15(e), are effective to ensure that the information required to be disclosed in the reports that the Company files or submits under the Securities Exchange Act of 1934 is recorded, processed, summarized and reported, within the time periods specified in the Securities and Exchange Commission's (SEC) rules and forms, and (ii) is accumulated and communicated to the Company's management, including our Chief Executive Officer and Chief Financial Officer, as appropriate to allow timely decisions regarding required disclosure. There have been no changes in internal control over financial reporting during the most recent fiscal quarter that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Management's Report On Internal Control Over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting for the Company. The Company's internal control over financial reporting is designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of consolidated financial statements for external purposes in accordance with generally accepted accounting principles. The Company's internal control over financial reporting includes those policies and procedures that:

- (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the Company,
 - provide reasonable assurance that transactions are recorded as necessary to permit preparation of consolidated financial statements in accordance with generally accepted accounting principles, and that receipts and
- (ii) expenditures of the Company are being made only in accordance with authorizations of management and directors of the Company, and
- (iii) 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 consolidated financial statements.

Due to 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 and procedures included in such controls may deteriorate.

The Company conducted an evaluation of the effectiveness of its internal control over financial reporting based upon the 2013 framework in Internal Control - Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). Based upon such evaluation, our management concluded that the Company's internal control over financial reporting was effective as of December 31, 2018.

The Company's effectiveness of its internal control over financial reporting as of December 31, 2018, has been audited by Ernst & Young Bedrijfsrevisoren BCVBA/Reviseurs d'Entreprises SCCRL, an independent registered public accounting firm, as stated in their attestation report which is included immediately below.

WABCO Holdings Inc.

February 15, 2019

101

Table of Contents

Report of Independent Registered Public Accounting Firm

To the Shareholders and the Board of Directors of WABCO Holdings Inc.

Opinion on Internal Control over Financial Reporting

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

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

Basis for opinion

The Company's management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting included in the accompanying Management's Report On Internal Control Over Financial Reporting. Our responsibility is to express an opinion of 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 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 effective internal control over financial reporting was maintained in all material aspects.

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 Bedrijfsrevisoren BCVBA/Réviseurs d'Entreprises SCCRL

Diegem, Belgium
February 15, 2019

Table of Contents

ITEM 9B. OTHER INFORMATION

None.

103

Table of Contents

PART III

ITEM 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE

Pursuant to instruction G(3) to Form 10-K, the information required by Item 10 with respect to the Directors of the Company set forth under the heading “Proposal 1 - Election of Directors” and “Directors” in the Company's definitive proxy statement to be filed within 120 days following the end of the fiscal year covered by this report is incorporated herein by reference.

The information required by Item 10 with respect to the executive officers of the Company has been included in Part I of this Form 10-K (as Item 4A) under the heading “Executive Officers of the Registrant” in reliance on Instruction G(3) of Form 10-K and Instruction 3 to Item 401(b) of Regulation S-K.

Pursuant to instruction G(3) to Form 10-K, information concerning the Audit Committee and audit committee financial expert disclosure set forth under the headings “Governance - Board Matters and Committee Membership” and “- Committees of the Board - Audit Committee” in the Company's definitive proxy statement to be filed within 120 days following the end of the fiscal year covered by this report is incorporated herein by reference.

Pursuant to instruction G(3) to Form 10-K, information concerning compliance with Section 16(a) of the Securities Exchange Act of 1934 by officers and directors of the Company set forth under the heading “Certain Relationships or Related Person Transactions and Section 16 Reporting Compliance - Section 16(a) Beneficial Ownership Reporting Compliance” in the Company's definitive proxy statement to be filed within 120 days following the end of the fiscal year covered by this report is incorporated herein by reference.

Information regarding our Code of Conduct and Ethics set forth under the caption “Code of Conduct and Ethics” in Item 1 of Part I of this Form 10-K is incorporated herein by reference.

ITEM 11. EXECUTIVE COMPENSATION

Pursuant to Instruction G(3) to Form 10-K, information concerning director and officer executive compensation and related matters set forth under the headings “Report of the Compensation, Nominating and Governance Committee,” “Compensation Discussion and Analysis,” “Executive Compensation” and “Director Compensation” in the Company's definitive proxy statement to be filed within 120 days following the end of the fiscal year covered by this report is incorporated herein by reference.

Pursuant to instruction G(3) to Form 10-K, information concerning compensation committee interlocks and insider participation set forth under the headings “Governance - Compensation Committee Interlocks and Insider Participation” in the Company's definitive proxy statement to be filed within 120 days following the end of the fiscal year covered by this report is incorporated herein by reference.

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

Pursuant to Instruction G(3) to Form 10-K, information concerning shares of common stock of the Company beneficially owned by management and significant shareholders set forth under the heading “Common Stock Ownership of Officers, Directors and Significant Shareholders” in the Company's definitive proxy statement to be filed within 120 days following the end of the fiscal year covered by this report is incorporated herein by reference.

Pursuant to Instruction G(3) to Form 10-K, information concerning securities authorized for issuance under equity compensation plans set forth under the heading "Equity Compensation Plans" in the Company's definitive proxy statement to be filed within 120 days following the end of the fiscal year covered by this report is incorporated herein by reference.

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

Pursuant to Instruction G(3) to Form 10-K, information concerning certain relationships and related party transactions and director independence set forth under the headings "Certain Relationships or Related Person Transactions and Section 16 Reporting Compliance - Certain Relationships and Related Person Transactions," and "Governance - Independence Standards for Board

104

Table of Contents

Service” and “Availability of Corporate Governance Materials” in the Company's definitive proxy statement to be filed within 120 days following the end of the fiscal year covered by this report is incorporated herein by reference.

ITEM 14. PRINCIPAL ACCOUNTING FEES AND SERVICES

Pursuant to Instruction G(3) to Form 10-K, information concerning principal accounting fees and services set forth under the heading “Audit Committee Matters - Audit Committee's Pre-Approval Policies and Procedures” and “Audit and Non-Audit Fees” in the Company's definitive proxy statement to be filed within 120 days following the end of the fiscal year covered by this report is incorporated herein by reference.

105

Table of Contents

PART IV

ITEM 15. EXHIBITS AND FINANCIAL STATEMENT SCHEDULES

(a) 1. and 2. Financial statements and financial statement schedules

The financial statements and financial statement schedule listed in the Index to Financial Statements and Financial Statement Schedule on the following page are incorporated herein by reference.

(b) The exhibits to this Report are listed on the accompanying Index to Exhibits and are incorporated herein by reference or are file as part of this Annual Report on Form 10-K.

106

Table of Contents

INDEX TO FINANCIAL STATEMENTS AND FINANCIAL STATEMENT SCHEDULE

Page No.

1 Financial Statements:

Report of Independent Registered Public Accounting Firm 51

Consolidated Statements of Operations for years ended December 31, 2018, 2017 and 2016 51

Consolidated Statements of Comprehensive Income for years ended December 31, 2018, 2017 and 2016 53

Consolidated Balance Sheets at December 31, 2018 and 2017 54

Consolidated Statements of Cash Flows for years ended December 31, 2018, 2017 and 2016 55

Consolidated Statements of Shareholders' Equity for years ended December 31, 2018, 2017 and 2016 57

Notes to Financial Statements 58

2 Financial statement schedule, years ended December 31, 2018, 2017 and 2016

Schedule II - Valuation and Qualifying Accounts 108

All other schedules have been omitted because the information is not applicable or is not material or because the information required is included in the financial statements or the notes thereto.

Table of Contents

SCHEDULE II - VALUATION AND QUALIFYING ACCOUNTS

Years ended December 31, 2018, 2017 and 2016

(Amounts in thousands)

Description	Balance Beginning of Period	Additions Charged to Expense	Deductions	Foreign Currency Translation Effects	Balance End of Period
2018:					
Reserve deducted from assets:					
Allowance for doubtful accounts receivable	9,358	2,205	(390)	(438)	10,735
2017:					
Reserve deducted from assets:					
Allowance for doubtful accounts receivable	6,479	2,460	(445)	864	9,358
2016:					
Reserve deducted from assets:					
Allowance for doubtful accounts receivable	5,895	1,591	(830)	(177)	6,479

Table of Contents

WABCO HOLDINGS INC. AND SUBSIDIARIES
INDEX TO EXHIBITS

(The File Number of the Registrant, WABCO Holdings Inc., is 1-33332)

Certain of the following exhibits, designated with an asterisk (*) are filed herewith. The exhibits not so designated have been previously filed by the registrant with the Commission and are incorporated herein by reference to the documents indicated in parentheses, following the descriptions of such exhibits. Certain of the following exhibits, designated with a double asterisk (**) are management contracts or compensatory plans or arrangements.

Exhibit No. Description

- 2.1 Separation and Distribution Agreement, dated as of July 16, 2007, by and between Trane Inc. and WABCO Holdings Inc. (previously filed as Exhibit 2.1 to the Company's Form 8-K (File No. 001-33332), filed on July 20, 2007 and herein incorporated by reference).
- 3.1 Amended and Restated Certificate of Incorporation (previously filed as Exhibit 3.1 to the Company's Form 8-K (File No. 001-33332), filed on July 18, 2007 and herein incorporated by reference).
- 3.2 Amended and Restated By-Laws of WABCO Holdings Inc. (previously filed as Exhibit 3.2 to the Company's Form 10-K (File No. 001-33332), filed on July 19, 2018 and herein incorporated by reference).
- 4.1 Certificate of Designation of Junior Participating Cumulative Preferred Stock (previously filed as Exhibit 4.2 to the Company's Form 8-K (File No. 001-33332), filed on July 18, 2007 and herein incorporated by reference).
- 4.2 Form of Specimen Common Stock Certificate (previously filed as Exhibit 4.4 to the Company's Form 10-Q (File No. 001-33332), filed on November 8, 2007 and herein incorporated by reference).
- 10.1 Tax Sharing Agreement, entered into as of July 16, 2007, by and among Trane Inc. and certain of its subsidiaries and WABCO Holdings Inc. and certain of its subsidiaries (previously filed as Exhibit 10.1 to the Company's Form 8-K (File No. 001-33332), filed on July 20, 2007 and herein incorporated by reference).
- 10.2 Employee Matters Agreement, dated as of July 16, 2007, by and between Trane Inc. and WABCO Holdings Inc. (previously filed as Exhibit 10.3 to the Company's Form 8-K (File No. 001-33332), filed on July 20, 2007 and herein incorporated by reference).
- 10.3 Indemnification and Cooperation Agreement, made and entered into as of July 16, 2007, by and among Trane Inc. and certain of its subsidiaries and WABCO Holdings Inc. and certain of its subsidiaries (previously filed as Exhibit 10.4 to the Company's Form 8-K (File No. 001-33332), filed on July 20, 2007 and herein incorporated by reference).
- 10.4 Amended and Restated WABCO Holdings Inc.2009 Omnibus Incentive Plan (previously filed as Appendix C to the Company's Definitive Proxy Statement on Schedule 14A (File No. 001-33332), filed on April 19, 2013 and herein incorporated by reference).**
- 10.5 Amendment No. 1 to the Amended and Restated WABCO Holdings Inc.2009 Omnibus Incentive Plan (previously filed as Exhibit 10.1 the Company's Form 10-Q (File No. 001-33332), filed on April 21, 2017 and herein incorporated by reference).**

- 10.6 Amended and Restated WABCO Holdings Inc. Omnibus Incentive Plan (previously filed as Appendix C to the Company's Definitive Proxy Statement on Schedule 14A (File No. 001-33332), filed on April 12, 2018 and herein incorporated by reference).**
- 10.7 Form of Indemnification Agreement for executive officers and members of the Board of Directors (previously filed as Exhibit 10.6 to the Company's Form 10-12B, as amended (File No. 001-33332), filed on May 23, 2007 and herein incorporated by reference).**
- 10.8 Form of WABCO Holdings Inc. Stock Option Grant Agreement for U.S. Employees (previously filed as Exhibit 10.7 to the Company's Form 10-Q (File No. 001-33332), filed on November 8, 2007 and herein incorporated by reference).**
- 10.9 Form of WABCO Holdings Inc. Stock Option Grant Agreement for Non-U.S. Employees (previously filed as Exhibit 10.8 to the Company's Form 10-Q (File No. 001-33332), filed on November 8, 2007 and herein incorporated by reference).**
- 10.10 Form of WABCO Holdings Inc. Restricted Unit Grant Agreement for U.S. Employees (previously filed as Exhibit 10.9 to the Company's Form 10-Q (File No. 001-33332), filed on November 8, 2007 and herein incorporated by reference).**
- 10.11 Form of WABCO Holdings Inc. Restricted Unit Grant Agreement for Non-U.S. Employees (previously filed as Exhibit 10.10 to the Company's Form 10-Q (File No. 001-33332), filed on November 8, 2007 and herein incorporated by reference).**
- 10.12 Form of WABCO Holdings Inc 2009 Omnibus Incentive Plan Performance-Based Restricted Unit Grant Agreement (previously filed as Exhibit 10.1 to the Company's Form 10-Q (File No. 001-33332), filed on July 28, 2011 and herein incorporated by reference).**
- 10.13 Form of Director Deferred Stock Unit Award Agreement under the WABCO Holdings Inc 2009 Omnibus Incentive Plan (previously filed as Exhibit 10.2 to the Company's Form 10-Q (File No. 001-33332), filed on July 26, 2013 and herein incorporated by reference).**
- 10.14 WABCO Holdings Inc. Change of Control Severance Plan (previously filed as Exhibit 10.11 to the Company's Form 10-Q (File No. 001-33332), filed on November 8, 2007 and herein incorporated by reference).**
- 10.15 Amendment No. 1 to WABCO Holdings Inc. Change of Control Severance Plan, (previously filed as Exhibit 10.1 to the Company's Form 8-K (File No. 001-33332), filed on July 14, 2008 and herein incorporated by reference).**
- 10.16 Amendment No. 2 to WABCO Holdings Inc. Change of Control Severance Plan, effective as of December 31, 2008 (previously filed as Exhibit 10.14 to the Company's Form 10-K (File No. 001-33332), filed on February 24, 2009 and herein incorporated by reference).**
- 10.17 Amendment No. 3 to WABCO Holdings Inc. Change of Control Severance Plan, effective as of January 1, 2012 (previously filed as Exhibit 10.17 to the Company's Form 10-K, as amended (File No. 001-33332), filed on February 17, 2012 and herein incorporated by reference).**
- 10.18 Amendment No. 4 to WABCO Holdings Inc. Change of Control Severance Plan, effective as of November 30, 2012 (previously filed as Exhibit 10.18 to the Company's Form 10-K (File No. 001-33332), filed on February 15, 2013 and herein incorporated by reference).**

- 10.19 WABCO Holdings Inc. Deferred Compensation Plan (previously filed as Exhibit 10.1 to the Company's Form S-8 (File No. 333-148972), filed on January 31, 2008 and herein incorporated by reference).**
- 10.20 Amendment to WABCO Holdings Inc. Deferred Compensation Plan, effective as of December 31, 2008 (previously filed as Exhibit 10.16 to the Company's Form 10-K (File No. 001-33332), filed on February 24, 2009 and herein incorporated by reference).**
- 10.10 WABCO Holdings Inc. Supplemental Savings Plan (previously filed as Exhibit 10.20 to the Company's Form 10-Q (File No. 001-33332), filed on November 8, 2007 and herein incorporated by reference).**
- 10.22 Amendment to WABCO Holdings Inc. Supplemental Savings Plan, effective as of December 31, 2008 (previously filed as Exhibit 10.18 to the Company's Form 10-K (File No. 001-33332), filed on February 24, 2009 and herein incorporated by reference).**
- 10.23 Non-Qualified Deferred Compensation Program for Belgian Executives (Summary of French Language Program Document) (previously filed as Exhibit 10.1 to the Company's Form 10-Q (File No. 001-33332), filed on May 7, 2009 and herein incorporated by reference).**
- 10.24 Management Agreement, effective as of January 1, 2012 between WABCO Europe SPRL/BVBA and Jacques Esculier (previously filed as Exhibit 10.31 to the Company's Form 10-K (File No. 001-33332), filed on February 15, 2013 and herein incorporated by reference).**

Table of Contents

- 10.25 Long-Term Incentive Award Agreement effective as of February 6, 2018 between WABCO Holdings Inc. and Jacques Esculier (previously filed as Exhibit 10.2 to the Company's Form 10-Q (File No. 001-33332), filed on April 19, 2018 and herein incorporated by reference). **
- 10.26 Management Agreement effective January 1, 2012 between WABCO Europe SPRL/BVBA and Nick Rens (previously filed as Exhibit 10.1 to the Company's Form 10-Q (File No. 001-33332), filed on October 20, 2016 and herein incorporated by reference). **
- 10.27 Management Agreement effective July 1, 2014 between WABCO Europe SPRL/BVBA and Nicolas Bardot (previously filed as Exhibit 10.1 to the Company's Form 10-Q (File No. 001-33332), filed on July 20, 2017 and herein incorporated by reference). **
- 10.28 Management Agreement effective January 1, 2012 between WABCO Europe SPRL/BVBA and Jorge Solis (previously filed as Exhibit 10.2 to the Company's Form 10-Q (File No. 001-33332), filed on July 20, 2017 and herein incorporated by reference). **
- 10.29 Settlement Agreement effective November 28, 2018 between WABCO Europe SPRL/BVBA and Jorge Solis. **
- 10.30 Employment Agreement and Benefits Letter effective December 28, 2018 between WABCO Global GmbH and Alexander De Bock. **
- 10.31 Management Agreement effective April 5, 2018 between WABCO Europe SPRL/BVBA and Roberto Fioroni (previously filed as Exhibit 10.1 to the Company's Form 10-Q (File No. 001-33332), filed on April 19, 2018 and herein incorporated by reference). **
- 10.32 Stock Purchase Agreement, made on February 12, 2014, among Creafund Transics Shares Stille Maatschap, Ludwig Lemenu, Walter Mastelinck, Cassel BVBA, Uniholding SA and WABCO Europe BVBA (previously filed as Exhibit 10.1 to the Company's Form 10-Q (File No. 001-33332), filed on April 25, 2014 and herein incorporated by reference).
- 10.33 Note Purchase Agreement, dated May 8, 2015, among WABCO Holdings Inc. and each of the purchasers party thereto (previously filed as Exhibit 10.1 to the Company's Current Report on Form 8-K (File No. 001-33332), filed on May 11, 2015 and herein incorporated by reference).
- 10.34 Offer letter from WABCO Holdings Inc. to Sean Deason, dated April 24, 2015 (previously filed as Exhibit 10.2 to the Company's Form 10-Q (File No. 001-33332), filed on July 24, 2015 and herein incorporated by reference). **
- 10.35 Amendment Agreement dated September 30, 2015 relating to a \$400,000,000 Amended and Restated Facility Agreement for WABCO Holdings Inc. arranged by Citibank, N.A., London Branch, ING Belgium S.A./N.V., Bank of America Merrill Lynch International Limited, The Bank of Tokyo-Mitsubishi UFJ, Ltd., BNP Paribas Fortis S.A./N.V., Credit Lyonnais, The Royal Bank of Scotland Plc and UniCredit AG as Lenders (previously filed as Exhibit 10.1 to the Company's Current Report on Form 8-K (File No. 001-33332), filed on October 6, 2015 and herein incorporated by reference).
- 10.36 Amendment Agreement dated June 25, 2018 relating to a \$600,000,000 Amended and Restated Facility Agreement for WABCO Holdings Inc. coordinated by Citigroup Global Markets Limited and arranged by Bank of America Merrill Lynch International Limited, BNP Paribas Fortis SA/NV, Citigroup Global Markets Limited, HSBC Bank plc, Brussels Branch, ING Belgium SA/NV, MUFG Bank, Ltd. (formerly known as The Bank of

Tokyo-Mitsubishi UFJ, Ltd.), and UniCredit Bank AG (previously filed as Exhibit 10.1 to the Company's Form 8-K (File No. 001-33332), filed on June 26, 2018 and herein incorporated by reference))

10.37 Note Purchase Agreement, dated October 17, 2016, among WABCO Holdings Inc. and each of the purchasers party thereto (previously filed as Exhibit 10.1 to the Company's Form 8-K (File No. 001-33332), filed on October 20, 2016 and herein incorporated by reference).

10.38 Promissory Loan Agreement in the principal amount of € 10 million, dated March 22, 2018, among WABCO Europe BVBA, UniCredit Bank AG, and WABCO Holdings Inc. (previously filed as Exhibit 10.1 to the Company's Form 8-K (File No. 001-33332), filed on March 28, 2018 and herein incorporated by reference).

Table of Contents

10.39 Promissory Loan Agreement in the principal amount of € 40 million, dated March 22, 2018, among WABCO Europe BVBA, UniCredit Bank AG, and WABCO Holdings Inc. (previously filed as Exhibit 10.2 to the Company's Form 8-K (File No. 001-33332), filed on March 28, 2018 and herein incorporated by reference).

10.40 Promissory Loan Agreement in the principal amount of € 50 million, dated March 22, 2018, among WABCO Europe BVBA, UniCredit Bank AG, and WABCO Holdings Inc. (previously filed as Exhibit 10.3 to the Company's Form 8-K (File No. 001-33332), filed on March 28, 2018 and herein incorporated by reference).

10.41 Promissory Loan Agreement in the principal amount of € 60 million, dated March 22, 2018, among WABCO Europe BVBA, UniCredit Bank AG, and WABCO Holdings Inc. (previously filed as Exhibit 10.4 to the Company's Form 8-K (File No. 001-33332), filed on March 28, 2018 and herein incorporated by reference).

10.42 Promissory Loan Agreement in the principal amount of € 60 million, dated March 22, 2018, among WABCO Europe BVBA, UniCredit Bank AG, and WABCO Holdings Inc. (previously filed as Exhibit 10.5 to the Company's Form 8-K (File No. 001-33332), filed on March 28, 2018 and herein incorporated by reference).

10.43 Promissory Loan Agreement in the principal amount of € 80 million, dated March 22, 2018, among WABCO Europe BVBA, UniCredit Bank AG, and WABCO Holdings Inc. (previously filed as Exhibit 10.6 to the Company's Form 8-K (File No. 001-33332), filed on March 28, 2018 and herein incorporated by reference).

21.1 Subsidiaries of the Company.*

23.1 Consent of Ernst & Young Bedrijfsrevisoren BCVBA/Réviseurs d'Entreprises SCCRL.*

24.1 Powers of Attorney (G. Peter D'Aloia, Dr. Juergen Gromer, Henry R. Keizer, Michael T. Smith, Thomas Gross, Jean-Paul L. Montupet and David N. ("Nick") Reilly).*

31.1 Certification of the Chief Executive Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.*

31.2 Certification of the Chief Financial Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.*

32.1 Certification of the Chief Executive Officer pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.*

32.2 Certification of the Chief Financial Officer pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.*

101 The following financial information from WABCO Holdings Inc.'s Annual Report on Form 10-K for the period ended December 31, 2018, filed with the SEC on February 15, 2019, formatted in Extensible Business Reporting Language (XBRL): (i) the Consolidated Statements of Operations, (ii) the Consolidated Statements of Comprehensive Income, (iii) the Consolidated Balance Sheets, (iv) the Consolidated Statements of Cash Flows, (v) the Consolidated Statements of Shareholders' Equity, and (vi) Notes to the Consolidated Financial Statements.

Table of Contents

ITEM 16. FORM 10-K SUMMARY

None.

SIGNATURES

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

WABCO HOLDINGS INC.

By: /s/ Jacques Esculier
 Jacques Esculier
 Chief Executive Officer and Director

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.

Signatures	Title	Date
/s/ Jacques Esculier Jacques Esculier	Chief Executive Officer and Chairman of the Board of Directors (Principal Executive Officer)	February 15, 2019
/s/ Roberto Fioroni Roberto Fioroni	Chief Financial Officer	February 15, 2019
/s/ Sean Deason Sean Deason	Vice President Controller and Investor Relations	February 15, 2019
* Jean-Paul L. Montupet	Director	February 15, 2019
* G. Peter D'Aloia	Director	February 15, 2019
* Dr. Juergen Gromer	Director	February 15, 2019
* Henry R. Keizer	Director	February 15, 2019
* Michael T. Smith	Director	February 15, 2019
* Thomas Gross	Director	February 15, 2019

* Director
David N. ("Nick") Reilly

February 15, 2019

* Signed by Attorney-in-fact
/s/ Lisa J. Brown
Lisa J. Brown
Attorney-in-fact

112