We Deliver Propulsion

Stockholders letter and annual report on form 10-K

Combustion Hybrid Electric

BorgWarner

2016

BORGWARNER TODAY: Balance and

DEAR FELLOW STOCKHOLDERS,

Over the course of my 28-year career at BorgWarner, people have often asked me what is the secret to our success. There are two parts to the answer, with the first and most crucial – our people – appearing to be a simple response. However, building and nurturing an engaged and dedicated team is no small feat, and is predicated on the daily contributions from every person at the Company to strengthen our position in the industry. Based on these ongoing efforts, the name BorgWarner continues to be synonymous with cutting-edge technology and quality, allowing us to recruit and retain a team of approximately 27,000 people in 17 countries around the world, that is second to none!

The second part of the "secret to our success" answer is best outlined using the three key factors we have consistently highlighted over the years – and continue to provide an excellent

JAMES VERRIER,
President and Chief Executive Officer

Diversity

roadmap for the Company going forward:

- **Technology Leadership**
- **Customer, Geographic and Propulsion System Diversity**
- **Financial Strength and Discipline**

While these three main areas of focus have been at the core of our corporate identity for many years, they have evolved over time, most recently to include propulsion system diversity. Today, we passionately refer to ourselves as a propulsion company, which we believe best encapsulates the diverse array of products we provide for our global customer base. Our track record of success demonstrates our leadership in clean, energy-efficient solutions for combustion, hybrid, and electric vehicles.

IN SHORT, WE DELIVER PROPULSION!

Earnings Performance*

Per Diluted Share *Excludes special items.

Sales Growth

Billions of Dollars

While the methods of transporting people and goods have been evolving since the invention of the wheel, the rate of change continues to increase exponentially. At BorgWarner, we have maintained our commitment to constantly advance the technologies that improve efficiency, emissions, and performance in all types of vehicles. Today, we remain at the forefront of technology leadership. We are setting the pace and driving changes across the industry, while maintaining our strong competitive positioning. Our company has been the true innovator in the industry throughout our more than 90-year history. Propulsion system diversity is the best way to simply describe the breadth and depth of our offering as well as our ability to lead the way as the automotive space continues to transform in the 21st Century.

We firmly believe the key to our future success is the balance across propulsion systems combined with customer and geographic diversity to form the second key factor. We partner with every major OEM and our revenue is well-balanced geographically around the world. No single customer comprises more than 15% of our overall business and our geographic balance remains broad and strong. These two elements help to minimize risks and insulate us from varying regulations, consumer demands, automaker requirements, and regional economic shifts. BorgWarner has a long history of adapting to stay ahead of the competition; as we evolve into the next phase of growth, we will continue to adapt as penetration rates for our products and average content per vehicle continue to grow in 2017 and beyond.

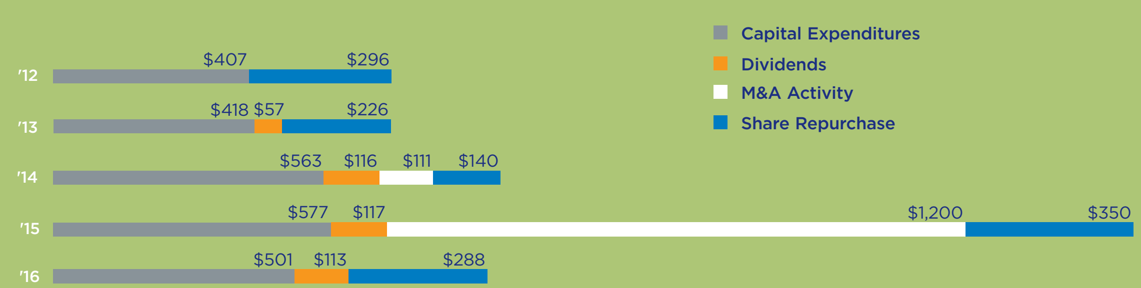
While they are sometimes easy to overlook, financial strength and discipline are the most important hallmarks of our Company and, quite frankly, are the reasons we have been able to excel in the previous two areas. Without our financial strength we would not be able to make the necessary internal investments and expand our offering to maintain our leadership position. On behalf of the Company, I'd like to personally thank our global finance leadership team for their ongoing sound stewardship that continually ensures our robust financial health, which in turn allows us to succeed.

2016: Building upon our success

Looking back, I would characterize our 2016 operating performance as very strong. The primary reason for that assessment is our ability to deliver on our promises and meet or exceed the expectations we placed on ourselves, which is extremely important for all stakeholders. Not only did we meet or exceed our top- and bottom-line financial expectations, we also implemented a robust forecasting methodology, set expectations, and delivered on them. We were able to accomplish all of this in spite of the significant macro environment headwinds we faced.

In summary, our 2016 U.S. GAAP net sales increased more than 13% to approximately $9 billion when compared to 2015. Even excluding the impact of foreign currencies and the net impact

Uses of Cash | Millions of Dollars

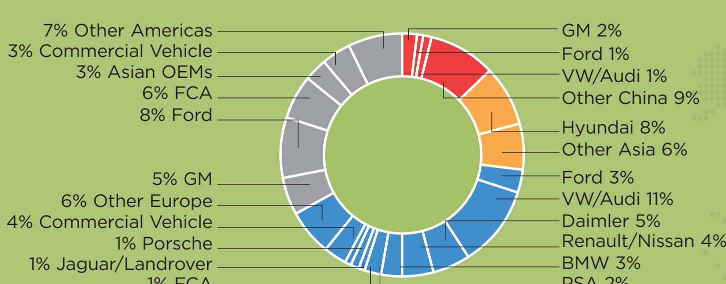


of the Remy acquisition, net sales increased approximately 5% compared to 2015. Our organic growth came in towards the high end of our guidance range and we produced solid operating performance. We reported U.S. GAAP operating income of $226 million, which included approximately $890 million of pretax expenses related to non-comparable items. This generated U.S. GAAP net earnings of $0.55 per diluted share, which included the $(2.72) per diluted share related to non-comparable items, which are detailed in the 10-K.

Several of our facilities won safety, training, and "Great Place to Work" awards. Our facility in El Salto, Mexico won the State of Jalisco's Safety and Health Award, our Emissions Systems facility in Chungju, South Korea received the prestigious Minister of Employment and Labor Award and our Powertrain Technical Center in Auburn Hills, Michigan received a Michigan Works! Impact Award, both in recognition of our current and new employee training programs that encourage innovation and cultivate talent.

Our success in 2016 was not solely financial. We are grateful that our customers and industry experts chose to recognize BorgWarner for our innovative, high-quality products; excellent job development and safety programs; and our industry-leading customer service.

Customer Diversity Worldwide | 2016 Sales



Asia	China	Americas	Europe
EX. CHINA 14%	13%	33%	40%

...whether it's in electrics, whether it's in hybrids, or combustion power products, **BorgWarner is and will continue to be the leader in that space.**

Electric Drive Moldule (eDM)

eGearDrive® Transmission

Our campus in Ramos-Arizpe, Mexico won two awards from The Great Place to Work® Institute as one of the 100 Best Companies to Work for in Mexico.

In addition, several of our facilities were recognized for their excellence by our customers. Our facility in Itatiba, Brazil, received Ford's Q1 Award, its highest designation for suppliers, in recognition of consistently good performance in quality, delivery, robust operating systems, material management, and compliance with environmental system requirements. Our facility in San Luis Potosi, Mexico, was awarded Toyota Group's prestigious Excellence in Quality Award for achieving an impressive year-long record of 100% on-time delivery and zero plant rejections.

Of course, 2016 was also our first full year with former Remy operations as part of the business. Following the completion of the acquisition in December 2015, we have worked closely with the Remy team to integrate, collaborate, and share best practices. Perhaps this is best exemplified by the November 2016 launch of the electric drive module (eDM) with integrated eGearDrive® transmission. Production is expected to begin in summer 2017 for two pure electric vehicles from a major Chinese automaker. The fact that teams from Remy and BorgWarner were able to combine resources and bring this product to market in less than a year is a real testament to the collaboration efforts and the strength of the expertise across both teams. We believe our eGearDrive® transmission exemplifies the type of programs we expect to produce going forward and why the BorgWarner and Remy teams are an impressive combination.

Consistent growth and robust backlog

Earlier this year, we issued another strong net new business backlog, which we expect to drive a compound annual organic growth rate of five-to-seven percent from 2016 through 2019. For the years 2017 through 2019, we provided a range of $1.35 billion to $1.95 billion in our three-year backlog, which is approximately 20% higher at the midpoint versus our prior three-year backlog. This represents a meaningful increase and highlights our confidence in the growth outlook.

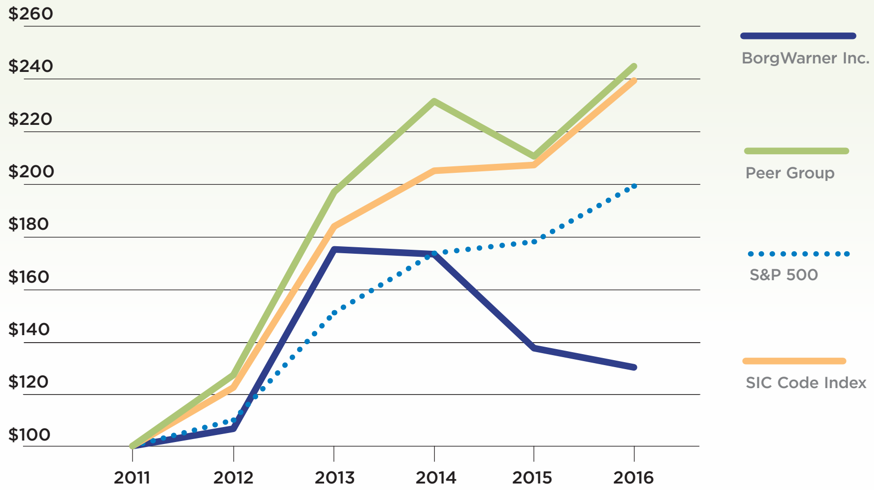
This information also highlights the strong balance and future diversity of our business across Asia, the Americas, and Europe, which are expected to account for approximately 40%, 39%, and 21% of the total net new business backlog over the three-year period, respectively. Approximately 32% of the net new business backlog is expected in China with approximately 25% with the North American domestic OEMs. Our top customers in the backlog include OEMs from all three major regions, meaning our business will not become overly reliant on any one region.

The updated forecasting process we have implemented is working well and has helped us navigate through significant end-market volatility, including changes in launch timing, volumes, and conditions in certain end markets and subsectors. With a multitude of external factors impacting our business, I am very proud that our 2017 and 2018 backlog numbers remain unchanged at the start of the year. It is clear the process we put in place last year has significantly reduced the variability in the announcement and led to stability in the data this year.

As a result of the Remy acquisition that we completed near the end of 2015, the backlog includes programs

Total Stockholder Return

$100 invested on 12/31/11 in stock or index, including reinvestment of dividends. Fiscal year ending December 31.



related to rotating electric components including starters, alternators, and electric motors. One of the reasons for acquiring Remy was their ability to become a major contributor to our backlog, as well as our future growth, and we are now seeing that start to come to fruition.

We have also provided healthy guidance for the full year 2017, with net sales expected to be between approximately $8.8 billion and $9 billion, which implies organic sales growth of 3.5% to 6.0%, excluding certain items such as the impact of weaker foreign currencies and continued margin improvement. In turn, this should produce free cash flow within a range of $450 million to $500 million. We are pleased with our projections and the overall outlook for 2017 as we remain committed to being a mid- to high-single digit organic growth company.

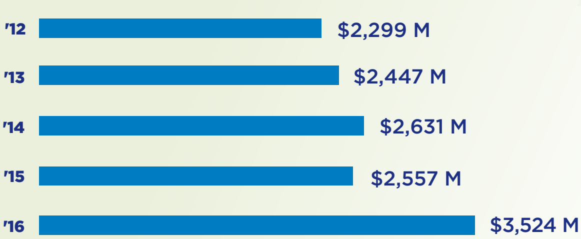
Balanced approach to capital deployment

Our board of directors unanimously believes that a balanced approach to capital deployment provides the best overall return for our shareholders. In keeping with that approach, we expect to return cash via our quarterly dividend, which currently stands at $0.14 per share of common stock and was last paid on March, 15, 2017. In addition, we plan to repurchase approximately $100 million of our shares during 2017.

While we have faith in our tremendous internal research and development

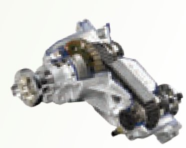
The Drivetrain Segment harnesses a legacy of more than 100 years as an industry innovator in transmission and all-wheel drive technology. The group is leveraging its understanding of powertrain clutching technology to develop interactive control systems and strategies for all types of torque management.

Sales in Millions of Dollars




DualTronic™ Transmission Clutch Modules

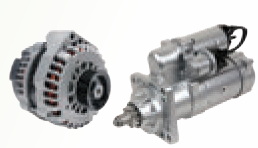

GenerationV All-Wheel Drive


All-Wheel Drive Transfer Cases


Transmission One-Way Clutches


Transmission Control Modules


Transmission Friction Products


Rotating Electrics


Electric Motors and Transmissions

capabilities, no one team or company is omniscient and we will continue to explore ways to supplement our organic growth via strategic acquisitions. In particular, we will look to acquire innovative technologies that will complement and combine well with our existing resources to ensure we remain at the forefront of the industry.

Current position bodes well for the future

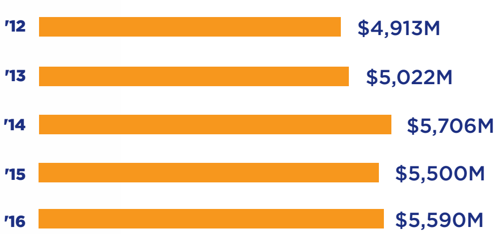
The need for advanced propulsion technology continues to grow rapidly in combustion, hybrid, and electric. In turn, the continued strong adoption rate of our technology will continue to drive the consistent growth in our overall business. As we look toward the longer-term, we expect approximately 20% of all light vehicles to be either hybrid or electric during the next decade, and BorgWarner is on track to generate revenues that reflect the industry. In the near term, our portion of electric and hybrid revenue is growing, and we are aligned to move with the market's future propulsion mix. In fact, as I write this, we are engaged with every major OEM regarding hybrid and electric vehicle development.

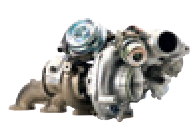
Our teams are working on many advanced programs and remain very active and aggressive in the space, expecting to build upon the new business wins we have already announced in 2017. It is important to note that the cycle for development remains consistent at approximately three-to-four years as the propulsion evolution occurs. However, a key difference is that BorgWarner is becoming involved much earlier in the process and is not only shaping the propulsion architecture, but also influencing the overall vehicle architecture. Our teams have earned trusted partnerships with customers. We leverage these relationships to gain a deeper understanding of the challenges our customers face and then develop the next solution. The significant amount of collaboration speaks to the high level of expertise we provide and the regard with which they hold our people.

During the next decade, we expect hybrid and electric vehicles to become a much larger proportion of the overall market. The crucial inflection point is approximately five years from now

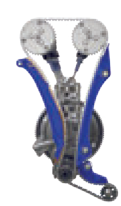
The Engine Segment develops air management strategies and products to optimize engines for fuel efficiency, reduced emissions and enhanced performance. BorgWarner's expertise in engine timing systems, boosting systems, ignition systems, air and noise management, cooling and controls is the foundation for this collaboration in development.

Sales in Millions of Dollars





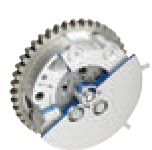
Regulated Two-Stage Turbocharger



Engine Timing

Exhaust Gas Recirculation

Cooling Systems



Cam Torque Actuated Variable Cam Timing

BorgWarner will provide its full financial report electronically as part of its environmental initiative to conserve resources and reduce costs. For more information on the company's financial performance and sustainability initiatives, please visit our website at borgwarner.com.

when we believe meaningful changes in the mix will accelerate rapidly in the subsequent years. The consistent theme we hear from OEMs is that balance across all three architectures will be important. In other words, while each fleet and program will have different mixes and combinations, the need for balance across combustion, hybrid, and electric propulsion systems remains strong.

Always at the forefront

In closing, there are few challenges today as important as creating solutions that support a cleaner, more energy-efficient world. Our focus on propulsion system diversity matches the vehicle mobility trends we are seeing across the globe, and our deep product portfolio means we are well positioned to meet the future propulsion needs of our global customer base. As BorgWarner evolves into its next phase of growth, as it has many times in its 90-year history of innovation, technological leadership will continue to be a key differentiator as we build upon our strengths and forge new frontiers at the forefront of propulsion.

Our financial strength and discipline will continue to underpin our success as we remain focused on maintaining our long-term profitable growth trajectory. We are confident in our ability to execute our plan and deliver our goal of mid- to high-single digit organic growth. Thank you for your ongoing support of BorgWarner, I look forward to reporting on our successful progress in the years ahead.

Sincerely,

James Verrier
President and Chief Executive Officer

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

Form 10-K
ANNUAL REPORT

(Mark One)

☑ Annual Report Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934
For the fiscal year ended December 31, 2016
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: 1-12162

BorgWarner Inc.

(Exact name of registrant as specified in its charter)

Delaware	13-3404508
State or other jurisdiction of Incorporation or organization	(I.R.S. Employer Identification No.)

3850 Hamlin Road,
Auburn Hills, Michigan 48326
(Address of principal executive offices) (Zip Code)
Registrant's telephone number, including area code: (248) 754-9200
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: 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 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 (§ 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, or a smaller reporting company. See the definitions of "large accelerated filer," "accelerated filer" and "smaller reporting company" in Rule 12b-2 of the Exchange Act. (Check one):

Large accelerated filer ☑	Accelerated filer ☐	Non-accelerated filer ☐	Smaller reporting company ☐
		(Do not check if a smaller reporting company)	

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 common stock of the registrant held by stockholders (not including voting common stock held by directors and executive officers of the registrant) on June 30, 2016 (the last business day of the most recently completed second fiscal quarter) was approximately $6.3 billion.

As of February 3, 2017, the registrant had 212,690,967 shares of voting common stock outstanding.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the following documents are incorporated herein by reference into the Part of the Form 10-K indicated.

Document	Part of Form 10-K into which incorporated
Portions of the BorgWarner Inc. Proxy Statement for the 2017 Annual Meeting of Stockholders	*Part III*

BORGWARNER INC.

FORM 10-K

YEAR ENDED DECEMBER 31, 2016

INDEX

CAUTIONARY STATEMENTS FOR FORWARD-LOOKING INFORMATION

Statements contained in this Form 10-K (including Management's Discussion and Analysis of Financial Condition and Results of Operations) may contain forward-looking statements as contemplated by the 1995 Private Securities Litigation Reform Act (the "Act") that are based on management's current outlook, expectations, estimates and projections. Words such as "anticipates," "believes," "continues," "could," "designed," "effect," "estimates," "evaluates," "expects," "forecasts," "goal," "initiative," "intends," "outlook," "plans," "potential," "project," "pursue," "seek," "should," "target," "when," "would," and variations of such words and similar expressions are intended to identify such forward-looking statements. All statements, other than statements of historical fact contained or incorporated by reference in this Form 10-K, that we expect or anticipate will or may occur in the future regarding our financial position, business strategy and measures to implement that strategy, including changes to operations, competitive strengths, goals, expansion and growth of our business and operations, plans, references to future success and other such matters, are forward-looking statements. Accounting estimates, such as those described under the heading "Critical Accounting Policies" in Item 7 of this Annual Report on Form 10-K, are inherently forward-looking. These statements are based on assumptions and analyses made by us in light of our experience and our perception of historical trends, current conditions and expected future developments, as well as other factors we believe are appropriate in the circumstances. Forward-looking statements are not guarantees of performance and the Company's actual results may differ materially from those expressed, projected or implied in or by the forward-looking statements.

You should not place undue reliance on these forward-looking statements, which speak only as of the date of this Annual Report. Forward-looking statements are subject to risks and uncertainties, many of which are difficult to predict and generally beyond our control. Such risks and uncertainties include: fluctuations in domestic or foreign vehicle production; the continued use by original equipment manufacturers of outside suppliers, the ability to achieve anticipated benefits from, and to successfully integrate, acquisitions, fluctuations in demand for vehicles containing our products; changes in general economic conditions; and the other risks noted under Item 1A, "Risk Factors," and in other reports that we file with the Securities and Exchange Commission. We do not undertake any obligation to update or announce publicly any updates to or revision to any of the forward-looking statements in this Form 10-K to reflect any change in our expectations or any change in events, conditions, circumstances, or assumptions underlying the statements.

This section and the discussions contained in Item 1A, "Risk Factors," and in Item 7, subheading "Critical Accounting Policies" in this report, are intended to provide meaningful cautionary statements for purposes of the safe harbor provisions of the Act. This should not be construed as a complete list of all of the economic, competitive, governmental, technological and other factors that could adversely affect our expected consolidated financial position, results of operations or liquidity. Additional risks and uncertainties not currently known to us or that we currently believe are immaterial also may impair our business, operations, liquidity, financial condition and prospects.

Use of Non-GAAP Financial Measures

In addition to results presented in accordance with accounting principles generally accepted in the United States of America ("GAAP"), this report includes non-GAAP financial measures. The Company believes these non-GAAP financial measures provide additional information that is useful to investors in understanding the underlying performance and trends of the Company. Readers should be aware that non-GAAP financial measures have inherent limitations and should be cautious with respect to the use of such measures. To compensate for these limitations, we use non-GAAP measures as comparative tools, together with GAAP measures, to assist in the evaluation of our operating performance or financial condition. We ensure that these measures are calculated using the appropriate GAAP or regulatory components in their entirety and that they are computed in a manner intended to facilitate consistent period-to-period comparisons. The Company's method of calculating these non-GAAP measures may differ from methods used by other companies. These non-GAAP measures should not be considered in isolation or as a substitute for those financial measures prepared in accordance with GAAP or in-effect regulatory requirements. Where non-GAAP financial measures are used, the most directly comparable GAAP or regulatory financial measure, as well as the reconciliation to the most directly comparable GAAP or regulatory financial measure, can be found in this report.

PART I

ITEM 1. BUSINESS

BorgWarner Inc. and Consolidated Subsidiaries (the "Company") is a Delaware corporation incorporated in 1987. We are a global product leader in clean and efficient technology solutions for combustion, hybrid and electric vehicles. Our products help improve vehicle performance, propulsion efficiency, stability and air quality. These products are manufactured and sold worldwide, primarily to original equipment manufacturers ("OEMs") of light vehicles (passenger cars, sport-utility vehicles ("SUVs"), vans and light trucks). The Company's products are also sold to other OEMs of commercial vehicles (medium-duty trucks, heavy-duty trucks and buses) and off-highway vehicles (agricultural and construction machinery and marine applications). We also manufacture and sell our products to certain Tier One vehicle systems suppliers and into the aftermarket for light, commercial and off-highway vehicles. The Company operates manufacturing facilities serving customers in Europe, the Americas and Asia and is an original equipment supplier to every major automotive OEM in the world.

Financial Information About Reporting Segments

Refer to Note 19, "Reporting Segments and Related Information," to the Consolidated Financial Statements in Item 8 of this report for financial information about the Company's reporting segments.

Narrative Description of Reporting Segments

The Company reports its results under two reporting segments: Engine and Drivetrain. Net sales by reporting segment for the years ended December 31, 2016, 2015 and 2014 are as follows:

	Year Ended December 31,		
(millions of dollars)	2016	2015	2014
Engine	$ 5,590.1	$ 5,500.0	$ 5,705.9
Drivetrain	3,523.7	2,556.7	2,631.4
Inter-segment eliminations	(42.8)	(33.5)	(32.2)
Net sales	$ 9,071.0	$ 8,023.2	$ 8,305.1

The sales information presented above excludes the sales by the Company's unconsolidated joint ventures (See sub-heading "Joint Ventures"). Such unconsolidated sales totaled approximately $737 million, $650 million and $694 million for the years ended December 31, 2016, 2015 and 2014, respectively.

Engine

The Engine Segment develops and manufactures products to improve fuel economy, reduce emissions and enhance performance. Increasingly stringent regulation of, and consumer demand for, better fuel economy and emissions performance are driving demand for the Engine Segment's products in gasoline and diesel engines and alternative powertrains. The Engine Segment's technologies include: turbochargers, timing systems, emissions systems, thermal systems, thermostats, diesel cold start and gasoline ignition technology.

Turbochargers provide several benefits including increased power for a given engine size, improved fuel economy and reduced emissions. The Engine Segment has benefited from the growth in turbocharger demand around the world for both diesel and gasoline engines. The Engine Segment provides turbochargers for light, commercial and off-highway applications for diesel and gasoline engine manufacturers in the Americas, Europe and Asia. The Engine Segment also designs and manufactures turbocharger actuators using integrated electronics to precisely control turbocharger speed and pressure ratio.

Sales of turbochargers for light vehicles represented approximately 28%, 31% and 28% of total net sales for the years ended December 31, 2016, 2015 and 2014, respectively. The Engine Segment currently supplies turbochargers to many OEMs including BMW, Daimler, Fiat Chrysler Automobiles ("FCA"), Ford, General Motors, Great Wall, Hyundai, Renault, Volkswagen and Volvo. The Engine Segment also supplies turbochargers to several commercial vehicle and off-highway OEMs including Caterpillar, Daimler, Deutz, John Deere, MAN, Navistar and Weichai.

The Engine Segment's turbocharger technologies include regulated two-stage turbocharging system, known as R2S®, regulated 3-stage turbocharging systems known as R3S™, variable turbine geometry ("VTG") turbochargers for diesel engines and turbochargers for gasoline direct injected engines, all of which may be found in numerous applications around the world. For example, the Engine Segment supplies its award winning VTG turbocharger technology to VW, BMW, FCA, Hyundai, Volvo and Renault. Also, the Engine Segment supplies its award winning R2S® turbocharger technology to Volkswagen for its high-performing 2.0 liter diesel engine and its R3S™ turbocharger system, an industry first, to BMW for its high-powered 3.0 diesel engine. Ford selected the Engine Segment's leading gasoline turbocharger technology for its 1.5 liter, 1.6 liter and 2.0 liter four-cylinder EcoBoost engines, as did Volvo and JLR for its new four-cylinder gasoline engines.

The Engine Segment's timing systems enable precise control of air and exhaust flow through the engine, improving fuel economy and emissions. The Engine Segment's timing systems products include timing chain, variable cam timing (“VCT”), crankshaft and camshaft sprockets, tensioners, guides and snubbers, HY-VO® front-wheel drive (“FWD”) transmission chain and four-wheel drive (“4WD”) chain for light vehicles. The Engine Segment is a leading manufacturer of timing systems to OEMs around the world.

The Engine Segment's engine timing technology includes VCT with mid position lock, which allows a greater range of camshaft positioning thereby enabling greater control over airflow and the opportunity to improve fuel economy, reduce emissions and improve engine performance compared with conventional VCT systems.

The Engine Segment's emissions systems products improve emissions performance and fuel economy. Products include electric air pumps and exhaust gas recirculation ("EGR") modules, EGR coolers, EGR tubes and EGR valves for gasoline and diesel applications, glow plugs and instant starting systems that enhance combustion for diesel engines during cold starts, pressure sensor glow plugs that also monitor the combustion process of a diesel engine and advanced ignition technology for gasoline engines, diesel cold start systems and other gasoline ignition technologies.

On February 28, 2014, the Company acquired 100% of the equity interests in Gustav Wahler GmbH u. Co. KG and its general partner ("Wahler"). Wahler was a producer of EGR valves, EGR tubes and thermostats, and had operations in Germany, Brazil, the U.S., China and Slovakia. The Wahler acquisition is expected to strengthen the Company's strategic position as a producer of complete EGR systems and create additional market opportunities in both passenger and commercial vehicle applications.

The Engine Segment's thermal systems products are designed to optimize engine temperatures and minimize parasitic horsepower losses, which improve engine efficiency, fuel economy and emissions performance. Products include viscous fan drives that sense and respond to multiple cooling requirements, polymer fans and coolant pumps.

The Company sold its spark plug businesses during the third quarter of 2012. The sale of this business will allow the Company to continue to focus on expanding its core products of glow plugs, diesel cold start systems and other gasoline ignition technologies.

Drivetrain

The Drivetrain Segment develops and manufactures mechanical products for automatic transmissions and all-wheel drive ("AWD") vehicles and rotating electrical components for light and commercial vehicle OEMs and the aftermarket. Precise controls, better response times and minimal parasitic losses, all of which improve fuel economy and vehicle performance, are the core design features of the Drivetrain Segment's mechanical product portfolio. The core design features of its rotating electrical components portfolio are meeting the demands of increasing vehicle electrification, improved fuel efficiency, reduced weight, and lowered electrical and mechanical noise. The Drivetrain Segment's mechanical products include friction, mechanical and controls products for automatic transmissions and torque management products for AWD vehicles, and its rotating electrical components include starter motors, alternators and electric motors for hybrid and electric vehicles.

Friction and mechanical products for automatic transmissions include dual clutch modules, friction clutch modules, friction and steel plates, transmission bands, torque converter clutches, one-way clutches and torsional vibration dampers. Controls products for automatic transmissions feature electro-hydraulic solenoids for standard and high pressure hydraulic systems, transmission solenoid modules and dual clutch control modules. The Company's 50%-owned joint venture in Japan, NSK-Warner KK ("NSK-Warner"), is a leading producer of friction plates and one-way clutches in Japan and China.

The Drivetrain Segment has led the globalization of today's dual clutch transmission ("DCT") technology for over 10 years. BorgWarner's award-winning DualTronic® technology enables a conventional, manual gearbox to function as a fully automatic transmission by eliminating the interruption in power flow that occurs when shifting a single clutch manual transmission. The result is a smooth shifting automatic transmission with the fuel efficiency and driving experience of a manual gearbox.

The Drivetrain Segment established its industry-leading position in 2003 with the production launch of its DualTronic® innovations with VW/Audi, followed by program launches with Ford and BMW. In 2007, the Drivetrain Segment launched its first dual-clutch technology application in a Japanese transmission with Nissan. In 2008, the Company entered into a joint venture agreement with China Automobile Development United Investment Company, a company owned by 12 leading Chinese automakers, to produce various DCT modules for the Chinese market. The Company owns 66% of the joint venture. In 2013, the Drivetrain Segment launched its first DCT application in a Chinese transmission with SAIC. The Drivetrain Segment is working on several other DCT programs with OEMs around the world.

The Drivetrain Segment's torque management products include rear-wheel drive (“RWD”)-AWD transfer case systems, FWD-AWD coupling systems and cross-axle coupling systems. The Drivetrain Segment's focus is on developing electronically controlled torque management devices and systems that will benefit fuel economy and vehicle dynamics.

Transfer cases are installed on RWD based light trucks, SUVs, cross-over utility vehicles, and passenger cars. A transfer case attaches to the transmission and distributes torque to the front and rear axles improving vehicle traction and stability in dynamic driving conditions. There are many variants of the Drivetrain Segment's transfer case technology in the market today, including Torque On-Demand (TOD®), chain-driven, gear-driven, Pre-Emptive, Part-Time, 1-speed and 2-speed transfer cases. The Drivetrain Segment's transfer cases are featured on the Ford and Dodge Ram light-duty and heavy-duty trucks.

The Drivetrain Segment is involved in the AWD market for FWD based vehicles with couplings that use electronically-controlled clutches to distribute power to the rear wheels as traction is required. The Drivetrain Segment's latest coupling innovation, the Centrifugal Electro-Hydraulic (“CEH”) Actuator, which is utilized to engage the clutches in the coupling, produces outstanding vehicle stability and traction while promoting better fuel economy with reduced weight. The CEH Actuator is found in the AWD couplings featured in several current FWD-AWD vehicles.

In 2015, the Company acquired Remy International, Inc. ("Remy"), a global market leader in the design, manufacture, remanufacture and distribution of rotating electrical components for light and commercial vehicles, OEMs and the aftermarket. Principal products include starter motors, alternators and hybrid electric motors. The Company's starter motors and alternators are used in gasoline, diesel, natural gas and alternative fuel engines for light vehicle, commercial vehicle, industrial, construction and agricultural applications. The product technology continues to evolve to meet the demands of increasing vehicle electrical loads, improved fuel efficiency, reduced weight and lowered electrical and mechanical noise. The Company's hybrid electric motors are used in both light and commercial vehicles including construction, public transit and agricultural applications. These include both pure electric applications as well as hybrid applications, where the electric motors are combined with traditional gasoline or diesel propulsion systems. While the market for these systems is in early stages of development, BorgWarner's technology and capabilities are ideally suited for this growing product category.

In 2016, the Company sold the Remy light vehicle aftermarket business, which sells remanufactured and new starters, alternators and multi-line products to aftermarket customers, mainly retailers in North America, and warehouse distributors in North America, South America and Europe. The sale of this business allows the Company to focus on the rapidly developing original equipment manufacturer electrification trend in propulsion systems.

The Company sells new starters, alternators and hybrid electric motors to OEMs globally for factory installation on new vehicles, and remanufactured and new starters and alternators to heavy duty aftermarket customers outside of Europe and to OEMs for original equipment service. As a leading remanufacturer, BorgWarner obtains used starters and alternators, commonly referred to as cores, then disassembles, cleans, combines them with new subcomponents and reassembles them into saleable, finished products, which are tested to meet OEM requirements.

In 2011, the Company acquired the Traction Systems division of Haldex Group, a leading provider of innovative AWD products for the global vehicle industry headquartered in Stockholm, Sweden. This acquisition has accelerated BorgWarner's growth in the global AWD market as it continues to shift toward FWD based vehicles. The acquisition adds industry leading AWD technologies for FWD based vehicles, with a strong European customer base, to BorgWarner's portfolio of front- and rear-wheel drive based products and enables BorgWarner to offer global customers a broader range of AWD solutions to meet their vehicle needs.

Joint Ventures

As of December 31, 2016, the Company had seven joint ventures in which it had a less-than-100% ownership interest. Results from the five joint ventures in which the Company is the majority owner are consolidated as part of the Company's results. Results from the two joint ventures in which the Company's effective ownership interest is 50% or less, were reported by the Company using the equity method of accounting.

In August 2016, the Company sold its 60% ownership interest in Divgi-Warner Private Limited to the joint venture partner. This former joint venture was formed in 1995 to develop and manufacture transfer cases and synchronizer rings in India. As a result of the sale, the Company received cash proceeds of approximately \$5.4 million, net of capital gains tax and cash divested, which is classified as an investing activity within the Condensed Consolidated Statement of Cash Flows.

Management of the unconsolidated joint ventures is shared with the Company's respective joint venture partners. Certain information concerning the Company's joint ventures is set forth below:

Joint venture	Products	Year organized	Percentage owned by the Company	Location of operation	Joint venture partner	Fiscal 2016 net sales (millions of dollars) (a)	
Unconsolidated:							
NSK-Warner	Transmission components	1964	50%	Japan/ China	NSK Ltd.	$	601.8
Turbo Energy Private Limited (b)	Turbochargers	1987	32.6%	India	Sundaram Finance Limited; Brakes India Limited	$	135.2
Consolidated:							
BorgWarner Transmission Systems Korea Ltd. (c)	Transmission components	1987	60%	Korea	NSK-Warner	$	292.0
Borg-Warner Shenglong (Ningbo) Co. Ltd.	Fans and fan drives	1999	70%	China	Ningbo Shenglong Automotive Powertrain Systems Co., Ltd.	$	33.4
BorgWarner TorqTransfer Systems Beijing Co. Ltd.	Transfer cases	2000	80%	China	Beijing Automotive Components Stock Co. Ltd.	$	114.6
SeohanWarner Turbo Systems Ltd.	Turbochargers	2003	71%	Korea	Korea Flange Company	$	314.1
BorgWarner United Transmission Systems Co. Ltd.	Transmission components	2009	66%	China	China Automobile Development United Investment Co., Ltd.	$	43.2

(a) All sales figures are for the year ended December 31, 2016, except NSK-Warner and Turbo Energy Private Limited. NSK-Warner's sales are reported for the 12 months ended November 30, 2016. Turbo Energy Private Limited's sales are reported for the 12 months ended September 30, 2016.
(b) The Company made purchases from Turbo Energy Private Limited totaling $28.9 million, $36.5 million and $36.5 million for the years ended December 31, 2016, 2015 and 2014, respectively.
(c) BorgWarner Inc. owns 50% of NSK-Warner, which has a 40% interest in BorgWarner Transmission Systems Korea Ltd. This gives the Company an additional indirect effective ownership percentage of 20%, resulting in a total effective ownership interest of 80%.

Financial Information About Geographic Areas

During the year ended December 31, 2016, approximately 75% of the Company's consolidated net sales were outside the United States ("U.S."), attributing sales to the location of production rather than the location of the customer.

Refer to Note 19, "Reporting Segments and Related Information," to the Consolidated Financial Statements in Item 8 of this report for financial information about geographic areas.

Product Lines and Customers

During the year ended December 31, 2016, approximately 81% of the Company's net sales were for light-vehicle applications; approximately 9% were for commercial vehicle applications; approximately 4% were for off-highway vehicle applications; and approximately 6% were to distributors of aftermarket replacement parts.

The Company's worldwide net sales to the following customers (including their subsidiaries) were approximately as follows:

	Year Ended December 31,		
Customer	2016	2015	2014
Ford	15%	15%	13%
Volkswagen	13%	15%	17%

No other single customer accounted for more than 10% of our consolidated net sales in any of the years presented.

The Company's automotive products are generally sold directly to OEMs, substantially pursuant to negotiated annual contracts, long-term supply agreements or terms and conditions as may be modified by the parties. Deliveries are subject to periodic authorizations based upon OEM production schedules. The Company typically ships its products directly from its plants to the OEMs.

Sales and Marketing

Each of the Company's businesses within its two reporting segments has its own sales function. Account executives for each of our businesses are assigned to serve specific customers for one or more businesses' products. Our account executives spend the majority of their time in direct contact with customers' purchasing and engineering employees and are responsible for servicing existing business and for identifying and obtaining new business. Because of their close relationship with customers, account executives are able to identify and meet customers' needs based upon their knowledge of our products' design and manufacturing capabilities. Upon securing a new order, account executives participate in product launch team activities and serve as a key interface with customers. In addition, sales and marketing employees of our Engine and Drivetrain reporting segments often work together to explore cross-development opportunities where appropriate.

Seasonality

Our operations are directly related to the automotive industry. Consequently, we may experience seasonal fluctuations to the extent automotive vehicle production slows, such as in the summer months when many customer plants typically close for model year changeovers or vacations. Historically, model changeovers or vacations have generally resulted in lower sales volume in the third quarter.

Research and Development

The Company conducts advanced Engine and Drivetrain research at the reporting segment level. This advanced engineering function looks to leverage know-how and expertise across product lines to create new Engine and Drivetrain systems and modules that can be commercialized. This function manages a venture capital fund that was created by the Company as seed money for new innovation and collaboration across businesses.

In addition, each of the Company's businesses within its two reporting segments has its own research and development (“R&D”) organization, including engineers and technicians, engaged in R&D activities at facilities worldwide. The Company also operates testing facilities such as prototype, measurement and calibration, life cycle testing and dynamometer laboratories.

By working closely with the OEMs and anticipating their future product needs, the Company's R&D personnel conceive, design, develop and manufacture new proprietary automotive components and systems. R&D personnel also work to improve current products and production processes. The Company believes its commitment to R&D will allow it to continue to obtain new orders from its OEM customers.

The Company's net R&D expenditures are included in selling, general and administrative expenses of the Consolidated Statements of Operations. Customer reimbursements are netted against gross R&D expenditures as they are considered a recovery of cost. Customer reimbursements for prototypes are recorded net of prototype costs based on customer contracts, typically either when the prototype is shipped or when it is accepted by the customer. Customer reimbursements for engineering services are recorded when performance obligations are satisfied in accordance with the contract and accepted by the customer. Financial risks and rewards transfer upon shipment, acceptance of a prototype component by the customer or upon completion of the performance obligation as stated in the respective customer agreement.

(millions of dollars)	Year Ended December 31, 2016	2015	2014
Gross R&D expenditures	$ 417.8	$ 386.2	$ 392.8
Customer reimbursements	(74.6)	(78.8)	(56.6)
Net R&D expenditures	$ 343.2	$ 307.4	$ 336.2

Net R&D expenditures as a percentage of net sales were 3.8%, 3.8% and 4.0% for the years ended December 31, 2016, 2015 and 2014, respectively. The Company has contracts with several customers at the Company's various R&D locations. No such contract exceeded 5% of net R&D expenditures in any of the years presented.

Intellectual Property

The Company has more than 6,500 active domestic and foreign patents and patent applications pending or under preparation, and receives royalties from licensing patent rights to others. While it considers its patents on the whole to be important, the Company does not consider any single patent, any group of related patents or any single license essential to its operations in the aggregate or to the operations of any of the Company's business groups individually. The expiration of the patents individually and in the aggregate is not expected to have a material effect on the Company's financial position or future operating results. The Company owns numerous trademarks, some of which are valuable, but none of which are essential to its business in the aggregate.

The Company owns the “BorgWarner” and “Borg-Warner Automotive” trade names and trademarks, and variations thereof, which are material to the Company's business.

Competition

The Company's reporting segments compete worldwide with a number of other manufacturers and distributors that produce and sell similar products. Many of these competitors are larger and have greater resources than the Company. Technological innovation, application engineering development, quality, price, delivery and program launch support are the primary elements of competition.

The Company's major competitors by product type follow:

Product Type: Engine	Names of Competitors	
Turbochargers:	Cummins Turbo Technology Honeywell Bosch Mahle Turbo Systems	IHI Mitsubishi Heavy Industries (MHI)
Emissions systems:	Mahle Denso Bosch Eldor	T.RAD Pierburg NGK
Timing devices and chains:	Denso Iwis	Schaeffler Group Tsubaki Group
Thermal systems:	Horton Mahle	Usui Xuelong

Product Type: Drivetrain	Names of Competitors	
Torque transfer:	GKN Driveline	JTEKT Magna Powertrain
Rotating electrical machines:	Denso Bosch	Valeo
Transmission systems:	Bosch Dynax	FCC Schaeffler Group

In addition, a number of the Company's major OEM customers manufacture, for their own use and for others, products that compete with the Company's products. Other current OEM customers could elect to manufacture products to meet their own requirements or to compete with the Company. There is no assurance that the Company's business will not be adversely affected by increased competition in the markets in which it operates.

For many of its products, the Company's competitors include suppliers in parts of the world that enjoy economic advantages such as lower labor costs, lower health care costs, lower tax rates and, in some cases, export subsidies and/or raw materials subsidies. Also, see Item 1A, "Risk Factors."

Workforce

As of December 31, 2016, the Company had a salaried and hourly workforce of approximately 27,000 (as compared with approximately 30,000 at December 31, 2015), of which approximately 6,100 were in the U.S. Approximately 17% of the Company's U.S. workforce is unionized. The workforces at certain international facilities are also unionized. The Company believes the present relations with our workforce to be satisfactory.

We have a domestic collective bargaining agreement for one facility in New York, which expires in September 2020.

Raw Materials

The Company uses a variety of raw materials in the production of its automotive products including aluminum, copper, nickel, plastic resins, steel and certain alloy elements. Manufacturing operations for each of the Company's operating segments are dependent upon natural gas, fuel oil and electricity.

The Company uses a variety of tactics in order to limit the impact of supply shortages and inflationary pressures. The Company's global procurement organization works to accelerate cost reductions, purchases from lower cost regions, rationalize the supply base, mitigate risk and collaborate on its buying activities. In addition, the Company uses long-term contracts, cost sharing arrangements, design changes, customer buy programs and limited financial instruments to help control costs. The Company intends to use similar measures in 2017 and beyond. Refer to Note 10, "Financial Instruments," of the Consolidated Financial Statements in Item 8 of this report for information related to the Company's hedging activities.

For 2017, the Company believes that its supplies of raw materials are adequate and available from multiple sources to support its manufacturing requirements.

Available Information

Through its Internet website (www.borgwarner.com), the Company makes available, free of charge, its Annual Report on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K, all amendments to those reports, and other filings with the Securities and Exchange Commission, as soon as reasonably practicable after they are filed or furnished. The Company also makes the following documents available on its Internet website: the Audit Committee Charter; the Compensation Committee Charter; the Corporate Governance Committee Charter; the Company's Corporate Governance Guidelines; the Company's Code of Ethical Conduct; and the Company's Code of Ethics for CEO and Senior Financial Officers. You may also obtain a copy of any of the foregoing documents, free of charge, if you submit a written request to Investor Relations, 3850 Hamlin Road, Auburn Hills, Michigan 48326. The public may read and copy materials filed by the Company with the SEC at the SEC's Public Reference Room at 100 F Street, NE, Washington, DC, 20549. The public may obtain information on the operation of the Public Reference Room by calling the SEC at 1-800-SEC-0330. The SEC maintains an Internet site that contains reports, proxy and information statements, and other information regarding issuers that file electronically with the SEC at http://www.sec.gov.

Executive Officers of the Company

Set forth below are the names, ages, positions and certain other information concerning the executive officers of the Company as of February 9, 2017.

Name	Age	Position with the Company
James R. Verrier	54	President and Chief Executive Officer
Ronald T. Hundzinski	58	Vice President and Chief Financial Officer
Anthony D. Hensel	58	Vice President and Controller
Tonit Calaway	48	Vice President, Human Resources
Stefan Demmerle	52	Vice President
Brady D. Ericson	45	Vice President
Joseph F. Fadool	50	Vice President
John J. Gasparovic	59	Vice President, General Counsel and Secretary
Robin Kendrick	52	Vice President
Frederic B. Lissalde	49	Vice President
Thomas J. McGill	50	Vice President and Treasurer
Joel Wiegert	43	Vice President

Mr. Verrier has been President, Chief Executive Officer and member of BorgWarner's Board of Directors since January 1, 2013. From March 2012 through December 2012, he was the President and Chief Operating Officer of the Company. From January 2010 to March 2012, he was Vice President of the Company and President and General Manager of BorgWarner Morse TEC Inc.

Mr. Hundzinski has been Vice President and Chief Financial Officer of the Company since March 2012. From August 2011 through March 2012, he was Vice President and Treasurer of the Company.

Mr. Hensel has been Vice President and Controller of the Company since December 2016. From May 2009 through November 2016, he was Vice President of Internal Audit of the Company.

Ms. Calaway has been Vice President and Chief Human Resource Officer of the Company since August 2016. Prior to this role, she was Vice President of Human Resources of Harley-Davidson Inc. and President of The Harley-Davidson Foundation since February 2010 to July 2016.

Dr. Demmerle has been Vice President of the Company and President and General Manager of BorgWarner PDS (USA) Inc. (formerly known as BorgWarner TorqTransfer Systems Inc.) since September 2012 and President and General Manager of BorgWarner PDS (Indiana) Inc. (formerly known as Remy International, Inc.) since December 2015. From July 2010 to September 2012, he was Vice President, Engine Control Electronics at Continental Automotive Systems.

Mr. Ericson has been Chief Strategy Officer of the Company since January 2017. He was Vice President of the Company and President and General Manager of BorgWarner Emissions Systems LLC from March 2014 until December 2016, during which time BorgWarner BERU Systems GmbH was combined with BorgWarner Emissions Systems Inc. He was Vice President of the Company and President and General Manager of BorgWarner BERU Systems GmbH and Emissions Systems Inc. from September 2011 until March 2014.

Mr. Fadool has been Vice President of the Company and President and General Manager of BorgWarner Emissions Systems LLC and BorgWarner Thermal Systems Inc. since January 2017. He was Vice President of the Company and President and General Manager of BorgWarner Ithaca LLC (d/b/a BorgWarner Morse Systems) from July 2015 until December 2016. From May 2012 to July 2015, he was the Vice President of the Company and President and General Manager of BorgWarner Morse TEC Inc. He was Vice President of the Company and President and General Manager of BorgWarner TorqTransfer Systems Inc. from June 2011 until September 2012.

Mr. Gasparovic has been Vice President, General Counsel and Secretary of the Company since January 2007.

Mr. Kendrick has been Vice President of the Company and President and General Manager of BorgWarner Transmissions Systems LLC since September 2011.

Mr. Lissalde has been Vice President of the Company and President and General Manager of BorgWarner Turbo Systems LLC since May 2013. From May 2011 until May 2013 he was Vice President of the Company and President and General Manager of BorgWarner Turbo Systems Passenger Car Products.

Mr. McGill has been Vice President and Treasurer of the Company since May 2012. He was Vice President of Finance of BorgWarner Turbo Systems Inc. from April 2010 until May 2012.

Mr. Wiegert has been President and General Manager of BorgWarner Ithaca LLC (d/b/a BorgWarner Morse Systems) since January 2017. He was President and General Manager of BorgWarner Thermal Systems Inc. from September 2016 until December 2016. From July 2015 to August 2016, he was Vice President and General Manager, Americas, Aftermarket and Global Integration Leader for BorgWarner PDS (USA) Inc. From January 2012 to July 2015, he was Vice President and General Manager, Asia and Americas for BorgWarner Turbo Systems Inc.

Item 1A. Risk Factors

The following risk factors and other information included in this Annual Report on Form 10-K should be considered. The risks and uncertainties described below are not the only ones we face. Additional risks and uncertainties not presently known to us or that we currently deem immaterial also may impact our business operations. If any of the following risks occur, our business including its financial performance, financial condition, operating results and cash flows could be adversely affected.

Risks related to our industry

Conditions in the automotive industry may adversely affect our business.

Our financial performance depends on conditions in the global automotive industry. Automotive and truck production and sales are cyclical and sensitive to general economic conditions and other factors including interest rates, consumer credit, and consumer spending and preferences. Economic declines that result in significant reduction in automotive or truck production would have an adverse effect on our sales to OEMs.

We face strong competition.

We compete worldwide with a number of other manufacturers and distributors that produce and sell products similar to ours. Price, quality, delivery, technological innovation, engineering development and program launch support are the primary elements of competition. Our competitors include vertically integrated units of our major OEM customers, as well as a large number of independent domestic and international suppliers. A number of our competitors are larger than us and some competitors have greater financial and other resources than we do. Although OEMs have indicated that they will continue to rely on outside suppliers, a number of our major OEM customers manufacture products for their own uses that directly compete with our products. These OEMs could elect to manufacture such products for their own uses in place of the products we currently supply. The competitive environment has changed dramatically over the past few years as our traditional U.S. OEM customers, faced with intense international competition, have expanded their worldwide sourcing of components. As a result, we have experienced competition from suppliers in other parts of the world that enjoy economic advantages, such as lower labor costs, lower health care costs, lower tax rates and, in some cases, export or raw materials subsidies. Increased competition could adversely affect our business.

Risks related to our business

We are under substantial pressure from OEMs to reduce the prices of our products.

There is substantial and continuing pressure on OEMs to reduce costs, including costs of products we supply. Annual price reductions to OEM customers are a permanent component of our business. To maintain our profit margins, we seek price reductions from our suppliers, improved production processes to increase manufacturing efficiency, updated product designs to reduce costs and we develop new products, the benefits of which support stable or increased prices. Our ability to pass through increased raw material costs to our OEM customers is limited, with cost recovery often less than 100% and often on a delayed basis. Inability to reduce costs in an amount equal to annual price reductions, increases in raw material costs, and increases in employee wages and benefits could have an adverse effect on our business.

We continue to face volatile costs of commodities used in the production of our products.

The Company uses a variety of commodities (including aluminum, copper, nickel, plastic resins, steel, other raw materials and energy) and materials purchased in various forms such as castings, powder metal, forgings, stampings and bar stock. Increasing commodity costs will have an impact on our results. We have sought to alleviate the impact of increasing costs by including a material pass-through provision in our customer contracts wherever possible and by selectively hedging certain commodity exposures. Customers frequently challenge these contractual provisions and rarely pay the full cost of any material increases. The discontinuation or lessening of our ability to pass-through or hedge increasing commodity costs could adversely affect our business.

From time to time, commodity prices may also fall rapidly. When this happens, suppliers may withdraw capacity from the market until prices improve which may cause periodic supply interruptions. The same may be true of our transportation carriers and energy providers. If these supply interruptions occur, it could adversely affect our business.

We use important intellectual property in our business. If we are unable to protect our intellectual property or if a third party makes assertions against us or our customers relating to intellectual property rights, our business could be adversely affected.

We own important intellectual property, including patents, trademarks, copyrights and trade secrets, and are involved in numerous licensing arrangements. Our intellectual property plays an important role in maintaining our competitive position in a number of the markets that we serve. Our competitors may develop technologies that are similar or superior to our proprietary technologies or design around the patents we own or license. Further, as we expand our operations in jurisdictions where the enforcement of intellectual property rights is less robust, the risk of others duplicating our proprietary technologies increases, despite efforts we undertake to protect them. Developments or assertions by or against us relating to intellectual property rights, and any inability to protect or enforce these rights, could adversely affect our business and our competitive position.

We are subject to business continuity risks associated with increasing centralization of our information technology (IT) systems.

To improve efficiency and reduce costs, we have regionally centralized the information systems that support our business processes such as invoicing, payroll and general management operations. If the centralized systems are disrupted or disabled, key business processes could be interrupted, which could adversely affect our business.

A failure of our information technology infrastructure could adversely impact our business and operations.

We rely on the capacity, reliability and security of our IT systems and infrastructure. IT systems are vulnerable to disruptions, including those resulting from natural disasters, cyber-attacks or failures in third-party-provided services. Disruptions and attacks on our IT systems pose a risk to the security of our systems and our ability to protect our networks and the confidentiality, availability and integrity of our third-party data. As a result, such attacks or disruptions could potentially lead to the inappropriate disclosure of confidential information, including our intellectual property, improper use of our systems and networks, manipulation and destruction of data, production downtimes and both internal and external supply shortages. This could cause significant damage to our reputation, affect our relationships with our customers and suppliers, lead to claims against the Company and ultimately adversely affect our business.

Our business success depends on attracting and retaining qualified personnel.

Our ability to sustain and grow our business requires us to hire, retain and develop a highly skilled and diverse management team and workforce worldwide. Any unplanned turnover or inability to attract and retain key employees in numbers sufficient for our needs could adversely affect our business.

Part of our workforce is unionized which could subject us to work stoppages.

As of December 31, 2016, approximately 17% of our U.S. workforce was unionized. We have a domestic collective bargaining agreement for one facility in New York, which expires in September 2020. The workforce at certain of our international facilities is also unionized. A prolonged dispute with our employees could have an adverse effect on our business.

Changes in interest rates and asset returns could increase our pension funding obligations and reduce our profitability.

We have unfunded obligations under certain of our defined benefit pension and other postretirement benefit plans. The valuation of our future payment obligations under the plans and the related plan assets are subject to significant adverse changes if the credit and capital markets cause interest rates and projected rates of return to decline. Such declines could also require us to make significant additional contributions to our pension plans in the future. Additionally, a material deterioration in the funded status of the plans could significantly increase our pension expenses and reduce profitability in the future.

We also sponsor post-employment medical benefit plans in the U.S. that are unfunded. If medical costs continue to increase or actuarial assumptions are modified, this could have adverse effect on our business.

We are subject to extensive environmental regulations.

Our operations are subject to laws governing, among other things, emissions to air, discharges to waters and the generation, handling, storage, transportation, treatment and disposal of waste and other materials. The operation of automotive parts manufacturing plants entails risks in these areas, and we cannot assure that we will not incur material costs or liabilities as a result. Through various acquisitions over the years, we have acquired a number of manufacturing facilities, and we cannot assure that we will not incur material costs and liabilities relating to activities that predate our ownership. In addition, potentially significant expenditures could be required in order to comply with evolving interpretations of existing environmental, health and safety laws and regulations or any new such laws and regulations that may be adopted in the future. Costs associated with failure to comply with such laws and regulations could have an adverse effect on our business.

We have liabilities related to environmental, product warranties, litigation and other claims.

We and certain of our current and former direct and indirect corporate predecessors, subsidiaries and divisions have been identified by the United States Environmental Protection Agency and certain state environmental agencies and private parties as potentially responsible parties at various hazardous waste disposal sites under the Comprehensive Environmental Response, Compensation and Liability Act and equivalent state laws.

We provide product warranties to our customers for some of our products. Under these product warranties, we may be required to bear costs and expenses for the repair or replacement of these products. We cannot assure that costs and expenses associated with these product warranties will not be material, or that those costs will not exceed any amounts accrued for such product warranties in our financial statements.

We are currently, and may in the future become, subject to legal proceedings and commercial or contractual disputes. These claims typically arise in the normal course of business and may include, but not be limited to, commercial or contractual disputes with our customers and suppliers, intellectual property matters, personal injury, product liability, environmental and employment claims. There is a possibility that such claims may have an adverse impact on our business that is greater than we anticipate. While the Company maintains insurance for certain risks, the amount of insurance may not be adequate to cover all insured claims and liabilities. The incurring of significant liabilities for which there is no, or insufficient, insurance coverage could adversely affect our business.

We have faced, and in the future expect to face, substantial numbers of asbestos-related claims. The costs of resolving those claims is inherently uncertain and could have a material adverse effect on our results of operations, financial position, and cash flows.

We have in the past been named in a significant number of lawsuits each year alleging injury related to exposure to asbestos in certain of our historical products. We no longer manufacture, distribute, or sell products that contain asbestos, and we vigorously defend against asbestos-related claims. Over 80 percent of claims asserted against us in recent years have been resolved with no payment to the claimant. Notwithstanding these factors, we project that a substantial number of asbestos-related claims are likely to be asserted against us in the future. We have estimated the indemnity and defense costs relating to the asbestos-related claims that have been asserted against us but not yet resolved, as well as those asbestos-related claims that we estimate are likely to be asserted against us in the future. Our estimate of future asbestos-related claims that may be asserted against us is based on assumptions as to the likely rates of occurrence of asbestos-related disease in the U.S. population in the future and the number of asbestos-related claims asserted as a result. Furthermore, our estimates are based on a number of assumptions derived from our historical experience in resolving asbestos-related claims, including:

- the number and type of future asbestos-related claims that will be asserted against us;
- the number of future asbestos-related claims asserted against us that will result in a payment by us;
- the average payment necessary to resolve such claims; and
- the costs of defending such claims.

If our actual experience, as noted above, in receiving and resolving asbestos-related claims in the future differs significantly from these assumptions, then our expenditures to resolve such claims may be significantly higher or lower than the estimates contained in our financial statements, and, if higher, could have an adverse impact on our results of operations, financial position, or cash flows that is greater than we have estimated. See "Management's Discussion and Analysis of Financial Condition and Results of Operations - Other Matters - Contingencies - Asbestos-Related Liability".

While we have certain insurance coverage available respecting asbestos-related claims asserted against us, most of that insurance coverage is the subject of pending litigation. The insurance that is at issue in the litigation is subject to various uncertainties, including: the assertion of defenses or the development of facts which we are not presently aware, changes in the case law, and future financial viability of remaining insurers. This insurance coverage is additionally subject to claims from other co-insured parties. We currently project that our remaining insurance coverage for current and future asbestos-related claims will cover only a portion of the amounts that we estimate we ultimately may pay to resolve such claims. The resolution of the insurance coverage litigation, and the number and amount of claims on our insurance from co-insured parties, may increase or decrease the amount of insurance coverage available to us for asbestos-related claims from the estimates contained in our financial statements.

Compliance with and changes in laws could be costly and could affect operating results. In addition, government disruptions could negatively impact our ability to conduct our business.

We have operations in multiple countries that can be impacted by expected and unexpected changes in the legal and business environments in which we operate. Compliance related issues in certain countries associated with laws such as the Foreign Corrupt Practices Act and other anti-corruption laws could also adversely affect our business.

Changes that could impact the legal environment include new legislation, new regulations, new policies, investigations and legal proceedings and new interpretations of existing legal rules and regulations, in particular, changes in import and export control laws or exchange control laws, additional restrictions on doing business in countries subject to sanctions, and changes in laws in countries where we operate or intend to operate. In addition, government disruptions, such as government shutdowns, may delay or halt the granting and renewal of permits, licenses and other items required by us and our customers to conduct our business.

Changes in tax laws or tax rates taken by taxing authorities and tax audits could adversely affect our business.

Changes in tax laws or tax rates, the resolution of tax assessments or audits by various tax authorities, and the inability to fully utilize our tax loss carryforwards and tax credits could adversely affect our operating results. In addition, we may periodically restructure our legal entity organization.

If taxing authorities were to disagree with our tax positions in connection with any such restructurings, our effective tax rate could be materially affected. Our tax filings for various periods are subject to audit by the tax authorities in most jurisdictions where we conduct business. We have received tax assessments from various taxing authorities and are currently at varying stages of appeals and/or litigation regarding these matters. These audits may result in assessment of additional taxes that are resolved with the authorities or through the courts. We believe these assessments may occasionally be based on erroneous and even arbitrary interpretations of local tax law. Resolution of any tax matters involves uncertainties and there are no assurances that the outcomes will be favorable.

Our growth strategy may prove unsuccessful.

We have a stated goal of increasing sales and operating income at a rate greater than global vehicle production by increasing content per vehicle with innovative new components and through select acquisitions.

We may not meet our goal because of any of the following, or other factors: (a) the failure to develop new products that will be purchased by our customers; (b) technology changes rendering our products obsolete; and (c) a reversal of the trend of supplying systems (which allows us to increase content per vehicle) instead of components.

We expect to continue to pursue business ventures, acquisitions, and strategic alliances that leverage our technology capabilities, enhance our customer base, geographic representation, and scale to complement our current businesses and we regularly evaluate potential growth opportunities, some of which could be material. While we believe that such transactions are an integral part of our long-term strategy, there are risks and uncertainties related to these activities. Assessing a potential growth opportunity involves extensive due diligence. However, the amount of information we can obtain about a potential growth opportunity may be limited, and we can give no assurance that past or future business ventures, acquisitions, and strategic alliances will positively affect our financial performance or will perform as planned. We may not be able to successfully assimilate or integrate companies that we have acquired or acquire in the future, including their personnel, financial systems, distribution, operations and general operating procedures. The integration of companies that we have acquired or acquire in the future may be more difficult, time consuming or costly than expected. Revenues following the acquisition of a company may be lower than expected, customer loss and business disruption (including, without limitation, difficulties in maintaining relationships with employees, customers, or suppliers) may be greater than expected and the retention of key employees at the acquired company may not be achieved. We may also encounter challenges in achieving appropriate internal control over financial reporting in connection with the integration of an acquired company. If we fail to assimilate or integrate acquired companies successfully, our business, reputation and operating results could be adversely affected. Likewise, our failure to integrate and manage acquired companies successfully may lead to future impairment of any associated goodwill and intangible asset balances. Failure to execute our growth strategy could adversely affect our business.

We are subject to risks related to our international operations.

We have manufacturing and technical facilities in many regions including Europe, Asia, and the Americas. For 2016, approximately 75% of our consolidated net sales were outside the U.S. Consequently, our results could be affected by changes in trade, monetary and fiscal policies, trade restrictions or prohibitions, import or other charges or taxes, fluctuations in foreign currency exchange rates, limitations on the repatriation of funds, changing economic conditions, unreliable intellectual property protection and legal systems, insufficient infrastructures, social unrest, political instability and disputes, and international terrorism. Compliance with multiple and potentially conflicting laws and regulations of various countries is challenging, burdensome and expensive.

The financial statements of foreign subsidiaries are translated to U.S. dollars using the period-end exchange rate for assets and liabilities and an average exchange rate for each period for revenues, expenses and capital expenditures. The local currency is the functional currency for substantially all of the Company's foreign subsidiaries. Significant foreign currency fluctuations and the associated translation of those foreign currencies could adversely affect our business. Additionally, significant changes in currency exchange rates, particularly the Euro, Korean Won and Chinese Renminbi, could cause fluctuations in the reported results of our businesses' operations that could negatively affect our results of operations.

Our business in China is subject to aggressive competition and is sensitive to economic, political and market conditions.

Maintaining a strong position in the Chinese market is a key component of our global growth strategy. The automotive supply market in China is highly competitive, with competition from many of the largest global manufacturers and numerous smaller domestic manufacturers. As the Chinese market evolves, we anticipate that market participants will act aggressively to increase or maintain their market share. Increased competition may result in price reductions, reduced margins and our inability to gain or hold market share. In addition, our business in China is sensitive to economic, political and market conditions that drive sales volume in China. If we are unable to maintain our position in the Chinese market or if vehicle sales in China decrease, our business and financial results could be adversely affected.

A downgrade in the ratings of our debt could restrict our ability to access the debt capital markets.

Changes in the ratings that rating agencies assign to our debt may ultimately impact our access to the debt capital markets and the costs we incur to borrow funds. If ratings for our debt fall below investment grade, our access to the debt capital markets could become restricted and our cost of borrowing or the interest rate for any subsequently issued debt would likely increase.

Our revolving credit agreement includes an increase in interest rates if the ratings for our debt are downgraded. The interest costs on our revolving credit agreement are based on a rating grid agreed to in our credit agreement. Further, an increase in the level of our indebtedness and related interest costs may increase our vulnerability to adverse general economic and industry conditions and may affect our ability to obtain additional financing.

We could incur additional restructuring charges as we continue to execute actions in an effort to improve future profitability and competitiveness and may not achieve the anticipated savings and benefits from these actions.

We have and may continue to initiate restructuring actions designed to improve future profitability and competitiveness, enhance treasury management flexibility or create an optimal legal entity structure. We may not realize anticipated savings or benefits from past or future actions in full or in part or within the time periods we expect. We are also subject to the risks of labor unrest, negative publicity and business disruption in connection with our actions. Failure to realize anticipated savings or benefits from our actions could have an adverse effect on our business.

Risks related to our customers

We rely on sales to major customers.

We rely on sales to OEMs around the world of varying credit quality and manufacturing demands. Supply to several of these customers requires significant investment by the Company. We base our growth projections, in part, on commitments made by our customers. These commitments generally renew yearly during a program life cycle. If actual production orders from our customers do not approximate such commitments due to a variety of factors including non-renewal of purchase orders, a customer's financial hardship or other unforeseen reasons, it could adversely affect our business.

Some of our sales are concentrated. Our worldwide sales in 2016 to Ford and Volkswagen constituted approximately 15% and 13% of our 2016 consolidated net sales, respectively.

We are sensitive to the effects of our major customers' labor relations.

All three of our primary North American customers, Ford, Fiat Chrysler Automobiles and General Motors, have major union contracts with the United Automobile, Aerospace and Agricultural Implement Workers of America. Because of domestic OEMs' dependence on a single union, we are affected by labor difficulties and work stoppages at OEMs' facilities. Similarly, a majority of our global customers' operations outside of North America are also represented by various unions. Any extended work stoppage at one or more of our customers could have an adverse effect on our business.

Risks related to our suppliers

We could be adversely affected by supply shortages of components from our suppliers.

In an effort to manage and reduce the cost of purchased goods and services, we have been rationalizing our supply base. As a result, we are dependent on fewer sources of supply for certain components used in the manufacture of our products. The Company selects suppliers based on total value (including total landed price, quality, delivery, and technology), taking into consideration their production capacities and financial condition. We expect that they will deliver to our stated written expectations.

However, there can be no assurance that capacity limitations, labor unrest, weather emergencies, commercial disputes, government actions, riots, wars, sabotage, cyber attacks, non-conforming parts, acts of terrorism, "Acts of God," or other problems experienced by our suppliers will not result in occasional shortages or delays in their supply of components to us. If we were to experience a significant or prolonged shortage of critical components from any of our suppliers and could not procure the components from other sources, we would be unable to meet the production schedules for some of our key products and could miss customer delivery expectations. This could adversely affect our customer relations and business.

Suppliers' economic distress could result in the disruption of our operations and could adversely affect our business.

Rapidly changing industry conditions such as volatile production volumes; credit tightness; changes in foreign currencies; raw material, commodity, transportation, and energy price escalation; drastic changes in consumer preferences; and other factors could adversely affect our supply chain, and sometimes with little advance notice. These conditions could also result in increased commercial disputes and supply interruption risks. In certain instances, it would be difficult and expensive for us to change suppliers that are critical to our business. On occasion, we must provide financial support to distressed suppliers or take other measures to protect our supply lines. We cannot predict with certainty the potential adverse effects these costs might have on our business.

We are subject to possible insolvency of outsourced service providers.

The Company relies on third party service providers for administration of legal claims, health care benefits, pension benefits, stockholder and bondholder registration and other services. These service providers contribute to the efficient conduct of the Company's business. Insolvency of one or more of these service providers could adversely affect our business.

We are subject to possible insolvency of financial counterparties.

The Company engages in numerous financial transactions and contracts including insurance policies, letters of credit, credit line agreements, financial derivatives, and investment management agreements involving various counterparties. The Company is subject to the risk that one or more of these counterparties may become insolvent and therefore be unable to meet its obligations under such contracts.

Other risks

A variety of other factors could adversely affect our business.

Any of the following could materially and adversely affect our business: the loss of or changes in supply contracts or sourcing strategies of our major customers or suppliers; start-up expenses associated with new vehicle programs or delays or cancellation of such programs; utilization of our manufacturing facilities, which can be dependent on a single product line or customer; inability to recover engineering and tooling costs; market and financial consequences of recalls that may be required on products we supplied; delays or difficulties in new product development; the possible introduction of similar or superior technologies by others; global excess capacity and vehicle platform proliferation; and the impact of fire, flood or other natural disasters.

Item 1B. Unresolved Staff Comments

The Company has received no written comments regarding its periodic or current reports from the staff of the Securities and Exchange Commission that were issued 180 days or more preceding the end of its 2016 fiscal year that remain unresolved.

Item 2. Properties

As of December 31, 2016, the Company had 62 manufacturing, assembly, and technical locations worldwide. In addition to its 16 U.S. locations, the Company had nine locations in China; seven locations in each of Germany and South Korea; four locations in each of India and Mexico; three locations in each of Brazil and Japan; and one location in each of France, Hungary, Ireland, Italy, Poland, Portugal, Spain, Sweden, and the United Kingdom. Individual locations may design or manufacture for both operating segments. The Company also has several sales offices, warehouses and technical centers. The Company's worldwide headquarters are located in a leased facility in Auburn Hills, Michigan. In general, the Company believes its facilities to be suitable and adequate to meet its current and reasonably anticipated needs.

The following is additional information concerning principal manufacturing, assembly, and technical facilities operated by the Company, its subsidiaries, and affiliates.

ENGINE(a)

Americas	Europe	Asia
Asheville, North Carolina	Arcore, Italy	Aoyama, Japan
Auburn Hills, Michigan (d)	Bradford, England	Chennai, India (b)
Cadillac, Michigan	Kirchheimbolanden, Germany	Chungju-City, South Korea
Dixon, Illinois	Ludwigsburg, Germany	Jiangsu, China (b)
El Salto Jalisco, Mexico	Markdorf, Germany	Kakkalur, India
Fletcher, North Carolina	Muggendorf, Germany	Manesar, India
Itatiba, Brazil	Oberboihingen, Germany	Nabari City, Japan
Ithaca, New York	Oroszlany, Hungary (d)	Ningbo, China (b) (c)
Marshall, Michigan	Rzeszow, Poland (d)	Pune, India
Piracicaba, Brazil	Tralee, Ireland	Pyongtaek, South Korea (b) (c)
Ramos, Mexico	Viana de Castelo, Portugal	
	Vigo, Spain	

DRIVETRAIN(a)

Americas	Europe	Asia
Anderson, Indiana (b)	Arnstadt, Germany	Beijing, China (b)
Bellwood, Illinois	Heidelberg, Germany	Dae-Gu, South Korea (b)
Brusque, Brazil (b)	Landskrona, Sweden (b)	Dalian, China (b)
Frankfort, Illinois	Tulle, France	Eumsung, South Korea
Irapuato, Mexico		Fukuroi City, Japan
Laredo, Texas (b)		Jingzhou City, China (b)
Livonia, Michigan		Kyungsangman, South Korea
Melrose Park, Illinois (b)		Ochang, South Korea (b)
Pendleton, Indiana (b)		Shanghai, China (b)
San Luis Potosi, Mexico (b)		Tianjin, China (b)
Seneca, South Carolina		Wuhan, China (b)
Water Valley, Mississippi		

(a) The table excludes joint ventures owned less than 50% and administrative offices.
(b) Indicates leased land rights or a leased facility.
(c) City has 2 locations: a wholly owned subsidiary and a joint venture.
(d) Location serves both segments.

Item 3. Legal Proceedings

The Company is subject to a number of claims and judicial and administrative proceedings (some of which involve substantial amounts) arising out of the Company’s business or relating to matters for which the Company may have a contractual indemnity obligation. See Note 14, "Contingencies," to the Consolidated Financial Statements in Item 8 of this report for a discussion of environmental, product liability and other litigation, which is incorporated herein by reference.

Item 4. Mine Safety Disclosures

Not applicable.

PART II

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

The Company's common stock is listed for trading on the New York Stock Exchange under the symbol BWA. As of February 3, 2017, there were 1,738 holders of record of Common Stock.

On July 24, 2013 the Company announced the reinstatement of its quarterly dividend. Cash dividends declared and paid per share, adjusted for the stock split in December 2013, were as follows:

	2016	2015	2014	2013	2012
Dividend amount	$ 0.53	$ 0.52	$ 0.51	$ 0.25	$ —

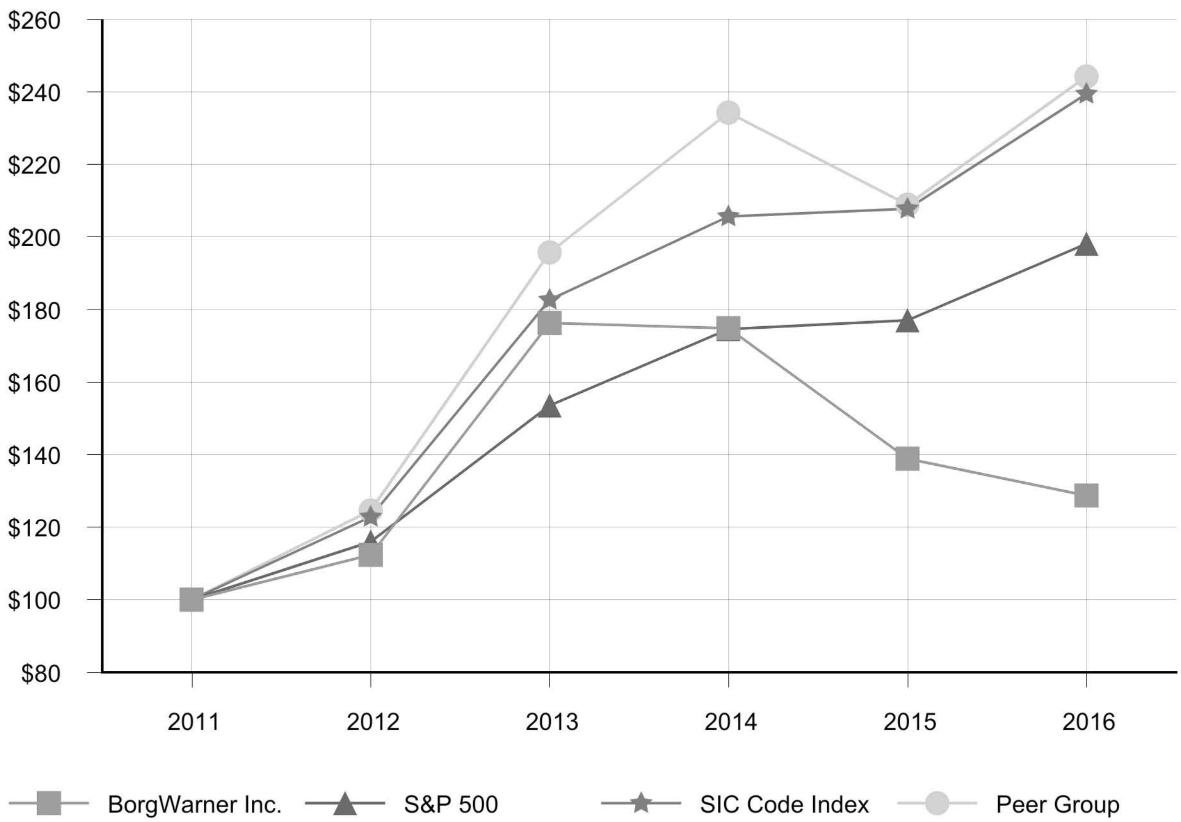
While the Company currently expects that comparable quarterly cash dividends will continue to be paid in the future, the dividend policy is subject to review and change at the discretion of the Board of Directors.

High and low prices (as reported on the New York Stock Exchange composite tape) for the Company's common stock for each quarter in 2015 and 2016 were:

Quarter Ended	High	Low
March 31, 2015	$ 63.01	$ 50.46
June 30, 2015	$ 62.08	$ 56.84
September 30, 2015	$ 57.65	$ 38.89
December 31, 2015	$ 45.53	$ 39.82
March 31, 2016	$ 42.25	$ 28.23
June 30, 2016	$ 39.93	$ 27.69
September 30, 2016	$ 36.12	$ 28.52
December 31, 2016	$ 41.86	$ 33.64

The line graph below compares the cumulative total shareholder return on our Common Stock with the cumulative total return of companies on the Standard & Poor's (S&P's) 500 Stock Index, companies within our peer group (as selected by the Company) and companies within Standard Industrial Code ("SIC") 3714 - Motor Vehicle Parts.

COMPARISON OF 5 YEAR CUMULATIVE TOTAL RETURN*
Among BorgWarner Inc., the S&P 500 Index,
SIC 3714 Motor Vehicle Parts and a Peer Group



*$100 invested on 12/31/2011 in stock or index, including reinvestment of dividends. Fiscal year ending December 31.

BWA, S&P 500 and Peer Group data are from Capital IQ; SIC Code Index data are from Research Data Group

	December 31,					
	2011	2012	2013	2014	2015	2016
BorgWarner Inc.(1)	$ 100.00	$ 112.36	$ 176.31	$ 174.80	$ 138.93	$ 128.74
S&P 500(2)	100.00	116.00	153.58	174.60	177.01	198.18
SIC Code Index(3)	100.00	122.82	182.71	205.67	207.80	239.48
Peer Group(4)	100.00	124.61	195.73	234.30	208.94	244.27

(1) BorgWarner Inc.
(2) S&P 500 — Standard & Poor's 500 Total Return Index
(3) Standard Industrial Code ("SIC") 3714-Motor Vehicle Parts
(4) Selected Peer Group Companies — Consists of the following companies:
American Axle & Manufacturing Holdings, Inc., Autoliv, Inc., Gentex Corporation, Johnson Controls, Inc., Lear Corporation, Magna International Inc., Meritor, Inc., Modine Manufacturing Company, Tenneco Inc. and Visteon Corporation

Purchase of Equity Securities

In February 2015, the Company's Board of Directors authorized the purchase of up to $1.0 billion of the Company's common stock over three years. The Company's Board of Directors has authorized the purchase of up to 69.6 million shares of the Company's common stock in the aggregate. As of December 31, 2016, the Company had repurchased 67,343,100 shares in the aggregate under the Common Stock Repurchase Program. All shares purchased under this authorization have been and will continue to be repurchased in the open market at prevailing prices and at times and in amounts to be determined by management as market conditions and the Company's capital position warrant. The Company may use Rule 10b5-1 and 10b-18 plans to facilitate share repurchases. Repurchased shares will be deemed common stock held in treasury and may subsequently be reissued for general corporate purposes.

Employee transactions include restricted shares withheld to offset statutory minimum tax withholding that occurs upon vesting of restricted shares. The BorgWarner Inc. Amended and Restated 2004 Stock Incentive Plan and the BorgWarner Inc. 2014 Stock Incentive Plan provide that the withholding obligations be settled by the Company retaining stock that is part of the Award. Withheld shares will be deemed common stock held in treasury and may subsequently be reissued for general corporate purposes.

The following table provides information about the Company's purchases of its equity securities that are registered pursuant to Section 12 of the Exchange Act during the quarter ended December 31, 2016:

Issuer Purchases of Equity Securities

Period	Total number of shares purchased	Average price per share	Total number of shares purchased as part of publicly announced plans or programs	Maximum number of shares that may yet be purchased under the plans or programs
Month Ended October 31, 2016				
Common Stock Repurchase Program	467,225	$ 35.09	467,225	2,799,337
Employee transactions	213	$ 35.19	—	
Month Ended November 30, 2016				
Common Stock Repurchase Program	471,412	$ 35.00	471,412	2,327,925
Employee transactions	—	$ —	—	
Month Ended December 31, 2016				
Common Stock Repurchase Program	70,935	$ 38.07	70,935	2,256,990
Employee transactions	—	$ —	—	

Equity Compensation Plan Information

As of December 31, 2016, the number of stock options and restricted common stock outstanding under our equity compensation plans, the weighted average exercise price of outstanding stock options and restricted common stock and the number of securities remaining available for issuance were as follows:

Plan category	Number of securities to be issued upon exercise of outstanding options, restricted common stock, warrants and rights (a)	Weighted average exercise price of outstanding options, restricted common stock, warrants and rights (b)	Number of securities remaining available for future issuance under equity compensation plans (excluding securities reflected in column (a)) (c)
Equity compensation plans approved by security holders	1,902,030	$ 37.49	5,693,856
Equity compensation plans not approved by security holders	—	$ —	—
Total	1,902,030	$ —	5,693,856

Item 6. Selected Financial Data

(in millions, except share and per share data)	Year Ended December 31, 2016	2015	2014	2013	2012
Operating results					
Net sales	$ 9,071.0	$ 8,023.2	$ 8,305.1	$ 7,436.6	$ 7,183.2
Operating income (a)	$ 225.9	$ 939.7	$ 963.7	$ 855.2	$ 752.9
Net earnings attributable to BorgWarner Inc. (a)	$ 118.5	$ 609.7	$ 655.8	$ 624.3	$ 500.9
Earnings per share — basic (b)	$ 0.55	$ 2.72	$ 2.89	$ 2.73	$ 2.22
Earnings per share — diluted (b)	$ 0.55	$ 2.70	$ 2.86	$ 2.70	$ 2.09
Net R&D expenditures	$ 343.2	$ 307.4	$ 336.2	$ 303.2	$ 265.9
Capital expenditures, including tooling outlays	$ 500.6	$ 577.3	$ 563.0	$ 417.8	$ 407.4
Depreciation and amortization	$ 391.4	$ 320.2	$ 330.4	$ 299.4	$ 288.6
Number of employees	27,000	30,000	22,000	19,700	19,100
Financial position					
Cash	$ 443.7	$ 577.7	$ 797.8	$ 939.5	$ 715.7
Total assets (c)	$ 8,834.7	$ 8,825.7	$ 7,225.2	$ 6,913.7	$ 6,397.0
Total debt (c)	$ 2,219.5	$ 2,550.3	$ 1,337.2	$ 1,219.3	$ 1,063.4
Common share information					
Cash dividend declared and paid per share (b)	$ 0.53	$ 0.52	$ 0.51	$ 0.25	$ —
Market prices of the Company's common stock (b)					
High	$ 42.25	$ 63.01	$ 67.38	$ 56.45	$ 43.73
Low	$ 27.69	$ 38.89	$ 50.24	$ 35.22	$ 30.09
Weighted average shares outstanding (thousands) (b)					
Basic	214,374	224,414	227,150	228,600	225,304
Diluted	215,328	225,648	228,924	231,337	242,754

(a) Refer to Item 7, "Management's Discussion and Analysis of Financial Condition and Results of Operations," for discussion of non-comparable items impacting the years ended December 31, 2016, 2015 and 2014.

(b) Amounts have been adjusted for the two-for-one stock split that was effected through a stock dividend on December 16, 2013.

(c) Amounts have been adjusted for the retrospective adoption of the Accounting Standard Update ("ASU") No. 2015-03, "Simplifying the Presentation of Debt Issuance Costs." Refer to Note 1, “Summary of Significant Accounting Policies,” to the Consolidated Financial Statements in Item 8 of this report for more information.

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

INTRODUCTION

BorgWarner Inc. and Consolidated Subsidiaries (the "Company") is a global product leader in clean and efficient technology solutions for combustion, hybrid and electric vehicles. Our products help improve vehicle performance, propulsion efficiency, stability and air quality. These products are manufactured and sold worldwide, primarily to original equipment manufacturers ("OEMs") of light vehicles (passenger cars, sport-utility vehicles ("SUVs"), vans and light trucks). The Company's products are also sold to other OEMs of commercial vehicles (medium-duty trucks, heavy-duty trucks and buses) and off-highway vehicles (agricultural and construction machinery and marine applications). We also manufacture and sell our products to certain Tier One vehicle systems suppliers and into the aftermarket for light, commercial and off-highway vehicles. The Company operates manufacturing facilities serving customers in Europe, the Americas and Asia and is an original equipment supplier to every major automotive OEM in the world.

The Company's products fall into two reporting segments: Engine and Drivetrain. The Engine segment's products include turbochargers, timing devices and chains, emissions systems and thermal systems. The Drivetrain segment's products include transmission components and systems, AWD torque transfer systems and rotating electrical devices.

RESULTS OF OPERATIONS

A summary of our operating results for the years ended December 31, 2016, 2015 and 2014 is as follows:

	Year Ended December 31,		
(millions of dollars, except per share data)	2016	2015	2014
Net sales	$ 9,071.0	$ 8,023.2	$ 8,305.1
Cost of sales	7,137.9	6,320.1	6,548.7
Gross profit	1,933.1	1,703.1	1,756.4
Selling, general and administrative expenses	817.5	662.0	698.9
Other expense, net	889.7	101.4	93.8
Operating income	225.9	939.7	963.7
Equity in affiliates' earnings, net of tax	(42.9)	(40.0)	(47.3)
Interest income	(6.3)	(7.5)	(5.5)
Interest expense and finance charges	84.6	60.4	36.4
Earnings before income taxes and noncontrolling interest	190.5	926.8	980.1
Provision for income taxes	30.3	280.4	292.6
Net earnings	160.2	646.4	687.5
Net earnings attributable to the noncontrolling interest, net of tax	41.7	36.7	31.7
Net earnings attributable to BorgWarner Inc.	$ 118.5	$ 609.7	$ 655.8
Earnings per share — diluted	$ 0.55	$ 2.70	$ 2.86

Non-comparable items impacting the Company's earnings per diluted share and net earnings

The Company's earnings per diluted share were $0.55, $2.70 and $2.86 for the years ended December 31, 2016, 2015 and 2014, respectively. The non-comparable items presented below are calculated after tax using the corresponding effective tax rate and the weighted average number of diluted shares for each of the years then ended. The Company believes the following table is useful in highlighting non-comparable items that impacted its earnings per diluted share:

	Year Ended December 31,		
Non-comparable items:	2016	2015	2014
Asbestos-related charge	$ (2.05)	$ —	$ —
Loss on divestiture	(0.48)	—	—
Merger and acquisition expense	(0.11)	(0.08)	—
Restructuring expense	(0.10)	(0.27)	(0.33)
Intangible asset impairment	(0.04)	—	(0.04)
Contract expiration gain	0.02	—	—
Pension settlement loss	—	(0.07)	(0.01)
Gain on previously held equity interest	—	0.05	—
Tax adjustments	0.04	0.04	—
Total impact of non-comparable items per share — diluted:	$ (2.72)	$ (0.33)	$ (0.38)

A summary of non-comparable items impacting the Company's net earnings for the years ended December 31, 2016, 2015 and 2014 is as follows:

Year ended December 31, 2016:

- In the fourth quarter of 2016, the Company determined that its best estimate of the aggregate liability both for asbestos-related claims asserted but not yet resolved and potential asbestos-related claims not yet asserted, including an estimate for defense costs, is $879.3 million as of December 31, 2016. The Company recorded a charge of $703.6 million before tax ($440.6 million after tax) in Other Expense, representing the difference in the total liability from what was previously accrued, consulting fees, less available insurance coverage. Refer to Note 14, "Contingencies," to the Consolidated Financial Statements in Item 8 of this report for more information.
- In October 2016, the Company sold the Remy light vehicle aftermarket business associated with the 2015 Remy International, Inc. ("Remy") acquisition and recorded a loss on divestiture of $127.1 million. Refer to Note 18, "Recent Transactions," to the Consolidated Financial Statements in Item 8 of this report for more information.
- The Company recorded $23.7 million transition and realignment expenses associated with the Remy acquisition, including certain costs related to the sale of Remy light vehicle aftermarket business.
- The Company incurred restructuring expense of $26.9 million primarily related to continuation of prior year actions in both the Drivetrain and Engine segments. The Drivetrain segment charges represent other expenses and employee termination benefits associated with three labor unions at separate facilities in Western Europe for approximately 450 employees, as well as restructuring of the 2015 Remy acquisition. The Engine segment charges primarily relate to the restructuring of the 2014 Gustav Wahler GmbH u. Co. KG and its general partner ("Wahler") acquisition. These expenses included $10.6 million related to employee termination benefits and $16.3 million of other expenses including $3.1 million related to winding down certain operations in North America. Both the Drivetrain and Engine restructuring actions are designed to improve the future profitability and competitiveness of each segment.
- The Company recorded intangible asset impairment losses of $12.6 million related to Engine segment Etatech's ECCOS intellectual technology due to the discontinuance of interest from potential customers during the fourth quarter of 2016 that significantly lowered the commercial feasibility of the product line.

- The Company recorded $6.2 million gain associated with the release of certain Remy light vehicle aftermarket liabilities related to the expiration of a customer contract.
- The Company recorded tax benefits of $263.0 million, $22.7 million, $8.6 million, $6.0 million and $4.4 million primarily related to asbestos-related charge, loss on divestiture, other one-time tax adjustments, restructuring expense and intangible asset impairment loss, respectively, as well as a tax expense of $2.2 million related to a gain associated with the release of certain Remy light vehicle aftermarket liabilities due to the expiration of a customer contract.

Year ended December 31, 2015:

- The Company incurred restructuring expense of $65.7 million, associated with both the Drivetrain and Engine segments and a global realignment plan. The Drivetrain segment charges mostly represent expenses associated with severance agreements with three labor unions at separate facilities in Western Europe for approximately 450 employees, as well as restructuring of the 2015 Remy acquisition. The Engine segment charges primarily relate to the restructuring of the 2014 Wahler acquisition. These expenses included $41.5 million related to employee termination benefits and $11.7 million of other expenses. Both the Drivetrain and Engine restructuring actions are designed to improve the future profitability and competitiveness of each segment. Also included in the restructuring amount above is $12.5 million related to a global realignment plan intended to enhance treasury management flexibility by creating a legal entity structure that better aligns with the Company's business strategy.
- The Company incurred a non-cash settlement loss of $25.7 million related to a lump-sum pension de-risking disbursement made to an insurance company to unconditionally and irrevocably guarantee all future payments to certain participants that were receiving payments from the U.S. pension plan.
- The Company recorded $21.8 million for merger and acquisition expenses primarily related to the Remy acquisition. This amount includes $13.0 million related to investment banker fees and $8.8 million related to professional fees.
- The Company recorded a $10.8 million gain on the previously held equity interest in BERU Diesel Start Systems Pvt. Ltd. ("BERU Diesel") as a result of acquiring the remaining 51% of this joint venture.
- The Company recorded tax benefits of $9.9 million, $9.0 million, $3.8 million and $3.7 million primarily related to foreign tax incentives and tax settlements, the pension settlement loss, merger and acquisition expense and restructuring expense, respectively.

Year ended December 31, 2014:

- The Company incurred restructuring expense of $90.8 million, primarily associated with both the Drivetrain and Engine segments. The Drivetrain segment charges primarily represent a continuation of expenses associated with the first quarter 2014 finalization of severance agreements with three labor unions at separate facilities in Western Europe for approximately 350 employees. The Engine segment charges primarily relate to the restructuring of the Wahler acquisition. These expenses included $57.9 million related to employee termination benefits and $20.9 million of other expenses. Additionally, the Company also recorded restructuring charges of $12.0 million related to a global realignment plan intended to enhance treasury management flexibility by creating a legal entity structure that better aligns with the Company's business strategy. Both the Drivetrain and Engine restructuring actions are designed to improve the future profitability and competitiveness of each segment.
- The Company incurred intangible asset impairment losses of $10.3 million related to the Engine segment, primarily driven by the decision to discontinue the use of an unamortized trade name.
- The Company incurred a settlement loss of $3.1 million related to lump-sum payments made to former employees of the Company to discharge its obligation under the U.S pension plan.

- The Company recorded tax benefits of $15.3 million, $0.4 million and $1.1 million related to restructuring expense, intangible asset impairment losses and the pension settlement loss, respectively.

Net Sales

Net sales for the year ended December 31, 2016 totaled $9,071.0 million, a 13.1% increase from the year ended December 31, 2015. Excluding the impact of weakening foreign currencies, and the 2015 Remy acquisition, net sales increased 5.2%.

Net sales for the year ended December 31, 2015 totaled $8,023.2 million, a 3.4% decrease from the year ended December 31, 2014. Excluding the impact of weakening foreign currencies, primarily the Euro, the 2014 Wahler acquisition, the 2015 BERU Diesel acquisition and the 2015 Remy acquisition, net sales increased 4.3%.

The following table details our results of operations as a percentage of net sales:

	Year Ended December 31,		
(percentage of net sales)	2016	2015	2014
Net sales	100.0%	100.0%	100.0%
Cost of sales	78.7	78.8	78.9
Gross profit	21.3	21.2	21.1
Selling, general and administrative expenses	9.0	8.3	8.4
Other expense, net	9.8	1.2	1.1
Operating income	2.5	11.7	11.6
Equity in affiliates' earnings, net of tax	(0.5)	(0.5)	(0.6)
Interest income	(0.1)	(0.1)	(0.1)
Interest expense and finance charges	0.9	0.8	0.5
Earnings before income taxes and noncontrolling interest	2.2	11.5	11.8
Provision for income taxes	0.3	3.5	3.5
Net earnings	1.9	8.0	8.3
Net earnings attributable to the noncontrolling interest, net of tax	0.5	0.4	0.4
Net earnings attributable to BorgWarner Inc.	1.4%	7.6%	7.9%

Cost of sales as a percentage of net sales was 78.7%, 78.8% and 78.9% in the years ended December 31, 2016, 2015 and 2014, respectively. The Company's material cost of sales was approximately 55% of net sales in the years ended December 31, 2016, 2015 and 2014. The Company's remaining cost to convert raw material to finished product, which includes direct labor and manufacturing overhead, had continued to improve during the years ended December 31, 2016 and 2015 compared to 2014. Gross profit as a percentage of net sales was 21.3%, 21.2% and 21.1% in the years ended December 31, 2016, 2015 and 2014, respectively. Included in the 2016 gross profit and gross margin is a $6.2 million gain associated with the release of certain Remy light vehicle aftermarket liabilities related to the expiration of a customer contract.

Selling, general and administrative expenses ("SG&A") was $817.5 million, $662.0 million and $698.9 million or 9.0%, 8.3% and 8.4% of net sales for the years ended December 31, 2016, 2015 and 2014, respectively. Excluding the impact of the 2015 acquisition of Remy, SG&A and SG&A as a percentage of net sales were $696.0 million and 8.5% for the year ended December 31, 2016.

Research and development ("R&D") costs, net of customer reimbursements, was $343.2 million, or 3.8% of net sales, in the year ended December 31, 2016, compared to $307.4 million, or 3.8% of net sales, and $336.2 million, or 4.0% of net sales, in the years ended December 31, 2015 and 2014, respectively. We will continue to invest in a number of cross-business R&D programs, as well as a number of other key programs, all of which are necessary for short- and long-term growth. Our current long-term expectation for R&D spending is approximately 4% of net sales.

Other expense, net was $889.7 million, $101.4 million and $93.8 million for the years ended December 31, 2016, 2015 and 2014, respectively. This line item is primarily comprised of items discussed within the subtitle "Non-comparable items impacting the Company's earnings per diluted share and net earnings" above.

Equity in affiliates' earnings, net of tax was $42.9 million, $40.0 million and $47.3 million in the years ended December 31, 2016, 2015 and 2014, respectively. This line item is driven by the results of our 50%-owned Japanese joint venture, NSK-Warner, and our 32.6%-owned Indian joint venture, Turbo Energy Private Limited ("TEL"). The increase in the year ended December 31, 2016 compared to 2015 and 2014 is primarily driven by higher earnings from NSK-Warner as a result of improved business conditions in Asia. Refer to Note 5, "Balance Sheet Information," to the Consolidated Financial Statements in Item 8 of this report for further discussion of NSK-Warner.

Interest expense and finance charges were $84.6 million, $60.4 million and $36.4 million in the years ended December 31, 2016, 2015 and 2014, respectively. The increase in interest expense for the year ended December 31, 2016 compared with the years ended December 31, 2015 and 2014 was primarily due to the Company's March and November 2015 issuances of senior notes.

Provision for income taxes The provision for income taxes resulted in an effective tax rate of 15.9% for the year ended December 31, 2016, compared with rates of 30.3% and 29.9% for the years ended December 31, 2015 and 2014, respectively.

The effective tax rate of 15.9% for the year ended December 31, 2016 includes tax benefits of $263.0 million, $22.7 million, $8.6 million, $6.0 million and $4.4 million associated with an asbestos-related charge, loss on divestiture, other one-time tax adjustments, restructuring expense and intangible asset impairment loss, respectively, as well as a tax expense of $2.2 million related to a gain associated with the release of certain Remy light vehicle aftermarket liabilities due to the expiration of a customer contract. Excluding the impact of these non-comparable items, the Company's annual effective tax rate associated with ongoing operations for 2016 was 30.9%.

The effective tax rate of 30.3% for the year ended December 31, 2015 includes tax benefits of $9.0 million, $3.8 million and $3.7 million related to the pension settlement loss, merger and acquisition expense and restructuring expense discussed in Note 3, "Other Expense, Net," to the Consolidated Financial Statements in Item 8 of the report. Additionally, the effective tax rate includes a tax benefit of $9.9 million primarily related to foreign tax incentives and tax settlements. Excluding the impact of these non-comparable items, the Company's annual effective tax rate associated with ongoing operations for 2015 was 29.8%.

The effective tax rate of 29.9% for the year ended December 31, 2014 includes tax benefits of $15.3 million, $0.4 million and $1.1 million related to restructuring expense, intangible asset impairment losses and the pension settlement loss discussed in Note 3, "Other Expense, Net," to the Consolidated Financial Statements in Item 8 of this report. Excluding the impact of these non-comparable items, the Company's annual effective tax rate associated with ongoing operations for 2014 was 28.5%.

Net earnings attributable to the noncontrolling interest, net of tax of $41.7 million for the year ended December 31, 2016 increased by $5.0 million and $10.0 million compared to the years ended December 31, 2015 and 2014, respectively. The increase during the year ended December 31, 2016 compared to the years ended December 31, 2015 and 2014 was primarily related to higher sales and earnings by the Company's joint ventures.

Results By Reporting Segment

The Company's business is comprised of two reporting segments: Engine and Drivetrain. These segments are strategic business groups, which are managed separately as each represents a specific grouping of related automotive components and systems.

The Company allocates resources to each segment based upon the projected after-tax return on invested capital ("ROIC") of its business initiatives. ROIC is comprised of Adjusted EBIT after deducting notional taxes compared to the projected average capital investment required. Adjusted EBIT is comprised of earnings before interest, income taxes and noncontrolling interest ("EBIT") adjusted for restructuring, goodwill impairment charges, affiliates' earnings and other items not reflective of ongoing operating income or loss.

Adjusted EBIT is the measure of segment income or loss used by the Company. The Company believes Adjusted EBIT is most reflective of the operational profitability or loss of our reporting segments.

The following tables show segment information and Adjusted EBIT for the Company's reporting segments.

Net Sales by Reporting Segment

	Year Ended December 31,		
(millions of dollars)	2016	2015	2014
Engine	$ 5,590.1	$ 5,500.0	$ 5,705.9
Drivetrain	3,523.7	2,556.7	2,631.4
Inter-segment eliminations	(42.8)	(33.5)	(32.2)
Net sales	$ 9,071.0	$ 8,023.2	$ 8,305.1

Adjusted Earnings Before Interest, Income Taxes and Noncontrolling Interest ("Adjusted EBIT")

	Year Ended December 31,		
(millions of dollars)	2016	2015	2014
Engine	$ 934.1	$ 900.7	$ 924.0
Drivetrain	354.5	294.6	303.3
Adjusted EBIT	1,288.6	1,195.3	1,227.3
Asbestos-related charge	703.6	—	—
Loss on divestiture	127.1	—	—
Restructuring expense	26.9	65.7	90.8
Merger and acquisition expense	23.7	21.8	—
Intangible asset impairment	12.6	—	10.3
Contract expiration gain	(6.2)	—	—
Pension settlement loss	—	25.7	3.1
Gain on previously held equity interest	—	(10.8)	—
Corporate, including equity in affiliates' earnings and stock-based compensation	132.1	113.2	112.1
Interest income	(6.3)	(7.5)	(5.5)
Interest expense and finance charges	84.6	60.4	36.4
Earnings before income taxes and noncontrolling interest	190.5	926.8	980.1
Provision for income taxes	30.3	280.4	292.6
Net earnings	160.2	646.4	687.5
Net earnings attributable to the noncontrolling interest, net of tax	41.7	36.7	31.7
Net earnings attributable to BorgWarner Inc.	$ 118.5	$ 609.7	$ 655.8

The **Engine** segment's net sales for the year ended December 31, 2016 increased $90.1 million, or 1.6%, and segment Adjusted EBIT increased $33.4 million, or 3.7%, from the year ended December 31, 2015. Excluding the impact of weakening foreign currencies, primarily the Euro, Chinese Renminbi and Korean Won, net sales increased 3.1% from the year ended December 31, 2015 primarily due to higher sales of light vehicle turbochargers and engine timing systems, including variable cam timing, partially offset by weak aftermarket and commercial vehicle markets around the world. The segment Adjusted EBIT margin was 16.7% for the year ended December 31, 2016, up from 16.4% in the year ended December 31, 2015.

The Engine segment's net sales for the year ended December 31, 2015 decreased $205.9 million, or 3.6%, and segment Adjusted EBIT decreased $23.3 million, or 2.5%, from the year ended December 31, 2014. Excluding the impact of weakening foreign currencies, primarily the Euro, the 2014 Wahler acquisition and the 2015 BERU Diesel acquisition, net sales increased 6.7% from the year ended December 31, 2014 primarily due to higher sales of turbochargers, partially offset by weak commercial vehicle markets around the world. The segment Adjusted EBIT margin was 16.4% for the year ended December 31, 2015, up from 16.2% in the year ended December 31, 2014.

The **Drivetrain** segment's net sales for the year ended December 31, 2016 increased $967.0 million, or 37.8%, and segment Adjusted EBIT increased $59.9 million, or 20.3%, from the year ended December 31, 2015. Excluding the impact of weakening foreign currencies, primarily the Euro, Chinese Renminbi and Korean Won, and the 2015 Remy acquisition, net sales increased 9.9% from the year ended December 31, 2015 primarily due to higher sales of all-wheel drive systems. The segment Adjusted EBIT margin was 10.1% in the year ended December 31, 2016, compared to 11.5% in the year ended December 31, 2015. The Adjusted EBIT margin decrease was primarily due to the 2015 acquisition of Remy.

The Drivetrain segment's net sales for the year ended December 31, 2015 decreased $74.7 million, or 2.8%, and segment Adjusted EBIT decreased $8.7 million, or 2.9%, from the year ended December 31, 2014. Excluding the impact of weakening foreign currencies, primarily the Euro, and the 2015 Remy acquisition, net sales decreased 0.8% from the year ended December 31, 2014 primarily due to lower sales of transmission components in Europe. The segment Adjusted EBIT margin was 11.5% in the year ended December 31, 2015, compared to 11.5% in the year ended December 31, 2014.

Corporate represents headquarters' expenses not directly attributable to the individual segments and equity in affiliates' earnings. This net expense was $132.1 million, $113.2 million and $112.1 million for the years ended December 31, 2016, 2015 and 2014, respectively. The increase of Corporate expenses in 2016 is primarily due to costs associated with the onboarding and severance of talent, compliance costs and various other corporate investment initiatives.

Outlook

Our overall outlook for 2017 is positive. The Company expects modest global production growth and net new business-related sales growth in 2017 due to rapid adoption of BorgWarner products around the world. This growth is expected to be partially offset by a stronger U.S. dollar, which would reduce the U.S. dollar value of its foreign currency-denominated sales.

The Company maintains a positive long-term outlook for its global business and is committed to new product development and strategic capital investments to enhance its product leadership strategy. The several trends that are driving our long-term growth are expected to continue, including the increased turbocharger adoption in North American and Asia, the increased adoption of automated transmissions in Europe and Asia-Pacific, and the move to variable cam and chain engine timing systems in Europe and Asia-Pacific. Our long-term growth is also expected to benefit from the adoption of product offerings for hybrid and electric vehicles.

LIQUIDITY AND CAPITAL RESOURCES

The Company maintains various liquidity sources including cash and cash equivalents and the unused portion of our multi-currency revolving credit agreement. At December 31, 2016, the Company had $443.7 million of cash, of which $437.1 million of cash was held by our subsidiaries outside of the United States. Cash held by these subsidiaries is used to fund foreign operational activities and future investments, including acquisitions. The vast majority of cash held outside the United States is available for repatriation, however, doing so could result in increased foreign and U.S. federal, state and local income taxes. A deferred tax liability has been recorded for the portion of these funds anticipated to be repatriated to the United States. The Company uses its U.S. liquidity primarily for various corporate purposes, including but not limited to, debt service, share repurchases, dividend distributions and other corporate expenses.

The Company has a $1 billion multi-currency revolving credit facility which includes a feature that allows the Company's borrowings to be increased to $1.25 billion. The facility provides for borrowings through June 30, 2019. The Company has one key financial covenant as part of the credit agreement which is a debt to EBITDA ("Earnings Before Interest, Taxes, Depreciation and Amortization") ratio. The Company was in compliance with the financial covenant at December 31, 2016 and expects to remain compliant in future periods. At December 31, 2016 and December 31, 2015, the Company had no outstanding borrowings under this facility.

The Company's commercial paper program allows the Company to issue short-term, unsecured commercial paper notes up to a maximum aggregate principal amount outstanding of $1 billion. Under this program, the Company may issue notes from time to time and will use the proceeds for general corporate purposes. At December 31, 2016 and 2015, the Company had outstanding borrowings of $50.8 million and $215.0 million, respectively, under this program, which is classified in the Consolidated Balance Sheets in Notes payable and other short-term debt.

The total current combined borrowing capacity under the multi-currency revolving credit facility and commercial paper program cannot exceed $1 billion.

In addition to the credit facility, the Company's universal shelf registration has an unlimited amount of various debt and equity instruments that could be issued.

On February 10, 2016, April 27, 2016 and July 26, 2016, the Company’s Board of Directors declared quarterly cash dividends of $0.13 per share of common stock. On November 9, 2016, the Company's Board of Directors declared quarterly cash dividends of $0.14 per share of common stock. These dividends were paid in the 12 months ended December 31, 2016.

The Company's net debt to net capital ratio was 35.0% at December 31, 2016 versus 35.2% at December 31, 2015.

From a credit quality perspective, the Company has a credit rating of BBB+ from both Standard & Poor's and Fitch Ratings and Baa1 from Moody's. The current outlook from Standard & Poor's and Fitch Ratings is stable. During the first quarter of 2016, Moody's revised its outlook from stable to negative. None of the Company's debt agreements require accelerated repayment in the event of a downgrade in credit ratings.

Capitalization

(millions of dollars)	December 31, 2016	December 31, 2015
Notes payable and short-term debt	$ 175.9	$ 441.4
Long-term debt	2,043.6	2,108.9
Total debt	2,219.5	2,550.3
Less: cash	443.7	577.7
Total debt, net of cash	1,775.8	1,972.6
Total equity	3,301.9	3,631.5
Total capitalization	$ 5,077.7	$ 5,604.1
Total debt, net of cash, to capital ratio	35.0%	35.2%

Balance sheet debt decreased by $330.8 million and cash decreased by $134.0 million compared with December 31, 2015. The $196.8 million decrease in balance sheet debt (net of cash) was primarily due to the repayment of the Company's $150 million 5.75% Senior Notes and other short term borrowings.

Total equity decreased by $329.6 million in the year ended December 31, 2016 as follows:

(millions of dollars)	
Balance, January 1, 2016	$ 3,631.5
Net earnings	160.2
Purchase of treasury stock	(274.8)
Stock-based compensation	46.2
Business divestiture	(4.8)
Other comprehensive loss	(117.0)
Dividends declared to BorgWarner stockholders	(113.4)
Dividends declared to noncontrolling stockholders	(26.0)
Balance, December 31, 2016	$ 3,301.9

Operating Activities

Net cash provided by operating activities was $1,035.7 million, $867.9 million and $801.8 million in the years ended December 31, 2016, 2015 and 2014, respectively. The increase for the year ended December 31, 2016 compared with the year ended December 31, 2015 primarily reflects higher net earnings adjusted for non-cash charges to operations and improved working capital resulting from inventory management initiatives and product mix change. The increase for the year ended December 31, 2015 compared with the year ended December 31, 2014 primarily reflects improved working capital, partially offset by lower net earnings adjusted for non-cash charges to operations.

Investing Activities

Net cash used in investing activities was $404.2 million, $1,759.1 million and $665.1 million in the years ended December 31, 2016, 2015 and 2014, respectively. The decrease in the year ended December 31, 2016 compared with the year ended December 31, 2015 is primarily due to lower capital expenditures, including tooling outlays, the 2016 sale of Divgi-Warner and Remy light vehicle aftermarket business and the 2015 acquisition of Remy and BERU Diesel. The increase in the year ended December 31, 2015 compared with the year ended December 31, 2014 is primarily driven by the 2015 acquisitions of Remy and BERU Diesel and higher capital expenditures, partially offset by the 2014 acquisition of Wahler and a gain on the settlement of net investment hedges in 2015. Year over year capital spending decrease of $76.7 million during the year ended December 31, 2016 is due to lower spending on new buildings and building expansions. Year over year capital spending increase of $14.3 million during the year ended December 31, 2015 was primarily due to higher spending levels required to meet increased program launches worldwide.

Financing Activities

Net cash used in financing activities was $733.8 million for the year ended December 31, 2016, net cash provided by financing activities was $736.6 million for the year ended December 31, 2015 and net cash used in financing activities was $201.7 million for the year ended December 31, 2014. The decrease in the year ended December 31, 2016 compared with the year ended December 31, 2015 is primarily driven by lower debt borrowings and higher debt repayments, partially offset by lower treasury stock purchases. The increase in the year ended December 31, 2015 compared with the year ended December 31, 2014 is primarily driven by the $1 billion issuance of senior notes in March 2015 and the €500 million issuance of senior notes in November 2015, partially offset by the decrease in notes payable, treasury stock purchases and dividend payments.

The Company's significant contractual obligation payments at December 31, 2016 are as follows:

(millions of dollars)	Total	2017	2018-2019	2020-2021	After 2021
Other postretirement employee benefits, excluding pensions (a)	$ 159.7	$ 14.8	$ 26.3	$ 23.0	$ 95.6
Defined benefit pension plans (b)	42.1	3.2	7.5	7.8	23.6
Notes payable and long-term debt	2,230.7	175.9	153.2	254.2	1,647.4
Projected interest payments	953.3	83.1	146.5	121.1	602.6
Non-cancelable operating leases	55.1	24.1	14.4	12.8	3.8
Capital spending obligations	85.3	85.3	—	—	—
Income tax payments (c)	244.7	244.7	—	—	—
Total	$ 3,770.9	$ 631.1	$ 347.9	$ 418.9	$ 2,373.0

(a) Other postretirement employee benefits, excluding pensions, include anticipated future payments to cover retiree medical and life insurance benefits. Refer to Note 11, "Retirement Benefit Plans," to the Consolidated Financial Statements in Item 8 of this report for disclosures related to the Company's other postretirement employee benefits.

(b) Since the timing and amount of payments for funded defined benefit pension plans are usually not certain for future years such potential payments are not shown in this table. Amount contained in "After 2021" column is for unfunded plans and includes estimated payments through 2026. Refer to Note 11, "Retirement Benefit Plans," to the Consolidated Financial Statements in Item 8 of this report for disclosures related to the Company's pension benefits.

(c) Refer to Note 4, "Income Taxes," to the Consolidated Financial Statements in Item 8 of this report for disclosures related to the Company's income taxes.

We believe that the combination of cash from operations, cash balances, available credit facilities, and the universal shelf registration capacity will be sufficient to satisfy our cash needs for our current level of operations and our planned operations for the foreseeable future. We will continue to balance our needs for internal growth, external growth, debt reduction and cash conservation.

Asbestos-related Liability

During 2016 and 2015, the Company had paid indemnity and related defense costs totaling $45.3 million and $54.7 million, respectively. These gross payments are before tax benefits and any insurance receipts. Indemnity and defense costs are incorporated into the Company's operating cash flows and will continue to be in the future.

Refer to Note 14, "Contingencies," to the Consolidated Financial Statements in Item 8 of this report for more information regarding costs and assumptions for asbestos-related liability.

Off Balance Sheet Arrangements

The Company has certain leases that are recorded as operating leases. Types of operating leases include leases on facilities, an airplane, vehicles and certain office equipment. The total expected future cash outlays for non-cancelable operating lease obligations at December 31, 2016 is $55.1 million. Refer to Note 16, "Leases and Commitments," to the Consolidated Financial Statements in Item 8 of this report for more information on operating leases, including future minimum payments.

Pension and Other Postretirement Employee Benefits

The Company's policy is to fund its defined benefit pension plans in accordance with applicable government regulations and to make additional contributions when appropriate. At December 31, 2016, all legal funding requirements had been met. The Company contributed $19.7 million, $19.3 million and $53.4 million to its defined benefit pension plans in the years ended December 31, 2016, 2015 and 2014, respectively. The Company expects to contribute a total of $15 million to $25 million into its defined benefit pension plans during 2017. Of the $15 million to $25 million in projected 2017 contributions, $3.2 million are contractually obligated, while any remaining payments would be discretionary.

The funded status of all pension plans was a net unfunded position of $187.4 million and $178.3 million at December 31, 2016 and 2015, respectively. Of these amounts, $77.5 million and $64.3 million at December 31, 2016 and 2015, respectively, were related to plans in Germany, where there is not a tax deduction allowed under the applicable regulations to fund the plans; hence the common practice is to make contributions as benefit payments become due.

Other postretirement employee benefits primarily consist of postretirement health care benefits for certain employees and retirees of the Company's U.S. operations. The Company funds these benefits as retiree claims are incurred. Other postretirement employee benefits had an unfunded status of $119.9 million and $145.3 million at December 31, 2016 and 2015, respectively.

The Company believes it will be able to fund the requirements of these plans through cash generated from operations or other available sources of financing for the foreseeable future.

Refer to Note 11, "Retirement Benefit Plans," to the Consolidated Financial Statements in Item 8 of this report for more information regarding costs and assumptions for employee retirement benefits.

OTHER MATTERS

Contingencies

In the normal course of business, the Company is party to various commercial and legal claims, actions and complaints, including matters involving warranty claims, intellectual property claims, general liability and various other risks. It is not possible to predict with certainty whether or not the Company will ultimately be successful in any of these commercial and legal matters or, if not, what the impact might be. The

Company's environmental and asbestos liability contingencies are discussed separately below. The Company's management does not expect that an adverse outcome in any of these commercial and legal claims, actions and complaints will have a material adverse effect on the Company's results of operations, financial position or cash flows, although it could be material to the results of operations in a particular quarter.

Litigation

In January 2006, BorgWarner Diversified Transmission Products Inc. ("DTP"), a subsidiary of the Company, filed a declaratory judgment action in United States District Court, Southern District of Indiana (Indianapolis Division) against the United Automobile, Aerospace, and Agricultural Implements Workers of America (“UAW”) Local No. 287 and Gerald Poor, individually and as the representative of a defendant class. DTP sought the Court's affirmation that DTP did not violate the Labor-Management Relations Act or the Employee Retirement Income Security Act (ERISA) by unilaterally amending certain medical plans effective April 1, 2006 and October 1, 2006, prior to the expiration of the then-current collective bargaining agreements. On September 10, 2008, the Court found that DTP's reservation of the right to make such amendments reducing the level of benefits provided to retirees was limited by its collectively bargained health insurance agreement with the UAW, which did not expire until April 24, 2009. Thus, the amendments were untimely. In 2008, the Company recorded a charge of $4.0 million as a result of the Court's decision.

DTP filed a declaratory judgment action in the United States District Court, Southern District of Indiana (Indianapolis Division) against the UAW Local No. 287 and Jim Barrett and others, individually and as representatives of a defendant class, on February 26, 2009 again seeking the Court's affirmation that DTP did not violate the Labor - Management Relations Act or ERISA by modifying the level of benefits provided retirees to make them comparable to other Company retiree benefit plans after April 24, 2009. Certain retirees, on behalf of themselves and others, filed a mirror-image action in the United States District Court, Eastern District of Michigan (Southern Division) on March 11, 2009, for which a class has been certified. During the last quarter of 2009, the action pending in Indiana was dismissed, while the action in Michigan continued. On December 5, 2016, the Court granted the Company’s Motion for Summary Judgment and ordered dismissal of the retirees’ Complaint with prejudice. No appeal was filed on behalf of the retirees and the time to file an appeal has expired.

Environmental

The Company and certain of its current and former direct and indirect corporate predecessors, subsidiaries and divisions have been identified by the United States Environmental Protection Agency and certain state environmental agencies and private parties as potentially responsible parties (“PRPs”) at various hazardous waste disposal sites under the Comprehensive Environmental Response, Compensation and Liability Act (“Superfund”) and equivalent state laws and, as such, may presently be liable for the cost of clean-up and other remedial activities at 27 such sites. Responsibility for clean-up and other remedial activities at a Superfund site is typically shared among PRPs based on an allocation formula.

The Company believes that none of these matters, individually or in the aggregate, will have a material adverse effect on its results of operations, financial position or cash flows. Generally, this is because either the estimates of the maximum potential liability at a site are not material or the liability will be shared with other PRPs, although no assurance can be given with respect to the ultimate outcome of any such matter.

Based on information available to the Company (which in most cases includes: an estimate of allocation of liability among PRPs; the probability that other PRPs, many of whom are large, solvent public companies, will fully pay the cost apportioned to them; currently available information from PRPs and/or federal or state environmental agencies concerning the scope of contamination and estimated remediation and consulting costs; and remediation alternatives), the Company has an accrual for indicated environmental liabilities of $6.3 million and $5.4 million at December 31, 2016 and at December 31, 2015, respectively. The Company expects to pay out substantially all of the amounts accrued for environmental liability over the next five years.

In connection with the sale of Kuhlman Electric Corporation ("Kuhlman Electric"), the Company agreed to indemnify the buyer and Kuhlman Electric for certain environmental liabilities, then unknown to the Company, relating to certain operations of Kuhlman Electric that pre-date the Company's 1999 acquisition of Kuhlman Electric. The Company previously settled or obtained dismissals of various lawsuits that were filed against Kuhlman Electric and others, including the Company, on behalf of plaintiffs alleging personal injury relating to alleged environmental contamination at its Crystal Springs, Mississippi plant. The Company filed a lawsuit against Kuhlman Electric and a related entity challenging the validity of the indemnity and the defendants filed counterclaims (the "Indemnity Action") and a related lawsuit. On September 28, 2015, the parties entered into a confidential settlement agreement that, among other things, released and terminated all of BorgWarner's indemnity obligations. Pursuant to the settlement agreement, the parties voluntarily dismissed the Indemnity Action on September 29, 2015 and the related lawsuit was dismissed on October 13, 2015. The Company continues to pursue insurance coverage actions for reimbursement of amounts it spent under the indemnity. The Company may in the future become subject to further legal proceedings.

Asbestos-related Liability

Like many other industrial companies that have historically operated in the United States, the Company, or parties that the Company is obligated to indemnify, continues to be named as one of many defendants in asbestos-related personal injury actions. We believe that the Company's involvement is limited because these claims generally relate to a few types of automotive products that were manufactured over 30 years ago and contained encapsulated asbestos. The nature of the fibers, the encapsulation of the asbestos, and the manner of the products' use all lead the Company to believe that these products were and are highly unlikely to cause harm. Furthermore, the useful life of nearly all of these products expired many years ago.

As of December 31, 2016 and 2015, the Company had approximately 9,400 and 10,100 pending asbestos-related claims, respectively. The decrease in the number of pending claims is primarily a result of the Company's continued efforts to obtain dismissal of dormant claims. It is probable that additional asbestos-related claims will be asserted against the Company in the future. The Company vigorously defends against these claims, and has been successful in obtaining the dismissal of the majority of the claims asserted against it without any payment. The Company likewise expects that the vast majority of the pending asbestos-related claims in which it has been named (or has an obligation to indemnify a party which has been named), and asbestos-related claims that may be asserted in the future, will result in no payment being made by the Company or its insurers. In 2016, of the approximately 2,800 claims resolved, 352 (13%) resulted in payment being made to a claimant by or on behalf of the Company. In 2015, of the approximately 5,300 claims resolved, 349 (7%) resulted in payment being made to a claimant by or on behalf of the Company. The comparatively large number of claims resolved in 2015 reflected the Company's efforts to dismiss large numbers of inactive or otherwise unmeritorious claims in order to be better positioned to evaluate remaining and future claims, while the smaller number of total claims resolved in 2016 reflects in part the outcome of those efforts.

Through December 31, 2016 and 2015, the Company had accrued and paid $477.7 million and $432.7 million in indemnity (including settlement payments) and defense costs in connection with asbestos-related claims, respectively. During 2016 and 2015, the Company had paid indemnity and related defense costs totaling $45.3 million and $54.7 million, respectively. These gross payments are before tax benefits and any insurance receipts. Indemnity and defense costs are incorporated into the Company's operating cash flows and will continue to be in the future.

The Company reviews, on an ongoing basis, its own experience in handling asbestos-related claims and trends affecting asbestos-related claims in the U.S. tort system generally, for the purposes of assessing the value of pending asbestos-related claims and the number and value of those that may be asserted in the future, as well as potential recoveries from the Company's insurers with respect to such claims and defense costs. As of December 31, 2015, the Company also recorded an estimated liability of $108.5 million for asbestos-related claims asserted but not yet resolved and their associated defense costs. The Company further stated that, as of that date, its ultimate liability could not be reasonably estimated in excess of the amounts it had then accrued for claims that had been resolved and the estimated liability for claims asserted but not yet resolved and their associated defense costs. The inability to arrive at a reasonable estimate of the liability for potential asbestos-related claims that may be asserted in the future was based on, among other factors, the volatility in the number and type of asbestos claims that may be asserted, changes in asbestos-related litigation in the United States, the significant number of co-defendants that have filed for bankruptcy, the magnitude and timing of co-defendant bankruptcy trust payments, the inherent uncertainty of future disease incidence and claiming patterns against the Company, and the impact of tort reform legislation that may be enacted at the state or federal levels.

The Company has continued efforts to evaluate these factors and, if possible, arrive at a reasonable estimate of the number and value of potential future asbestos-related claims. In recent years, there have been more observable trends in the Company's claims data that would indicate that claiming patterns against the Company have stabilized. Concurrently, in recent years, the Company has made enhancements to the management and analysis of asbestos-related claims, including specifically: the engagement of new National Coordinating Counsel with significant asbestos litigation experience and a global presence, the engagement of several new local counsel panels; outsourcing administration and claims handling to a third party; implementing various improvements in the processing of asbestos-related claims so as to allow the Company's management to have greater real-time insight into the handling of individual asbestos-related claims; and increasing audits and compliance reviews of counsel handling asbestos-related claims. This process has as of the end of 2016 resulted in improvements in both the quantity and the quality of the information available to the Company's management respecting individual asbestos-related claims and their handling and disposition. This process has also resulted, in the Company's view, in an increased ability to reasonably forecast the aggregate number of potential future asbestos-related claims that may be asserted against the Company.

The Company has further engaged in a sustained effort to obtain the dismissal of thousands of dormant asbestos-related product liability claims, which has resulted in a reduction in the number of its pending claims by 48 percent over the past few years. Legislative and judicial developments affecting the U.S. tort system generally, including medical criteria legislation, procedural reforms, and docket control measures relating to so-called unimpaired claims, have also stabilized certain aspects of the Company's defense efforts respecting asbestos-related claims and allowed the Company greater insight into the number and value of potential future claims in recent years.

As part of its review and assessment of asbestos-related claims, the Company hired a third party consultant in the third quarter of 2016 to further assist in the analysis of potential future asbestos-related claims. The consultant's work utilized the updated data and analysis resulting from the Company's claim review process and included the development of an estimate of the potential value of asbestos-related claims asserted but not yet resolved as well as the number and potential value of asbestos-related claims not yet asserted. The Company determined based on the factors described above, including the analysis and input of the consultant, that its best estimate of the aggregate liability both for asbestos-related claims asserted but not yet resolved and potential asbestos-related claims not yet asserted, including an estimate for defense costs, is $879.3 million as of December 31, 2016. This liability reflects the actuarial central estimate, which is intended to represent an expected value of the most probable outcome. This estimate is not discounted to present value and includes an estimate of liability for potential future claims not yet asserted through December 31, 2059 with a runoff through 2067. The Company currently believes that December 31, 2067 is a reasonable assumption as to the last date on which it is likely to have resolved all asbestos-related claims, based on the nature and useful life of the Company's products and the likelihood of incidence of asbestos-related disease in the U.S. population generally.

In developing the estimate of liability for potential future claims, the third-party consultant projected a potential number of future claims based on the Company's historical claim filings and patterns and compared that to anticipated levels of unique plaintiff asbestos-related claims asserted in the U.S. tort system against all defendants. The consultant also utilized assumptions based on the Company's historical proportion of claims resolved without payment, historical settlement costs for those claims that result in a payment, and historical defense costs. The liabilities were then estimated by multiplying the pending and projected future claim filings by projected payments rates and average settlement amounts and then adding an estimate for defense costs.

The Company's estimate of the indemnity and defense costs for asbestos-related claims asserted but not yet resolved and potential claims not yet asserted is its best estimate of such costs. That estimate is subject to numerous uncertainties. These include future legislative or judicial changes affecting the U.S. tort system, bankruptcy proceedings involving one or more co-defendants, the impact and timing of payments from bankruptcy trusts that presently exist and those that may exist in the future, disease emergence and associated claim filings, the impact of future settlements or significant judgments, changes in the medical condition of claimants, changes in the treatment of asbestos-related disease, and any changes in settlement or defense strategies. The amount recorded at December 31, 2016 for asbestos-related claims is based on currently available information and assumptions that the Company believes are reasonable. Any amounts that are reasonably possible of occurring in excess of amounts recorded are believed to not be significant. The various assumptions utilized in arriving at the Company's estimate the number of future claims that may be asserted, the percentage of claims that may result in a payment, the average cost to resolve such claims, and potential defense costs - may also change over time, and the Company's actual liability for asbestos-related claims asserted but not yet resolved and those not yet asserted may be higher or lower than the estimate provided herein as a result of such changes.

The Company has certain insurance coverage applicable to asbestos-related claims. Prior to June 2004, the settlement and defense costs associated with all asbestos-related claims were paid by the Company's primary layer insurance carriers under a series of interim funding arrangements. In June 2004, primary layer insurance carriers notified the Company of the alleged exhaustion of their policy limits. A declaratory judgment action was filed in January 2004 in the Circuit Court of Cook County, Illinois by Continental Casualty Company and related companies against the Company and certain of its historical general liability insurers. The Cook County court has issued a number of interim rulings and discovery is continuing in this proceeding. The Company is vigorously pursuing the litigation against all carriers that are parties to it, as well as pursuing settlement discussions with its carriers where appropriate. The Company has entered into settlement agreements with certain of its insurance carriers, resolving such insurance carriers' coverage disputes through the carriers' agreement to pay specified amounts to the Company, either immediately or over a specified period.

Through December 31, 2016 and 2015, the Company had received $270.0 million and $263.9 million in cash and notes from insurers, respectively, on account of indemnity and defense costs respecting asbestos-related claims. The Company additionally recorded assets as of December 31, 2015 in the amount of (i) $168.8 million , representing the difference between the $432.7 million in defense and indemnity costs paid by the Company as of December 31, 2015 for asbestos-related claims and the $263.9 million received from insurers prior to that date, and (ii) $108.5 million, representing the then-estimated amount of asbestos-related claims asserted but not yet resolved for which the Company believes it has insurance coverage. In each case, such amounts were expected to be fully recovered.

The Company continues to have additional excess insurance coverage available for potential future asbestos-related claims. In connection with the Company's ongoing review of its asbestos-related claims, the Company also reviewed the amount of its potential insurance coverage for such claims, taking into account the remaining limits of such coverage, the number and amount of claims on our insurance from co-insured parties, ongoing litigation against the Company's insurers described above, potential remaining recoveries from insolvent insurers, the impact of previous insurance settlements, and coverage available from solvent insurers not party to the coverage litigation. Based on that review, the Company estimates as of December 31, 2016 that it has $386.4 million in aggregate insurance coverage available with respect to asbestos-related claims already satisfied by the Company but not yet reimbursed by the insurers, asbestos-related claims asserted but not yet resolved, and asbestos-related claims not yet asserted, in each case together with their associated defense costs. In each case, such amounts are expected to be fully recovered. However, the resolution of the insurance coverage litigation, and the number and amount of claims on our insurance from co-insured parties, may increase or decrease the amount of insurance coverage available to us for asbestos-related claims from the estimates discussed above.

As a result of all of the foregoing estimates of asbestos-related liabilities and related insurance assets, the Company in the fourth quarter of 2016 recorded a charge of $703.6 million before tax, or $440.6 million after tax, resulting from the difference in the total liability from what was previously accrued, consulting fees, less available insurance coverage.

The amounts recorded in the Consolidated Balance Sheets respecting asbestos-related claims are as follows:

(millions of dollars)	December 31, 2016	December 31, 2015
Assets:		
Non-current assets	$ 386.4	$ 277.3
Total insurance assets	$ 386.4	$ 277.3
Liabilities:		
Accounts payable and accrued expenses	$ 51.7	$ 47.7
Other non-current liabilities	827.6	60.8
Total accrued liabilities	$ 879.3	$ 108.5

CRITICAL ACCOUNTING POLICIES

The consolidated financial statements are prepared in conformity with accounting principles generally accepted in the United States ("GAAP"). In preparing these financial statements, management has made its best estimates and judgments of certain amounts included in the financial statements, giving due consideration to materiality. Critical accounting policies are those that are most important to the portrayal of the Company's financial condition and results of operations. Some of these policies require management's most difficult, subjective or complex judgments in the preparation of the financial statements and accompanying notes. Management makes estimates and assumptions about the effect of matters that are inherently uncertain, relating to the reporting of assets, liabilities, revenues, expenses and the disclosure of contingent assets and liabilities. Our most critical accounting policies are discussed below.

Use of estimates The preparation of financial statements in conformity with GAAP requires management to make estimates and assumptions. These estimates and assumptions affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities as of the date of the financial statements and the accompanying notes, as well as, the amounts of revenues and expenses reported during the periods covered by these financial statements and accompanying notes. Actual results could differ from those estimates.

Concentration of risk The Company performs ongoing credit evaluations of its suppliers and customers and, with the exception of certain financing transactions, does not require collateral from its OEM customers. Some automotive parts suppliers continue to experience commodity cost pressures and the effects of industry overcapacity. These factors have increased pressure on the industry's supply base, as suppliers cope with changing commodity costs, lower production volumes and other challenges. The Company receives certain of its raw materials from sole suppliers or a limited number of suppliers. The inability of a supplier to fulfill supply requirements of the Company could affect future operating results.

Revenue recognition The Company recognizes revenue when title and risk of loss pass to the customer, which is usually upon shipment of product. Although the Company may enter into long-term supply agreements with its major customers, each shipment of goods is treated as a separate sale and the prices are not fixed over the life of the agreements.

Cost of sales The Company includes materials, direct labor and manufacturing overhead within cost of sales. Manufacturing overhead is comprised of indirect materials, indirect labor, factory operating costs and other such costs associated with manufacturing products for sale.

Impairment of long-lived assets, including definite-lived intangible assets The Company reviews the carrying value of its long-lived assets, whether held for use or disposal, including other amortizing intangible assets, when events and circumstances warrant such a review under Accounting Standards Codification ("ASC") Topic 360. In assessing long-lived assets for an impairment loss, assets are grouped with other assets and liabilities at the lowest level for which identifiable cash flows are largely independent of the cash flows of other assets and liabilities. In assessing long-lived assets for impairment, management generally considers individual facilities the lowest level for which identifiable cash flows are largely independent. A recoverability review is performed using the undiscounted cash flows if there is a triggering event. If the undiscounted cash flow test for recoverability identifies a possible impairment, management will perform a fair value analysis. Management determines fair value under ASC Topic 820 using the appropriate valuation technique of market, income or cost approach. If the carrying value of a long-lived asset is considered impaired, an impairment charge is recorded for the amount by which the carrying value of the long-lived asset exceeds its fair value.

Management believes that the estimates of future cash flows and fair value assumptions are reasonable; however, changes in assumptions underlying these estimates could affect the valuations. Long-lived assets held for sale are recorded at the lower of their carrying amount or fair value less cost to sell. Significant judgments and estimates used by management when evaluating long-lived assets for impairment include: (i) an assessment as to whether an adverse event or circumstance has triggered the need for an impairment review; (ii) undiscounted future cash flows generated by the asset; and (iii) fair valuation of the asset. Events and conditions that could result in impairment in the value of our long-lived assets include changes in the industries in which we operate, particularly the impact of a downturn in the global economy, as well as competition and advances in technology, adverse changes in the regulatory environment, or other factors leading to reduction in expected long-term sales or profitability.

Goodwill and other indefinite-lived intangible assets During the fourth quarter of each year, the Company qualitatively assesses its goodwill and indefinite-lived intangible assets assigned to each of its reporting units. This qualitative assessment evaluates various events and circumstances, such as macro economic conditions, industry and market conditions, cost factors, relevant events and financial trends, that may impact a reporting unit's fair value. Using this qualitative assessment, the Company determines whether it is more-likely-than-not the reporting unit's fair value exceeds its carrying value. If it is determined that it is not more-likely-than-not the reporting unit's fair value exceeds the carrying value, or upon consideration of other factors, including recent acquisition or divestiture activity, the Company performs a quantitative, "step one," goodwill impairment analysis. In addition, the Company may test goodwill in between annual test dates if an event occurs or circumstances change that could more-likely-than-not reduce the fair value of a reporting unit below its carrying value.

During the fourth quarter of 2016, the Company performed a qualitative analysis on each reporting unit, except for the reporting unit with recent acquisition and divestiture activities, and determined it was more-likely-than-not the fair value exceeded the carrying value of these reporting units. For the reporting unit with acquisition and divestiture activities, the Company performed a quantitative, "step one," goodwill impairment analysis, which requires the Company to make significant assumptions and estimates about the extent and timing of future cash flows, discount rates and growth rates. The basis of this goodwill impairment analysis is the Company's annual budget and long-range plan (“LRP”). The annual budget and LRP includes a five year projection of future cash flows based on actual new products and customer commitments and assumes the last year of the LRP data is a fair indication of the future performance. Because the LRP is estimated over a significant future period of time, those estimates and assumptions are subject to a high degree of uncertainty. Further, the market valuation models and other financial ratios used by the Company require certain assumptions and estimates regarding the applicability of those models to the Company's facts and circumstances.

The Company believes the assumptions and estimates used to determine the estimated fair value are reasonable. Different assumptions could materially affect the estimated fair value. The primary assumptions affecting the Company's December 31, 2016 goodwill quantitative, "step one," impairment review are as follows:

- **Discount rate:** The Company used a 10% weighted average cost of capital (“WACC”) as the discount rate for future cash flows. The WACC is intended to represent a rate of return that would be expected by a market participant.

- **Operating income margin:** The Company used historical and expected operating income margins, which may vary based on the projections of the reporting unit being evaluated.

In addition to the above primary assumptions, the Company notes the following risks to volume and operating income assumptions that could have an impact on the discounted cash flow models:

- The automotive industry is cyclical and the Company's results of operations would be adversely affected by industry downturns.
- The Company is dependent on market segments that use our key products and would be affected by decreasing demand in those segments.
- The Company is subject to risks related to international operations.

Based on the assumptions outlined above, the impairment testing conducted in the fourth quarter of 2016 indicated the Company's goodwill assigned to the reporting unit that was quantitatively assessed was not impaired and contained a fair value substantially higher than the reporting unit's carrying value. Additionally, sensitivity analyses were completed indicating a one percent increase in the discount rate or a one percent decrease in the operating margin assumptions would not result in the carrying value exceeding the fair value of the reporting unit quantitatively assessed.

Refer to Note 6, "Goodwill and Other Intangibles," to the Consolidated Financial Statements in Item 8 of this report for more information regarding goodwill.

Product warranties The Company provides warranties on some, but not all, of its products. The warranty terms are typically from one to three years. Provisions for estimated expenses related to product warranty are made at the time products are sold. These estimates are established using historical information about the nature, frequency and average cost of warranty claim settlements as well as product manufacturing and industry developments and recoveries from third parties. Management actively studies trends of warranty claims and takes action to improve product quality and minimize warranty claims. Management believes that the warranty accrual is appropriate; however, actual claims incurred could differ from the original estimates, requiring adjustments to the accrual. Our warranty provision as a percentage of net sales in 2016 increased is primarily related to the Company's fourth quarter 2015 acquisition of Remy:

	Year Ended December 31,		
(millions of dollars)	2016	2015	2014
Net sales	$ 9,071.0	$ 8,023.2	$ 8,305.1
Warranty provision	$ 62.2	$ 28.6	$ 47.8
Warranty provision as a percentage of net sales	0.7%	0.4%	0.6%

The following table illustrates the sensitivity of a 25 basis point change (as a percentage of net sales) in the assumed warranty trend on the Company's accrued warranty liability:

	December 31,		
(millions of dollars)	2016	2015	2014
25 basis point decrease (income)/expense	$ (22.7)	$ (20.1)	$ (20.8)
25 basis point increase (income)/expense	$ 22.7	$ 20.1	$ 20.8

At December 31, 2016, the total accrued warranty liability was $95.3 million. The accrual is represented as $63.9 million in current liabilities and $31.4 million in non-current liabilities on our Consolidated Balance Sheet.

Refer to Note 7, "Product Warranty," to the Consolidated Financial Statements in Item 8 of this report for more information regarding product warranties.

Other loss accruals and valuation allowances The Company has numerous other loss exposures, such as customer claims, workers' compensation claims, litigation and recoverability of assets. Establishing loss accruals or valuation allowances for these matters requires the use of estimates and judgment in regard to the risk exposure and ultimate realization. The Company estimates losses under the programs using consistent and appropriate methods; however, changes to its assumptions could materially affect the recorded accrued liabilities for loss or asset valuation allowances.

Asbestos The Company and certain of its subsidiaries along with numerous other companies are named as defendants in personal injury lawsuits based on alleged exposure to asbestos-containing materials. With the assistance of third party consultants, the Company estimates the liability and corresponding insurance recovery for pending and future claims not yet asserted through December 31, 2059 with a runoff through 2067 and defense costs. This estimate is based on the Company's historical claim experience and estimates of the number and resolution cost of potential future claims that may be filed based on anticipated levels of unique plaintiff asbestos-related claims in the U.S. tort system against all defendants. This estimate is not discounted to present value. The Company currently believes that December 31, 2067 is a reasonable assumption as to the last date on which it is likely to have resolved all asbestos-related claims, based on the nature and useful life of the Company’s products and the likelihood of incidence of asbestos-related disease in the U.S. population generally. The Company assesses the sufficiency of its estimated liability for pending and future claims and defense costs on an ongoing basis by evaluating actual experience regarding claims filed, settled and dismissed, and amounts paid in settlements. In addition to claims and settlement experience, the Company considers additional quantitative and qualitative factors such as changes in legislation, the legal environment, and the Company's defense strategy.

The Company continues to have additional excess insurance coverage available for potential future asbestos-related claims. In connection with the Company’s ongoing review of its asbestos-related claims, the Company also reviewed the amount of its potential insurance coverage for such claims, taking into account the remaining limits of such coverage, the number and amount of claims on our insurance from co-insured parties, ongoing litigation against the Company’s insurers, potential remaining recoveries from insolvent insurers, the impact of previous insurance settlements, and coverage available from solvent insurers not party to the coverage litigation.

Refer to Note 14, "Contingencies," to the Consolidated Financial Statements in Item 8 of this report for more information regarding management's judgments applied in the recognition and measurement of asbestos-related assets and liabilities.

Environmental contingencies The Company works with outside experts to determine a range of potential liability for environmental sites. The ranges for each individual site are then aggregated into a loss range for the total accrued liability. We record an accrual at the most probable amount within the range unless one cannot be determined; in which case we record the accrual at the low end of the range. Management's estimate of the loss for environmental liability was $6.3 million at December 31, 2016.

Refer to Note 14, "Contingencies," to the Consolidated Financial Statements in Item 8 of this report for more information regarding environmental accrual.

Pension and other postretirement defined benefits The Company provides postretirement defined benefits to a number of its current and former employees. Costs associated with postretirement defined benefits include pension and postretirement health care expenses for employees, retirees and surviving spouses and dependents.

The Company's defined benefit pension and other postretirement plans are accounted for in accordance with ASC Topic 715. The determination of the Company's obligation and expense for its pension and other postretirement employee benefits, such as retiree health care, is dependent on certain assumptions used by actuaries in calculating such amounts. Certain assumptions, including the expected long-term rate of return on plan assets, discount rate, rates of increase in compensation and health care costs trends are described in Note 11, "Retirement Benefit Plans," to the Consolidated Financial Statements in Item 8 of this report. The effects of any modification to those assumptions are either recognized immediately or amortized over future periods in accordance with GAAP.

In accordance with GAAP, actual results that differ from assumptions used are accumulated and generally amortized over future periods. The primary assumptions affecting the Company's accounting for employee benefits under ASC Topics 712 and 715 as of December 31, 2016 are as follows:

- **Expected long-term rate of return on plan assets**: The expected long-term rate of return is used in the calculation of net periodic benefit cost. The required use of the expected long-term rate of return on plan assets may result in recognized returns that are greater or less than the actual returns on those plan assets in any given year. Over time, however, the expected long-term rate of return on plan assets is designed to approximate actual earned long-term returns. The expected long-term rate of return for pension assets has been determined based on various inputs, including historical returns for the different asset classes held by the Company's trusts and its asset allocation, as well as inputs from internal and external sources regarding expected capital market return, inflation and other variables. The Company also considers the impact of active management of the plans' invested assets. In determining its pension expense for the year ended December 31, 2016, the Company used long-term rates of return on plan assets ranging from 1.5% to 6.75% outside of the U.S. and 6.7% in the U.S.

Actual returns on U.S. pension assets were 5.9%, 0.1% and 10.3% for the years ended December 31, 2016, 2015 and 2014, respectively, compared to the expected rate of return assumption of 6.7% for the same years ended.

Actual returns on U.K. pension assets were 22.0%, 1.0% and 16.5% for the years ended December 31, 2016, 2015 and 2014, respectively, compared to the expected rate of return assumption of 6.75% for the same years ended.

Actual returns on German pension assets were 8.6%, 5.1% and 14.5% for the years ended December 31, 2016, 2015 and 2014, respectively, compared to the expected rate of return assumption of 6.6% for the same years ended.

- **Discount rate**: At December 31, 2015, the Company changed the method used to estimate the service and interest components of net periodic benefit cost for pension and other postretirement benefits for plans that utilize a yield curve approach. This change compared to the previous method resulted in different service and interest components of net periodic benefit cost (credit). Historically, the Company estimated these service and interest cost components utilizing a single weighted-average discount rate derived from the yield curve used to measure the benefit obligation at the beginning of the period. The Company elected to utilize a full yield curve approach in the estimation of these components by applying the specific spot rates along the yield curve used in the determination of the benefit obligation to the relevant projected cash flows. The Company made this change to provide a more precise measurement of service and interest costs by improving the correlation between projected benefit cash flows to the spot yield curve rates. The change in the service and interest costs going forward is not expected to be significant. The Company has accounted for this change as a change in accounting estimate.

  The discount rate is used to calculate pension and postretirement employee benefit obligations (“OPEB”). The Company used discount rates ranging from 0.33% to 9.50% to determine its pension and other benefit obligations as of December 31, 2016, including weighted average discount rates of 3.94% in the U.S., 2.25% outside of the U.S., and 3.61% for U.S. other postretirement health care plans. The U.S. discount rate reflects the fact that our U.S. pension plan has been closed for new participants since 1989 (1999 for our U.S. health care plan).

- **Health care cost trend**: For postretirement employee health care plan accounting, the Company reviews external data and Company specific historical trends for health care cost to determine the health care cost trend rate assumptions. In determining the projected benefit obligation for postretirement employee health care plans as of December 31, 2016, the Company used health care cost trend rates of 6.79%, declining to an ultimate trend rate of 5% by the year 2022.

While the Company believes that these assumptions are appropriate, significant differences in actual experience or significant changes in these assumptions may materially affect the Company's pension and other postretirement employee benefit obligations and its future expense.

The following table illustrates the sensitivity to a change in certain assumptions for Company sponsored U.S. and non-U.S. pension plans on its 2017 pre-tax pension expense:

(millions of dollars)	Impact on U.S. 2017 pre-tax pension (expense)/income	Impact on Non-U.S. 2017 pre-tax pension (expense)/income
One percentage point decrease in discount rate	$ — *	$ (8.0)
One percentage point increase in discount rate	$ — *	$ 8.0
One percentage point decrease in expected return on assets	$ (2.2)	$ (3.9)
One percentage point increase in expected return on assets	$ 2.2	$ 3.9

* A one percentage point increase or decrease in the discount rate would have a negligible impact on the Company's U.S. 2017 pre-tax pension expense.

The following table illustrates the sensitivity to a change in the discount rate assumption related to the Company's U.S. OPEB interest expense:

(millions of dollars)	Impact on 2017 pre-tax OPEB interest (expense)/income
One percentage point decrease in discount rate	$ (0.8)
One percentage point increase in discount rate	$ 0.8

The sensitivity to a change in the discount rate assumption related to the Company's total 2017 U.S. OPEB expense is expected to be negligible, as any increase in interest expense will be offset by net actuarial gains.

The following table illustrates the sensitivity to a one-percentage point change in the assumed health care cost trend related to the Company's OPEB obligation and service and interest cost:

	One Percentage Point	
(millions of dollars)	Increase	Decrease
Effect on other postretirement employee benefit obligation	$ 7.9	$ (7.0)
Effect on total service and interest cost components	$ 0.3	$ (0.3)

Refer to Note 11, "Retirement Benefit Plans," to the Consolidated Financial Statements in Item 8 of this report for more information regarding the Company's retirement benefit plans.

Income taxes The Company accounts for income taxes in accordance with ASC Topic 740. Deferred tax assets and liabilities are recognized for the future tax consequences attributable to differences between financial statement carrying amounts of existing assets and liabilities and their respective tax bases and operating loss and tax credit carryforwards. Deferred tax assets and liabilities are measured using enacted tax rates expected to apply to taxable income in the years in which those temporary differences are expected to be recovered or settled.

Management judgment is required in determining the Company's provision for income taxes, deferred tax assets and liabilities and the valuation allowance recorded against the Company's net deferred tax assets. In calculating the provision for income taxes on an interim basis, the Company uses an estimate of the annual effective tax rate based upon the facts and circumstances known at each interim period. In determining the need for a valuation allowance, the historical and projected financial performance of the operation recording the net deferred tax asset is considered along with any other pertinent information. Since future financial results may differ from previous estimates, periodic adjustments to the Company's valuation allowance may be necessary.

The Company is subject to income taxes in the U.S. at the federal and state level and numerous non-U.S. jurisdictions. Significant judgment is required in determining our worldwide provision for income taxes and recording the related assets and liabilities. In the ordinary course of our business, there are many transactions and calculations where the ultimate tax determination is less than certain. Accruals for income tax contingencies are provided for in accordance with the requirements of ASC Topic 605. The Company's U.S. federal and certain state income tax returns and certain non-U.S. income tax returns are currently under various stages of audit by applicable tax authorities. Although the outcome of ongoing tax audits is always uncertain, management believes that it has appropriate support for the positions taken on its tax returns and that its annual tax provisions included amounts sufficient to pay assessments, if any, which may be proposed by the taxing authorities. At December 31, 2016, the Company has recorded a liability for its best estimate of the more-likely-than-not loss on certain of its tax positions, which is included in other non-current liabilities. Nonetheless, the amounts ultimately paid, if any, upon resolution of the issues raised by the taxing authorities may differ materially from the amounts accrued for each year.

Refer to Note 4, "Income Taxes," to the Consolidated Financial Statements in Item 8 of this report for more information regarding income taxes.

New Accounting Pronouncements

In January 2017, the Financial Accounting Standards Board ("FASB") issued Accounting Standards Update ("ASU") No. 2017-04, *"Simplifying the Test for Goodwill Impairment."* It eliminates Step 2 from the goodwill impairment test and an entity should recognize an impairment charge for the amount by which the carrying amount of goodwill exceeds the reporting unit's fair value, not to exceed the carrying amount of goodwill. This guidance is effective for annual and any interim impairment tests in fiscal years beginning after December 15, 2019. The Company does not expect this guidance to have any impact on its Consolidated Financial Statements.

In January 2017, the FASB issued Accounting Standards Update ("ASU") No. 2017-01, *"Clarifying the Definition of a Business."* It revises the definition of a business and provides a framework to evaluate when an input and a substantive process are present in an acquisition to be considered a business. This guidance is effective for annual periods beginning after December 15, 2017. The Company does not expect this guidance to have any impact on its Consolidated Financial Statements.

In November 2016, the FASB issued ASU No. 2016-18, *"Restricted Cash."* It requires that amounts generally described as restricted cash and restricted cash equivalents should be included with cash and cash equivalents when reconciling the beginning-of-period and end-of-period total amounts shown on the statement of cash flows. This guidance is effective for interim and annual reporting periods beginning after December 15, 2017. The Company does not expect this guidance to have a material impact on its Consolidated Financial Statements.

In August 2016, the FASB issued ASU No. 2016-15, *"Classification of Certain Cash Receipts and Cash Payments."* It provides guidance on eight specific cash flow issues with the objective of reducing the existing diversity in practice in how they are classified in the statement of cash flows. This guidance is effective for interim and annual reporting periods beginning after December 15, 2017. Early adoption is permitted, provided that all of the amendments are adopted in the same period. The Company does not expect this guidance to have a material impact on its Consolidated Financial Statements.

In March 2016, the FASB issued ASU No. 2016-09, *"Improvements to Employee Share-Based Payment Accounting."* Under this guidance, the areas of simplification involve several aspects of the accounting for share-based payment transactions, including the income tax consequences, classification of awards as either equity or liabilities, impact on earnings per share and classification on the statement of cash flows. This guidance is effective for interim and annual reporting periods beginning after December 15, 2016 and the Company will adopt this guidance in the first quarter of 2017. Upon the adoption of the guidance, all of the tax effects of share-based payments will be recorded in the income statement. The impact to the Consolidated Financial Statements will be dependent upon the underlying vesting or exercise activity and related future stock prices. The Company is currently evaluating the other impacts this guidance will have on its Consolidated Financial Statements.

In February 2016, the FASB issued ASU No. 2016-02, *"Leases (Topic 842)."* Under this guidance, lessees will be required to recognize a right-of-use asset and a lease liability for all operating leases defined under previous GAAP. This guidance is effective for interim and annual reporting periods beginning after December 15, 2018. The Company is currently evaluating the impact this guidance will have on its Consolidated Financial Statements.

In September 2015, the FASB issued ASU No. 2015-16, *"Simplifying the Accounting for Measurement-Period Adjustments."* Under this guidance, an acquirer is required to recognize adjustments to provisional amounts that are identified during the measurement period in the reporting period in which the adjustment amounts are determined. This guidance is effective for interim and annual reporting periods beginning after December 15, 2015. The Company adopted this guidance in the first quarter of 2016 and recorded fair value adjustments related to the Remy acquisition based on new information obtained during the measurement period primarily related to warranty, inventory, and deferred taxes. These adjustments have resulted in a decrease in goodwill of $12.1 million from the Company's initial estimate recorded in 2016.

In August 2015, the FASB issued ASU No. 2015-15, *"Presentation and Subsequent Measurement of Debt Issuance Costs Associated with Line-of-Credit Arrangements."* Under this guidance, debt issuance costs associated with line-of-credit arrangements would be deferred as an asset and amortized ratably over the term, regardless of whether there are any outstanding borrowings on the line-of-credit arrangement. This guidance is effective for interim and annual reporting periods beginning after December 15, 2015 and the Company adopted this guidance in the first quarter of 2016 with no impact on the Company's Consolidated Financial Statements.

In July 2015, the FASB issued ASU No. 2015-11, *"Simplifying the Measurement of Inventory."* Under this guidance, inventory should be measured at the lower of cost and net realizable value. Subsequent measurement is unchanged for inventory measured using LIFO or the retail inventory method. This guidance is effective for interim and annual reporting periods beginning after December 15, 2016. The Company does not expect this guidance to have a material impact on its Consolidated Financial Statements.

In May 2015, the FASB issued ASU No. 2015-07, *"Disclosures for Investments in Certain Entities That Calculate Net Asset Value per Share (or Its Equivalent)."* Under this guidance, investments measured at net asset value, as a practical expedient for fair value, are excluded from the fair value hierarchy. This guidance is effective for interim and annual reporting periods beginning after December 15, 2015 and the Company adopted this guidance in the first quarter of 2016. The pension asset disclosure has been updated retrospectively to reflect this guidance and there is no impact on the Company's Consolidated Financial Statements.

In May 2014, the FASB amended the Accounting Standards Codification to add Topic 606, *"Revenue from Contracts with Customers,"* outlining a single comprehensive model for entities to use in accounting for revenue arising from contracts with customers and superseding most current revenue recognition guidance. This guidance is effective for interim and annual reporting periods beginning after December 15, 2017. The Company anticipates changes to the revenue recognition of pre-production activities such as customer owned tooling and engineering design & development recoveries, including the potential recording of these items as revenue. Further, the Company is currently analyzing the impact of the new guidance on its contracts and customer arrangements that include various pricing structures and cancellation clauses, which could impact the timing of revenue recognition. The Company expects to adopt this guidance effective January 1, 2018 utilizing the Modified Retrospective approach and is currently evaluating the impact that the adoption of this guidance will have on its consolidated financial statements.

QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

The Company's primary market risks include fluctuations in interest rates and foreign currency exchange rates. We are also affected by changes in the prices of commodities used or consumed in our manufacturing operations. Some of our commodity purchase price risk is covered by supply agreements with customers and suppliers. Other commodity purchase price risk is addressed by hedging strategies, which include forward contracts. The Company enters into derivative instruments only with high credit quality counterparties and diversifies its positions across such counterparties in order to reduce its exposure to credit losses. We do not engage in any derivative instruments for purposes other than hedging specific operating risks.

We have established policies and procedures to manage sensitivity to interest rate, foreign currency exchange rate and commodity purchase price risk, which include monitoring the level of exposure to each market risk. For quantitative disclosures about market risk, refer to Note 10, "Financial Instruments," to the Consolidated Financial Statements in Item 8 of this report for information with respect to interest rate risk and foreign currency exchange rate risk and commodity purchase price risk.

Interest Rate Risk

Interest rate risk is the risk that we will incur economic losses due to adverse changes in interest rates. The Company manages its interest rate risk by balancing its exposure to fixed and variable rates while attempting to optimize its interest costs. The Company selectively uses interest rate swaps to reduce market value risk associated with changes in interest rates (fair value hedges). At December 31, 2016, the amount of debt with fixed interest rates was 98.5% of total debt. Our earnings exposure related to adverse movements in interest rates is primarily derived from outstanding floating rate debt instruments that are indexed to floating money market rates. A 10% increase or decrease in the average cost of our variable rate debt would result in a change in pre-tax interest expense of approximately $0.1 million, $2.1 million and $0.2 million in the years ended December 31, 2016, 2015 and 2014, respectively.

Foreign Currency Exchange Rate Risk

Foreign currency exchange rate risk is the risk that we will incur economic losses due to adverse changes in foreign currency exchange rates. Currently, our most significant currency exposures relate to the British Pound, the Chinese Renminbi, the Euro, the Hungarian Forint, the Japanese Yen, the Mexican Peso, the Swedish Krona and the South Korean Won. We mitigate our foreign currency exchange rate risk by establishing local production facilities and related supply chain participants in the markets we serve, by invoicing customers in the same currency as the source of the products and by funding some of our investments in foreign markets through local currency loans. Such non-U.S. Dollar debt was $82.1 million and $144.6 million as of December 31, 2016 and 2015, respectively. We also monitor our foreign currency exposure in each country and implement strategies to respond to changing economic and political environments. The depreciation of the British Pound post the United Kingdom's 2016 vote to leave the European Union is not expected to have a significant impact on the Company since net sales from the United Kingdom represents less than 2% of the Company's net sales in 2016. In addition, the Company periodically enters into forward currency contracts in order to reduce exposure to exchange rate risk related to transactions denominated in currencies other than the functional currency. As of December 31, 2016 and 2015, the Company recorded a short-term deferred gain related to foreign currency derivatives of $6.7 million and $2.4 million, respectively, and short-term deferred loss related to foreign currency derivatives of $1.1 million and $2.5 million, respectively.

The foreign currency translation adjustment losses of $109.1 million, $260.5 million and $(341.8) million for the years ended December 31, 2016, 2015 and 2014, respectively, contained within our Consolidated Statements of Comprehensive Income represent the foreign currency translational impacts of converting our non-U.S. dollar subsidiaries financial statements to the Company’s reporting currency (U.S. Dollar). The 2016 foreign currency translation adjustment loss was primarily due to the impact of a strengthening

U.S. dollar against the Euro and Chinese Renminbi, which increased other comprehensive loss by approximately $60 million and $45 million, respectively. The 2015 foreign currency translation adjustment loss was primarily due to the impact of a strengthening U.S. dollar, which increased approximately 10% in relation to the Euro between December 31, 2014 and 2015. This 10% change in the Euro increased other comprehensive loss by approximately $220 million. The 2014 foreign currency translation adjustment loss was primarily due to the impact of the strengthening U.S. dollar, which increased approximately 12% in relation to the Euro between December 31, 2013 and 2014. This 12% change in the Euro increased other comprehensive loss by approximately $243 million.

Commodity Price Risk

Commodity price risk is the possibility that we will incur economic losses due to adverse changes in the cost of raw materials used in the production of our products. Commodity forward and option contracts are executed to offset our exposure to potential change in prices mainly for various non-ferrous metals and natural gas consumption used in the manufacturing of vehicle components. As of December 31, 2016 and 2015, the Company had forward and option commodity contracts with a total notional value of $1.0 million and $38.8 million, respectively. As of December 31, 2016 and 2015, the Company recorded a short-term deferred loss related to commodity derivatives of $0.1 million and $2.1 million, respectively.

Disclosure Regarding Forward-Looking Statements

The matters discussed in this Item 7 include forward looking statements. See "Forward Looking Statements" at the beginning of this Annual Report on Form 10-K.

Item 7A. Quantitative and Qualitative Disclosures About Market Risk

For quantitative and qualitative information regarding market risk, please refer to the discussion in Item 7 of this report under the caption "Quantitative and Qualitative Disclosures about Market Risk."

For information regarding interest rate risk, foreign currency exchange risk and commodity price risk, refer to the Financial Instruments footnote. For information regarding the levels of indebtedness subject to interest rate fluctuation, refer to the Notes Payable and Long-Term Debt footnote. For information regarding the level of business outside the United States, which is subject to foreign currency exchange rate market risk, refer to the Reporting Segments and Related Information footnote.

Item 8. Financial Statements and Supplementary Data

Report of Independent Registered Public Accounting Firm

To the Board of Directors and Stockholders of BorgWarner Inc.

In our opinion, the consolidated financial statements listed in the accompanying index present fairly, in all material respects, the financial position of BorgWarner Inc. and its subsidiaries at December 31, 2016 and December 31, 2015, and the results of their operations and their cash flows for each of the three years in the period ended December 31, 2016 in conformity with accounting principles generally accepted in the United States of America. Also in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2016, based on criteria established in Internal Control - Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). The Company's management is responsible for these financial statements, for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting, included in Management's Report on Internal Control over Financial Reporting appearing under Item 9A. Our responsibility is to express opinions on these financial statements and on the Company's internal control over financial reporting based on our integrated audits. We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the financial statements are free of material misstatement and whether effective internal control over financial reporting was maintained in all material respects. Our audits of the financial statements included examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements, assessing the accounting principles used and significant estimates made by management, and evaluating the overall financial statement presentation. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audits also included performing such other procedures as we considered necessary in the circumstances. We believe that our audits provide a reasonable basis for our opinions.

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 (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; (ii) 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 (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 financial statements.

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

/s/ PricewaterhouseCoopers LLP

PricewaterhouseCoopers LLP
Detroit, Michigan
February 9, 2017

BORGWARNER INC. AND CONSOLIDATED SUBSIDIARIES
CONSOLIDATED BALANCE SHEETS

(in millions, except share and per share amounts)	December 31, 2016	December 31, 2015
ASSETS		
Cash	$ 443.7	$ 577.7
Receivables, net	1,689.3	1,665.0
Inventories, net	641.2	723.6
Prepayments and other current assets	137.4	168.9
Total current assets	2,911.6	3,135.2
Property, plant and equipment, net	2,501.8	2,448.1
Investments and other long-term receivables	502.2	460.9
Goodwill	1,702.2	1,757.7
Other intangible assets, net	463.5	543.8
Other non-current assets	753.4	480.0
Total assets	$ 8,834.7	$ 8,825.7
LIABILITIES AND EQUITY		
Notes payable and other short-term debt	$ 175.9	$ 441.4
Accounts payable and accrued expenses	1,847.3	1,866.4
Income taxes payable	68.6	49.4
Total current liabilities	2,091.8	2,357.2
Long-term debt	2,043.6	2,108.9
Other non-current liabilities:		
Asbestos-related liabilities	827.6	60.8
Retirement-related liabilities	294.1	312.9
Other	275.7	354.4
Total other non-current liabilities	1,397.4	728.1
Commitments and contingencies		
Capital stock:		
Preferred stock, $0.01 par value; authorized shares: 5,000,000; none issued and outstanding	—	—
Common stock, $0.01 par value; authorized shares: 390,000,000; issued shares: (2016 - 246,387,057; 2015 - 246,387,057); outstanding shares: (2016 - 212,262,965; 2015 - 219,324,821)	2.5	2.5
Non-voting common stock, $0.01 par value; authorized shares: 25,000,000; none issued and outstanding	—	—
Capital in excess of par value	1,104.3	1,109.7
Retained earnings	4,215.2	4,210.1
Accumulated other comprehensive loss	(722.1)	(610.2)
Common stock held in treasury, at cost: (2016 - 34,124,092 shares; 2015 - 27,062,236 shares)	(1,381.6)	(1,158.4)
Total BorgWarner Inc. stockholders' equity	3,218.3	3,553.7
Noncontrolling interest	83.6	77.8
Total equity	3,301.9	3,631.5
Total liabilities and equity	$ 8,834.7	$ 8,825.7

See Accompanying Notes to Consolidated Financial Statements.

BORGWARNER INC. AND CONSOLIDATED SUBSIDIARIES
CONSOLIDATED STATEMENTS OF OPERATIONS

(in millions, except share and per share amounts)	Year Ended December 31, 2016	2015	2014
Net sales	$ 9,071.0	$ 8,023.2	$ 8,305.1
Cost of sales	7,137.9	6,320.1	6,548.7
Gross profit	1,933.1	1,703.1	1,756.4
Selling, general and administrative expenses	817.5	662.0	698.9
Other expense, net	889.7	101.4	93.8
Operating income	225.9	939.7	963.7
Equity in affiliates' earnings, net of tax	(42.9)	(40.0)	(47.3)
Interest income	(6.3)	(7.5)	(5.5)
Interest expense and finance charges	84.6	60.4	36.4
Earnings before income taxes and noncontrolling interest	190.5	926.8	980.1
Provision for income taxes	30.3	280.4	292.6
Net earnings	160.2	646.4	687.5
Net earnings attributable to the noncontrolling interest, net of tax	41.7	36.7	31.7
Net earnings attributable to BorgWarner Inc.	$ 118.5	$ 609.7	$ 655.8
Earnings per share — basic	$ 0.55	$ 2.72	$ 2.89
Earnings per share — diluted	$ 0.55	$ 2.70	$ 2.86
Weighted average shares outstanding (thousands):			
Basic	214,374	224,414	227,150
Diluted	215,328	225,648	228,924
Dividends declared per share	$ 0.53	$ 0.52	$ 0.51

See Accompanying Notes to Consolidated Financial Statements.

BORGWARNER INC. AND CONSOLIDATED SUBSIDIARIES
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME

	Year Ended December 31,		
(in millions of dollars)	2016	2015	2014
Net earnings attributable to BorgWarner Inc.	$ 118.5	$ 609.7	$ 655.8
Other comprehensive (loss) income			
Foreign currency translation adjustments	(109.1)	(260.5)	(341.8)
Hedge instruments*	7.0	(3.7)	17.7
Defined benefit postretirement plans*	(8.2)	37.4	(45.8)
Other*	(1.6)	0.2	0.3
Total other comprehensive (loss) income attributable to BorgWarner Inc.	(111.9)	(226.6)	(369.6)
Comprehensive income attributable to BorgWarner Inc.	6.6	383.1	286.2
Comprehensive loss attributable to the noncontrolling interest	(5.1)	(5.1)	(3.9)
Comprehensive income	$ 1.5	$ 378.0	$ 282.3

* Net of income taxes.

See Accompanying Notes to Consolidated Financial Statements.

BORGWARNER INC. AND CONSOLIDATED SUBSIDIARIES
CONSOLIDATED STATEMENTS OF CASH FLOWS

(in millions of dollars)	Year Ended December 31, 2016	2015	2014
OPERATING			
Net earnings	$ 160.2	$ 646.4	$ 687.5
Adjustments to reconcile net earnings to net cash flows from operations:			
Non-cash charges (credits) to operations:			
Asbestos-related charge	703.6	—	—
Loss on divestiture	127.1	—	—
Depreciation and amortization	391.4	320.2	330.4
Restructuring expense, net of cash paid	12.0	36.3	45.8
Gain on previously held equity interest	—	(10.8)	—
Pension settlement loss	—	25.7	3.1
Stock-based compensation expense	43.6	40.2	32.1
Deferred income tax (benefit) provision	(268.9)	13.3	42.3
Equity in affiliates' earnings, net of dividends received, and other	(17.0)	(21.9)	(5.2)
Net earnings adjusted for non-cash charges to operations	1,152.0	1,049.4	1,136.0
Changes in assets and liabilities:			
Receivables	(137.5)	(81.8)	(248.7)
Inventories	(36.5)	(52.9)	(39.7)
Prepayments and other current assets	8.8	(9.4)	12.7
Accounts payable and accrued expenses	134.9	23.1	129.1
Income taxes payable	(14.2)	34.6	(28.7)
Other assets and liabilities	(71.8)	(95.1)	(158.9)
Net cash provided by operating activities	1,035.7	867.9	801.8
INVESTING			
Capital expenditures, including tooling outlays	(500.6)	(577.3)	(563.0)
Proceeds from sale of businesses, net of cash divested	85.8	—	—
Proceeds from asset disposals and other	10.6	4.7	8.4
Payments for businesses acquired, including restricted cash, net of cash acquired	—	(1,199.6)	(110.5)
Proceeds from settlement of net investment hedges	—	13.1	—
Net cash used in investing activities	(404.2)	(1,759.1)	(665.1)
FINANCING			
Net (decrease) increase in notes payable	(129.1)	(316.7)	493.2
Additions to long-term debt, net of debt issuance costs	4.6	1,569.2	130.5
Repayments of long-term debt, including current portion	(193.6)	(29.8)	(431.6)
Repayments of accounts receivable securitization facility	—	—	(110.0)
Proceeds from interest rate swap termination	8.9	—	—
Payments for purchase of treasury stock	(288.0)	(349.8)	(139.9)
Proceeds from (payments for) stock-based compensation items	6.7	3.7	(6.7)
Dividends paid to BorgWarner stockholders	(113.4)	(116.7)	(116.1)
Dividends paid to noncontrolling stockholders	(29.9)	(23.3)	(21.1)
Net cash (used in) provided by financing activities	(733.8)	736.6	(201.7)
Effect of exchange rate changes on cash	(31.7)	(65.5)	(76.7)
Net decrease in cash	(134.0)	(220.1)	(141.7)
Cash at beginning of year	577.7	797.8	939.5
Cash at end of year	$ 443.7	$ 577.7	$ 797.8
SUPPLEMENTAL CASH FLOW INFORMATION			
Cash paid during the year for:			
Interest	$ 100.3	$ 70.2	$ 49.5
Income taxes, net of refunds	$ 300.5	$ 183.8	$ 229.7
Non-cash investing transactions			
Liabilities assumed from business acquired	$ —	$ 31.1	$ 3.2
Non-cash financing transactions			
Debt assumed from business acquired	$ —	$ 10.9	$ 40.3

See Accompanying Notes to Consolidated Financial Statements.

BORGWARNER INC. AND CONSOLIDATED SUBSIDIARIES
CONSOLIDATED STATEMENTS OF EQUITY

	Number of shares		BorgWarner Inc. stockholder's equity					
(in millions of dollars, except share data)	Issued common stock	Common stock held in treasury	Issued common stock	Capital in excess of par value	Treasury stock	Retained earnings	Accumulated other comprehensive income (loss)	Noncontrolling interests
Balance, January 1, 2014	246,421,893	(18,489,037)	$ 2.5	$ 1,121.9	$ (727.2)	$ 3,177.4	$ (14.0)	$ 71.8
Dividends declared	—	—	—	—	—	(116.1)	—	(24.9)
Stock incentive plans	—	283,090	—	5.4	11.5	—	—	—
Net issuance for executive stock plan	—	336,883	—	(13.3)	24.7	—	—	—
Net issuance of restricted stock	(31,273)	326,074	—	(1.6)	(1.3)	—	—	—
Purchase of treasury stock	—	(2,417,547)	—	—	(139.9)	—	—	—
Net earnings	—	—	—	—	—	655.8	—	31.7
Other comprehensive loss	—	—	—	—	—	—	(369.6)	(3.9)
Balance, December 31, 2014	246,390,620	(19,960,537)	$ 2.5	$ 1,112.4	$ (832.2)	$ 3,717.1	$ (383.6)	$ 74.7
Dividends declared	—	—	—	—	—	(116.7)	—	(28.5)
Stock incentive plans	—	439,653	—	(1.8)	18.6	—	—	—
Net issuance for executive stock plan	—	—	—	2.4	—	—	—	—
Net issuance of restricted stock	(3,563)	532,951	—	(3.3)	18.2	—	—	—
Purchase of treasury stock	—	(8,074,303)	—	—	(363.0)	—	—	—
Net earnings	—	—	—	—	—	609.7	—	36.7
Other comprehensive loss	—	—	—	—	—	—	(226.6)	(5.1)
Balance, December 31, 2015	246,387,057	(27,062,236)	$ 2.5	$ 1,109.7	$ (1,158.4)	$ 4,210.1	$ (610.2)	$ 77.8
Dividends declared	—	—	—	—	—	(113.4)	—	(26.0)
Stock incentive plans	—	793,230	—	(19.4)	32.4	—	—	—
Net issuance for executive stock plan	—	—	—	12.8	—	—	—	—
Net issuance of restricted stock	—	414,464	—	1.2	19.2	—	—	—
Purchase of treasury stock	—	(8,269,550)	—	—	(274.8)	—	—	—
Business divestiture	—	—	—	—	—	—	—	(4.8)
Net earnings	—	—	—	—	—	118.5	—	41.7
Other comprehensive loss	—	—	—	—	—	—	(111.9)	(5.1)
Balance, December 31, 2016	246,387,057	(34,124,092)	$ 2.5	$ 1,104.3	$ (1,381.6)	$ 4,215.2	$ (722.1)	$ 83.6

See Accompanying Notes to Consolidated Financial Statements.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

INTRODUCTION

BorgWarner Inc. and Consolidated Subsidiaries (the “Company”) is a global product leader in clean and efficient technology solutions for combustion, hybrid and electric vehicles. Our products help improve vehicle performance, propulsion efficiency, stability and air quality. These products are manufactured and sold worldwide, primarily to original equipment manufacturers (“OEMs”) of light vehicles (passenger cars, sport-utility vehicles ("SUVs"), vans and light trucks). The Company's products are also sold to other OEMs of commercial vehicles (medium-duty trucks, heavy-duty trucks and buses) and off-highway vehicles (agricultural and construction machinery and marine applications). We also manufacture and sell our products to certain Tier One vehicle systems suppliers and into the aftermarket for light, commercial and off-highway vehicles. The Company operates manufacturing facilities serving customers in Europe, the Americas and Asia and is an original equipment supplier to every major automotive OEM in the world. The Company's products fall into two reporting segments: Engine and Drivetrain.

NOTE 1 SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

The following paragraphs briefly describe the Company's significant accounting policies.

Basis of presentation In the first quarter of 2016, the Company retrospectively adopted Accounting Standard Update ("ASU") No. 2015-03, "*Simplifying the Presentation of Debt Issuance Costs,*" which resulted in the reduction of assets and liabilities by approximately $16 million in the Company's Condensed Consolidated Balance Sheet as of December 31, 2015. Certain prior period amounts have been reclassified to conform to current period presentation.

Use of estimates The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America (“GAAP”) requires management to make estimates and assumptions. These estimates and assumptions affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities as of the date of the financial statements and the accompanying notes, as well as, the amounts of revenues and expenses reported during the periods covered by these financial statements and accompanying notes. Actual results could differ from those estimates.

Principles of consolidation The Consolidated Financial Statements include all majority-owned subsidiaries with a controlling financial interest. All inter-company accounts and transactions have been eliminated in consolidation. Investments in 20% to 50% owned affiliates are accounted for under the equity method when the Company does not have a controlling financial interest.

Revenue recognition The Company recognizes revenue when title and risk of loss pass to the customer, which is usually upon shipment of product. Although the Company may enter into long-term supply agreements with its major customers, each shipment of goods is treated as a separate sale and the prices are not fixed over the life of the agreements.

Cost of sales The Company includes materials, direct labor and manufacturing overhead within cost of sales. Manufacturing overhead is comprised of indirect materials, indirect labor, factory operating costs and other such costs associated with manufacturing products for sale.

Cash Cash is valued at fair market value. It is the Company's policy to classify all highly liquid investments with original maturities of three months or less as cash. Cash is maintained with several financial institutions. Deposits held with banks may exceed the amount of insurance provided on such deposits. Generally, these deposits may be redeemed upon demand and are maintained with financial institutions of reputable credit and therefore bear minimal risk.

Restricted cash Restricted cash as of December 31, 2015 related to amounts deposited with the paying agent to settle shares of Remy International Inc. ("Remy") stock in connection with the acquisition of Remy on November 10, 2015, that was not paid to the shareholders until the first half of 2016.

Receivables, net The Company factors certain receivables through third party financial institutions without recourse. These are treated as a sale. The transactions are accounted for as a reduction in accounts receivable as the agreements transfer effective control over and risk related to the receivables to the buyers. The Company does not service any domestic accounts after the factoring has occurred. The Company does not have any servicing assets or liabilities.

See the Balance Sheet Information footnote to the Consolidated Financial Statements for more information on receivables, net.

Inventories, net Inventories are valued at the lower of cost or market. Cost of certain U.S. inventories is determined using the last-in, first-out (“LIFO”) method, while other U.S. and foreign operations use the first-in, first-out (“FIFO”) or average-cost methods. Inventory held by U.S. operations using the LIFO method was $131.4 million and $122.2 million at December 31, 2016 and 2015, respectively. Such inventories, if valued at current cost instead of LIFO, would have been greater by $15.2 million and $14.2 million at December 31, 2016 and 2015, respectively.

See the Balance Sheet Information footnote to the Consolidated Financial Statements for more information on inventories, net.

Pre-production costs related to long-term supply arrangements Engineering, research and development and other design and development costs for products sold on long-term supply arrangements are expensed as incurred unless the Company has a contractual guarantee for reimbursement from the customer. Costs for molds, dies and other tools used to make products sold on long-term supply arrangements for which the Company either has title to the assets or has the non-cancelable right to use the assets during the term of the supply arrangement are capitalized in property, plant and equipment and amortized to cost of sales over the shorter of the term of the arrangement or over the estimated useful lives of the assets, typically three to five years. Costs for molds, dies and other tools used to make products sold on long-term supply arrangements for which the Company has a contractual guarantee for lump sum reimbursement from the customer are capitalized in prepayments and other current assets.

Property, plant and equipment, net Property, plant and equipment is valued at cost less accumulated depreciation. Expenditures for maintenance, repairs and renewals of relatively minor items are generally charged to expense as incurred. Renewals of significant items are capitalized. Depreciation is generally computed on a straight-line basis over the estimated useful lives of the assets. Useful lives for buildings range from 15 to 40 years and useful lives for machinery and equipment range from three to 12 years. For income tax purposes, accelerated methods of depreciation are generally used.

See the Balance Sheet Information footnote to the Consolidated Financial Statements for more information on property, plant and equipment, net.

Impairment of long-lived assets, including definite-lived intangible assets The Company reviews the carrying value of its long-lived assets, whether held for use or disposal, including other amortizing intangible assets, when events and circumstances warrant such a review under Accounting Standards Codification ("ASC") Topic 360. In assessing long-lived assets for an impairment loss, assets are grouped with other assets and liabilities at the lowest level for which identifiable cash flows are largely independent of the cash flows of other assets and liabilities. In assessing long-lived assets for impairment, management generally considers individual facilities the lowest level for which identifiable cash flows are largely independent. A recoverability review is performed using the undiscounted cash flows if there is a triggering event. If the undiscounted cash flow test for recoverability identifies a possible impairment, management will perform a fair value analysis. Management determines fair value under ASC Topic 820 using the appropriate valuation technique of market, income or cost approach. If the carrying value of a long-lived asset is considered impaired, an impairment charge is recorded for the amount by which the carrying value of the long-lived asset exceeds its fair value.

Management believes that the estimates of future cash flows and fair value assumptions are reasonable; however, changes in assumptions underlying these estimates could affect the valuations. Long-lived assets held for sale are recorded at the lower of their carrying amount or fair value less cost to sell. Significant judgments and estimates used by management when evaluating long-lived assets for impairment include: (i) an assessment as to whether an adverse event or circumstance has triggered the need for an impairment review; (ii) undiscounted future cash flows generated by the asset; and (iii) fair valuation of the asset.

Goodwill and other indefinite-lived intangible assets During the fourth quarter of each year, the Company qualitatively assesses its goodwill and indefinite-lived intangible assets assigned to each of its reporting units. This qualitative assessment evaluates various events and circumstances, such as macro economic conditions, industry and market conditions, cost factors, relevant events and financial trends, that may impact a reporting unit's fair value. Using this qualitative assessment, the Company determines whether it is more-likely-than-not the reporting unit's fair value exceeds its carrying value. If it is determined that it is not more-likely-than-not the reporting unit's fair value exceeds the carrying value, or upon consideration of other factors, including recent acquisition or divestiture activity, the Company performs a quantitative, "step one," goodwill impairment analysis. In addition, the Company may test goodwill in between annual test dates if an event occurs or circumstances change that could more-likely-than-not reduce the fair value of a reporting unit below its carrying value.

See the Goodwill and Other Intangibles footnote to the Consolidated Financial Statements for more information on goodwill and other indefinite-lived intangible assets.

Product warranties The Company provides warranties on some, but not all, of its products. The warranty terms are typically from one to three years. Provisions for estimated expenses related to product warranty are made at the time products are sold. These estimates are established using historical information about the nature, frequency and average cost of warranty claim settlements as well as product manufacturing and industry developments and recoveries from third parties. Management actively studies trends of warranty claims and takes action to improve product quality and minimize warranty claims. Management believes that the warranty accrual is appropriate; however, actual claims incurred could differ from the original estimates, requiring adjustments to the accrual. The product warranty accrual is allocated to current and non-current liabilities in the Consolidated Balance Sheets.

See the Product Warranty footnote to the Consolidated Financial Statements for more information on product warranties.

Other loss accruals and valuation allowances The Company has numerous other loss exposures, such as customer claims, workers' compensation claims, litigation and recoverability of assets. Establishing loss accruals or valuation allowances for these matters requires the use of estimates and judgment in regard to the risk exposure and ultimate realization. The Company estimates losses under the programs using consistent and appropriate methods, however, changes to its assumptions could materially affect the recorded accrued liabilities for loss or asset valuation allowances.

Asbestos The Company and certain of its subsidiaries along with numerous other companies are named as defendants in personal injury lawsuits based on alleged exposure to asbestos-containing materials. With the assistance of third party consultants, the Company estimates the liability and corresponding insurance recovery for pending and future claims not yet asserted through December 31, 2059 with a runoff through 2067 and defense costs. This estimate is based on the Company's historical claim experience and estimates of the number and resolution cost of potential future claims that may be filed based on anticipated levels of unique plaintiff asbestos-related claims in the U.S. tort system against all defendants. This estimate is not discounted to present value. The Company currently believes that December 31, 2067 is a reasonable assumption as to the last date on which it is likely to have resolved all asbestos-related claims, based on the nature and useful life of the Company’s products and the likelihood of incidence of asbestos-related disease in the U.S. population generally. The Company assesses the sufficiency of its estimated liability for pending and future claims and defense costs on an ongoing basis by evaluating actual experience regarding claims filed, settled and dismissed, and amounts paid in settlements. In addition to claims and settlement experience, the Company considers additional quantitative and qualitative factors such as changes in legislation, the legal environment, and the Company's defense strategy. The Company continues to have additional excess insurance coverage available for potential future asbestos-related claims. In connection with the Company’s ongoing review of its asbestos-related claims, the Company also reviewed the amount of its potential insurance coverage for such claims, taking into account the remaining limits of such coverage, the number and amount of claims on our insurance from co-insured parties, ongoing litigation against the Company’s insurers, potential remaining recoveries from insolvent insurers, the impact of previous insurance settlements, and coverage available from solvent insurers not party to the coverage litigation.

See the Contingencies footnote to the Consolidated Financial Statements for more information regarding management's judgments applied in the recognition and measurement of asbestos-related assets and liabilities.

Environmental contingencies The Company accounts for environmental costs in accordance with ASC Topic 450. Costs related to environmental assessments and remediation efforts at operating facilities are accrued when it is probable that a liability has been incurred and the amount of that liability can be reasonably estimated. Estimated costs are recorded at undiscounted amounts, based on experience and assessments and are regularly evaluated. The liabilities are recorded in accounts payable and accrued expenses and other non-current liabilities in the Company's Consolidated Balance Sheets.

See the Contingencies footnote to the Consolidated Financial Statements for more information regarding environmental contingencies.

Derivative financial instruments The Company recognizes that certain normal business transactions generate risk. Examples of risks include exposure to exchange rate risk related to transactions denominated in currencies other than the functional currency, changes in commodity costs and interest rates. It is the objective and responsibility of the Company to assess the impact of these transaction risks and offer protection from selected risks through various methods, including financial derivatives. Virtually all derivative instruments held by the Company are designated as hedges, have high correlation with the underlying exposure and are highly effective in offsetting underlying price movements. Accordingly, gains and losses from changes in qualifying hedge fair values are matched with the underlying transactions. All hedge instruments are carried at their fair value based on quoted market prices for contracts with similar maturities. The Company does not engage in any derivative transactions for purposes other than hedging specific risks.

See the Financial Instruments footnote to the Consolidated Financial Statements for more information on derivative financial instruments.

Foreign currency The financial statements of foreign subsidiaries are translated to U.S. dollars using the period-end exchange rate for assets and liabilities and an average exchange rate for each period for revenues, expenses and capital expenditures. The local currency is the functional currency for substantially all of the Company's foreign subsidiaries. Translation adjustments for foreign subsidiaries are recorded as a component of accumulated other comprehensive income (loss) in equity. The Company recognizes transaction gains and losses arising from fluctuations in currency exchange rates on transactions denominated in currencies other than the functional currency in earnings as incurred.

See the Accumulated Other Comprehensive Loss footnote to the Consolidated Financial Statements for more information on accumulated other comprehensive loss.

Pensions and other postretirement employee defined benefits The Company's defined benefit pension and other postretirement employee benefit plans are accounted for in accordance with ASC Topic 715. Disability, early retirement and other postretirement employee benefits are accounted for in accordance with ASC Topic 712.

Pensions and other postretirement employee benefit costs and related liabilities and assets are dependent upon assumptions used in calculating such amounts. These assumptions include discount rates, expected returns on plan assets, health care cost trends, compensation and other factors. In accordance with GAAP, actual results that differ from the assumptions used are accumulated and amortized over future periods, and accordingly, generally affect recognized expense in future periods.

See the Retirement Benefit Plans footnote to the Consolidated Financial Statements for more information regarding the Company's pension and other postretirement employee defined benefit plans.

Income taxes In accordance with ASC Topic 740, the Company's income tax expense is calculated based on expected income and statutory tax rates in the various jurisdictions in which the Company operates and requires the use of management's estimates and judgments.

See the Income Taxes footnote to the Consolidated Financial Statements for more information regarding income taxes.

New Accounting Pronouncements

In January 2017, the Financial Accounting Standards Board ("FASB") issued Accounting Standards Update ("ASU") No. 2017-04, *"Simplifying the Test for Goodwill Impairment."* It eliminates Step 2 from the goodwill impairment test and an entity should recognize an impairment charge for the amount by which the carrying amount of goodwill exceeds the reporting unit's fair value, not to exceed the carrying amount of goodwill. This guidance is effective for annual and any interim impairment tests in fiscal years beginning after December 15, 2019. The Company does not expect this guidance to have any impact on its Consolidated Financial Statements.

In January 2017, the FASB issued Accounting Standards Update ("ASU") No. 2017-01, *"Clarifying the Definition of a Business."* It revises the definition of a business and provides a framework to evaluate when an input and a substantive process are present in an acquisition to be considered a business. This guidance is effective for annual periods beginning after December 15, 2017. The Company does not expect this guidance to have any impact on its Consolidated Financial Statements.

In November 2016, the FASB issued ASU No. 2016-18, *"Restricted Cash."* It requires that amounts generally described as restricted cash and restricted cash equivalents should be included with cash and cash equivalents when reconciling the beginning-of-period and end-of-period total amounts shown on the statement of cash flows. This guidance is effective for interim and annual reporting periods beginning after

December 15, 2017. The Company does not expect this guidance to have a material impact on its Consolidated Financial Statements.

In August 2016, the FASB issued ASU No. 2016-15, *"Classification of Certain Cash Receipts and Cash Payments."* It provides guidance on eight specific cash flow issues with the objective of reducing the existing diversity in practice in how they are classified in the statement of cash flows. This guidance is effective for interim and annual reporting periods beginning after December 15, 2017. Early adoption is permitted, provided that all of the amendments are adopted in the same period. The Company does not expect this guidance to have a material impact on its Consolidated Financial Statements.

In March 2016, the FASB issued ASU No. 2016-09, *"Improvements to Employee Share-Based Payment Accounting."* Under this guidance, the areas of simplification involve several aspects of the accounting for share-based payment transactions, including the income tax consequences, classification of awards as either equity or liabilities, impact on earnings per share and classification on the statement of cash flows. This guidance is effective for interim and annual reporting periods beginning after December 15, 2016 and the Company will adopt this guidance in the first quarter of 2017. Upon the adoption of the guidance, all of the tax effects of share-based payments will be recorded in the income statement. The impact to the Consolidated Financial Statements will be dependent upon the underlying vesting or exercise activity and related future stock prices. The Company is currently evaluating the other impacts this guidance will have on its Consolidated Financial Statements.

In February 2016, the FASB issued ASU No. 2016-02, *"Leases (Topic 842)."* Under this guidance, lessees will be required to recognize a right-of-use asset and a lease liability for all operating leases defined under previous GAAP. This guidance is effective for interim and annual reporting periods beginning after December 15, 2018. The Company is currently evaluating the impact this guidance will have on its Consolidated Financial Statements.

In September 2015, the FASB issued ASU No. 2015-16, *"Simplifying the Accounting for Measurement-Period Adjustments."* Under this guidance, an acquirer is required to recognize adjustments to provisional amounts that are identified during the measurement period in the reporting period in which the adjustment amounts are determined. This guidance is effective for interim and annual reporting periods beginning after December 15, 2015. The Company adopted this guidance in the first quarter of 2016 and recorded fair value adjustments related to the Remy acquisition based on new information obtained during the measurement period primarily related to warranty, inventory, and deferred taxes. These adjustments have resulted in a decrease in goodwill of $12.1 million from the Company's initial estimate recorded in 2016.

In August 2015, the FASB issued ASU No. 2015-15, *"Presentation and Subsequent Measurement of Debt Issuance Costs Associated with Line-of-Credit Arrangements."* Under this guidance, debt issuance costs associated with line-of-credit arrangements would be deferred as an asset and amortized ratably over the term, regardless of whether there are any outstanding borrowings on the line-of-credit arrangement. This guidance is effective for interim and annual reporting periods beginning after December 15, 2015 and the Company adopted this guidance in the first quarter of 2016 with no impact on the Company's Consolidated Financial Statements.

In July 2015, the FASB issued ASU No. 2015-11, *"Simplifying the Measurement of Inventory."* Under this guidance, inventory should be measured at the lower of cost and net realizable value. Subsequent measurement is unchanged for inventory measured using LIFO or the retail inventory method. This guidance is effective for interim and annual reporting periods beginning after December 15, 2016. The Company does not expect this guidance to have a material impact on its Consolidated Financial Statements.

In May 2015, the FASB issued ASU No. 2015-07, *"Disclosures for Investments in Certain Entities That Calculate Net Asset Value per Share (or Its Equivalent)."* Under this guidance, investments measured at net asset value, as a practical expedient for fair value, are excluded from the fair value hierarchy. This guidance is effective for interim and annual reporting periods beginning after December 15, 2015 and the

Company adopted this guidance in the first quarter of 2016. The pension asset disclosure has been updated retrospectively to reflect this guidance and there is no impact on the Company's Consolidated Financial Statements.

In May 2014, the FASB amended the Accounting Standards Codification to add Topic 606, *"Revenue from Contracts with Customers,"* outlining a single comprehensive model for entities to use in accounting for revenue arising from contracts with customers and superseding most current revenue recognition guidance. This guidance is effective for interim and annual reporting periods beginning after December 15, 2017. The Company anticipates changes to the revenue recognition of pre-production activities such as customer owned tooling and engineering design & development recoveries, including the potential recording of these items as revenue. Further, the Company is currently analyzing the impact of the new guidance on its contracts and customer arrangements that include various pricing structures and cancellation clauses, which could impact the timing of revenue recognition. The Company expects to adopt this guidance effective January 1, 2018 utilizing the Modified Retrospective approach and is currently evaluating the impact that the adoption of this guidance will have on its consolidated financial statements.

NOTE 2 RESEARCH AND DEVELOPMENT COSTS

The Company's net Research & Development ("R&D") expenditures are included in selling, general and administrative expenses of the Consolidated Statements of Operations. Customer reimbursements are netted against gross R&D expenditures as they are considered a recovery of cost. Customer reimbursements for prototypes are recorded net of prototype costs based on customer contracts, typically either when the prototype is shipped or when it is accepted by the customer. Customer reimbursements for engineering services are recorded when performance obligations are satisfied in accordance with the contract and accepted by the customer. Financial risks and rewards transfer upon shipment, acceptance of a prototype component by the customer or upon completion of the performance obligation as stated in the respective customer agreement.

The following table presents the Company’s gross and net expenditures on R&D activities:

	Year Ended December 31,		
(millions of dollars)	2016	2015	2014
Gross R&D expenditures	$ 417.8	$ 386.2	$ 392.8
Customer reimbursements	(74.6)	(78.8)	(56.6)
Net R&D expenditures	$ 343.2	$ 307.4	$ 336.2

Net R&D expenditures as a percentage of net sales were 3.8%, 3.8% and 4.0% for the years ended December 31, 2016, 2015 and 2014, respectively. The Company has contracts with several customers at the Company's various R&D locations. No such contract exceeded 5% of net R&D expenditures in any of the years presented.

NOTE 3 OTHER EXPENSE, NET

Items included in other expense, net consist of:

(millions of dollars)	Year Ended December 31, 2016	2015	2014
Asbestos-related charge	$ 703.6	$ —	$ —
Loss on divestiture	127.1	—	—
Restructuring expense	26.9	65.7	90.8
Merger and acquisition expense	23.7	21.8	—
Intangible asset impairment	12.6	—	10.3
Pension settlement loss	—	25.7	3.1
Gain on previously held equity interest	—	(10.8)	—
Other	(4.2)	(1.0)	(10.4)
Other expense, net	$ 889.7	$ 101.4	$ 93.8

In the fourth quarter of 2016, the Company determined that its best estimate of the aggregate liability both for asbestos-related claims asserted but not yet resolved and potential asbestos-related claims not yet asserted, including an estimate for defense costs, is $879.3 million as of December 31, 2016. The Company recorded a charge of $703.6 million before tax ($440.6 million after tax) in Other Expense, representing the difference in the total liability from what was previously accrued, consulting fees, less available insurance coverage. See the Contingencies footnote to the Consolidated Financial Statements for further discussion.

During the fourth quarter of 2015, the Company acquired 100% of the equity interests in Remy. During the year ended December 31, 2016 and 2015, the Company incurred $23.7 million and $21.8 million of transition and realignment expenses and other professional fees associated with this transaction. Additionally, in October 2016, the Company entered into a definitive agreement to sell the light vehicle aftermarket business associated with Remy. This transaction closed in the fourth quarter of 2016 and the Company recorded loss on divestiture of $127.1 million in the year ended December 31, 2016. See the Recent Transactions footnote to the Consolidated Financial Statements for further discussion of this transaction.

During the years ended December 31, 2016, 2015 and 2014, the Company recorded restructuring expense of $26.9 million, $65.7 million and $90.8 million, respectively, primarily related to Drivetrain and Engine segment actions designed to improve future profitability and competitiveness. The restructuring expense also includes amounts related to a global realignment plan intended to enhance treasury management flexibility. See the Restructuring footnote to the Consolidated Financial Statements for further discussion of these expenses.

During the fourth quarter of 2016 and 2014, respectively, the Company recorded an intangible asset impairment loss of $12.6 million related to Engine segment Etatech's ECCOS intellectual technology and $10.3 million related to Engine segment unamortized trade names. The ECCOS intellectual technology impairment is due to the discontinuance of interest from potential customers during the fourth quarter of 2016 that significantly lowered the commercial feasibility of the product line.

During the fourth quarter of 2015, the Company settled approximately $48 million of its projected benefit obligation by transferring approximately $48 million in plan assets through a lump-sum pension de-risking disbursement made to an insurance company. This agreement unconditionally and irrevocably guarantees all future payments to certain participants that were receiving payments from the U.S. pension plan. The insurance company assumes all investment risk associated with the assets that were delivered as part of this transaction. As a result, the Company recorded a non-cash settlement loss of $25.7 million related to the accelerated recognition of unamortized losses. Additionally, during the third quarter of 2014, the Company discharged certain U.S. pension plan obligations by making lump-sum payments to former employees of the Company. As a result of this action, the Company recorded a settlement loss of $3.1 million in the U.S. pension plan.

During the first quarter of 2015, the Company completed the purchase of the remaining 51% of BERU Diesel Start Systems Pvt. Ltd. ("BERU Diesel") by acquiring the shares of its former joint venture partner. As a result of this transaction, the Company recorded a $10.8 million gain on the previously held equity interest in this joint venture. See the Recent Transactions footnote to the Consolidated Financial Statements for further discussion of this acquisition.

NOTE 4 INCOME TAXES

Earnings before income taxes and the provision for income taxes are presented in the following table.

	Year Ended December 31,		
(millions of dollars)	2016	2015	2014
Earnings before income taxes:			
U.S.	$ (724.7)	$ 125.6	$ 218.8
Non-U.S.	915.2	801.2	761.3
Total	$ 190.5	$ 926.8	$ 980.1
Provision for income taxes:			
Current:			
Federal	$ 37.4	$ 32.5	$ 25.7
State	6.1	(4.3)	3.9
Foreign	251.7	228.3	220.8
Total current	295.2	256.5	250.4
Deferred:			
Federal	(239.8)	31.8	66.2
State	(13.2)	2.6	(1.2)
Foreign	(11.9)	(10.5)	(22.8)
Total deferred	(264.9)	23.9	42.2
Total provision for income taxes	$ 30.3	$ 280.4	$ 292.6

The provision for income taxes resulted in an effective tax rate of 15.9%, 30.3% and 29.9% for the years ended December 31, 2016, 2015 and 2014, respectively. An analysis of the differences between the effective tax rate and the U.S. statutory rate for the years ended December 31, 2016, 2015 and 2014 is presented below.

(millions of dollars)	Year Ended December 31, 2016	2015	2014
Income taxes at U.S. statutory rate of 35%	$ 66.7	$ 324.4	$ 343.0
Increases (decreases) resulting from:			
State taxes, net of federal benefit	(10.6)	8.2	2.6
U.S. tax on non-U.S. earnings	40.7	31.5	18.8
Affiliates' earnings	(15.0)	(14.0)	(16.2)
Foreign rate differentials	(93.3)	(92.6)	(84.1)
Tax holidays	(25.5)	(21.2)	(23.6)
Withholding taxes	13.3	7.8	10.6
Tax credits	(3.2)	(3.2)	(3.9)
Reserve adjustments, settlements and claims	11.6	19.4	41.0
Valuation allowance adjustments	(2.7)	8.3	5.5
Non-deductible transaction costs	8.3	8.1	5.4
Provision to return and other one-time tax adjustments	0.3	(5.1)	(8.8)
Impact of transactions	16.3	11.6	—
Currency	10.0	0.1	(0.2)
Other foreign taxes	12.9	9.0	7.4
Partnership income	3.4	3.1	(0.3)
Other	(2.9)	(15.0)	(4.6)
Provision for income taxes, as reported	$ 30.3	$ 280.4	$ 292.6

The Company's provision for income taxes for the year ended December 31, 2016, includes tax benefits of $263.0 million, $22.7 million, $8.6 million, $6.0 million and $4.4 million associated with an asbestos-related charge, loss on divestiture, other one-time adjustments, restructuring expense and intangible asset impairment loss, respectively, discussed in the Other Expense, Net footnote. Additionally, this rate includes a tax expense of $2.2 million related to a gain associated with the release of certain Remy light vehicle aftermarket liabilities due to the expiration of a customer contract.

The Company's provision for income taxes for the year ended December 31, 2015, includes tax benefits of $9.0 million, $3.8 million and $3.7 million related to the pension settlement loss, merger and acquisition expense and restructuring expense, respectively, discussed in the Other Expense, Net footnote. Additionally, this rate includes a tax benefit of $9.9 million primarily related to foreign tax incentives and tax settlements.

The Company's provision for income taxes for the year ended December 31, 2014, includes tax benefits of $15.3 million, $0.4 million and $1.1 million related to restructuring expense, intangible asset impairment losses and the pension settlement loss, respectively, discussed in the Other Expense, Net footnote.

A roll forward of the Company's total gross unrecognized tax benefits for the years ended December 31, 2016 and 2015, respectively, is presented below. Of the total $88.6 million of unrecognized tax benefits as of December 31, 2016, approximately $69.9 million of the total represents the amount that, if recognized, would affect the Company's effective income tax rate in future periods. This amount differs from the gross unrecognized tax benefits presented in the table due to the decrease in the U.S. federal income taxes which would occur upon recognition of the state tax benefits and U.S. foreign tax credits included therein.

(millions of dollars)	2016	2015
Balance, January 1	$ 127.3	$ 60.4
Additions based on tax positions related to current year	16.1	20.7
Additions for tax positions of prior years	1.6	6.7
Additions from acquisitions	—	53.4
Reductions for closure of tax audits and settlements	(45.7)	(10.4)
Reductions for lapse in statute of limitations	(5.0)	(0.3)
Translation adjustment	(3.2)	(3.2)
Balance, December 31	$ 91.1	$ 127.3

Remy applied for a bilateral Advance Pricing Agreement ("APA") between the U.S. Internal Revenue Service and South Korea National Tax Service covering the tax years 2007 through 2014. At December 31, 2015, the Company recorded an uncertain tax benefit and related U.S. foreign tax credits of approximately $44.0 million. In the second quarter of 2016, the Company received the signed APA from the tax authorities and reclassified the related uncertain tax benefit to a current tax payable, which the Company paid in the third quarter of 2016.

The Company recognizes interest and penalties related to unrecognized tax benefits in income tax expense. The amount recognized in income tax expense for 2016 and 2015 is $3.2 million and $2.3 million, respectively. The Company has an accrual of approximately $16.0 million and $12.8 million for the payment of interest and penalties at December 31, 2016 and 2015, respectively. The Company estimates that payments of approximately $15.5 million will be made in the next 12 months for assessed tax liabilities from certain taxing jurisdictions and has reclassified this amount to current in the balance sheet as shown in the Balance Sheet Information footnote. Other possible changes within the next 12 months cannot be reasonably estimated at this time.

The Company and/or one of its subsidiaries files income tax returns in the U.S. federal, various state jurisdictions and various foreign jurisdictions. In certain tax jurisdictions, the Company may have more than one taxpayer. The Company is no longer subject to income tax examinations by tax authorities in its major tax jurisdictions as follows:

Tax jurisdiction	Years no longer subject to audit	Tax jurisdiction	Years no longer subject to audit
U.S. Federal	2012 and prior	Japan	2015 and prior
China	2010 and prior	Mexico	2010 and prior
France	2013 and prior	Poland	2011 and prior
Germany	2007 and prior	South Korea	2010 and prior
Hungary	2008 and prior		

In the U.S., certain tax attributes created in years prior to 2012 were subsequently utilized. Even though the U.S. federal statute of limitations has expired for years prior to 2012, the years in which these tax attributes were created could still be subject to examination, limited to only the examination of the creation of the tax attribute.

The gross components of deferred tax assets and liabilities as of December 31, 2016 and 2015 consist of the following:

(millions of dollars)	December 31, 2016	December 31, 2015
Deferred tax assets:		
Foreign tax credits	$ 139.5	$ 142.6
Employee compensation	41.3	34.6
Other comprehensive loss	66.3	79.7
Research and development capitalization	145.1	100.4
Net operating loss and capital loss carryforwards	71.5	81.8
Pension and other postretirement benefits	38.8	41.1
Asbestos-related	263.0	—
Other	128.9	125.3
Total deferred tax assets	$ 894.4	$ 605.5
Valuation allowance	(71.2)	(71.0)
Net deferred tax asset	$ 823.2	$ 534.5
Deferred tax liabilities:		
Goodwill and intangible assets	(251.3)	(259.2)
Fixed assets	(147.1)	(115.5)
Other	(55.0)	(66.4)
Total deferred tax liabilities	$ (453.4)	$ (441.1)
Net deferred taxes	$ 369.8	$ 93.4

At December 31, 2016, certain non-U.S. subsidiaries have net operating loss carryforwards totaling $134.7 million available to offset future taxable income. Of the total $134.7 million, $96.6 million expire at various dates from 2017 through 2036 and the remaining $38.1 million have no expiration date. The Company has a valuation allowance recorded against $72.9 million of the $134.7 million of non-U.S. net operating loss carryforwards. Certain U.S. subsidiaries have state net operating loss carryforwards totaling $817.8 million which are partially offset by a valuation allowance of $632.3 million. The state net operating loss carryforwards expire at various dates from 2017 to 2037. Certain U.S. subsidiaries also have state tax credit carryforwards of $14.8 million which are fully offset by a valuation allowance of $14.8 million. Certain non-U.S. subsidiaries located in China, Korea and Poland had tax exemptions or tax holidays, which reduced tax expense approximately $25.5 million and $21.2 million in 2016 and 2015, respectively. The U.S. has foreign tax credit carryforwards of $139.5 million, which expire at various dates from 2018 through 2025.

The Company is not required to provide U.S. federal or state income taxes on cumulative undistributed earnings of foreign subsidiaries when such earnings are considered permanently reinvested. The Company's policy is to evaluate this assertion on a quarterly basis. At December 31, 2016, the Company's deferred tax liability associated with unremitted foreign earnings was $38.5 million.

In connection with the acquisition of Remy in 2015, management executed a legal restructuring plan to align the Remy and BorgWarner non-US businesses. This transaction resulted in a taxable gain in the U.S., which was partially offset by Remy tax attributes including a net operating loss carryforward of $68.4 million, foreign tax credits of $93.6 million, and research and development credits of $6.9 million. The net impact of this transaction with the filing of Remy's final 2015 U.S. consolidated federal tax return resulted in a foreign tax credit carryforward of $47.0 million. The net U.S. cash tax liability resulting from the transaction was $8.4 million.

The Company has not recorded deferred income taxes on the difference between the book and tax basis of investments in foreign subsidiaries or foreign equity affiliates totaling approximately $3.9 billion in

2016, as these amounts are essentially permanent in nature. The difference will become taxable upon repatriation of assets, sale or liquidation of the investment. Due to fluctuation in tax laws around the world and fluctuations in foreign exchange rates, it is not practicable to determine the unrecognized deferred tax liability on this difference because the actual tax liability, if any, is dependent on circumstances existing when the repatriation occurs.

NOTE 5 BALANCE SHEET INFORMATION

Detailed balance sheet data is as follows:

(millions of dollars)	December 31, 2016	December 31, 2015
Receivables, net:		
Customers	$ 1,448.3	$ 1,423.6
Other	243.9	243.3
Gross receivables	1,692.2	1,666.9
Bad debt allowance(a)	(2.9)	(1.9)
Total receivables, net	$ 1,689.3	$ 1,665.0
Inventories, net:		
Raw material and supplies	$ 378.6	$ 412.9
Work in progress	102.9	102.5
Finished goods	174.9	222.4
FIFO inventories	656.4	737.8
LIFO reserve	(15.2)	(14.2)
Total inventories, net	$ 641.2	$ 723.6
Prepayments and other current assets:		
Prepaid tooling	$ 77.5	$ 98.5
Prepaid taxes	8.0	11.9
Restricted cash	—	12.3
Other	51.9	46.2
Total prepayments and other current assets	$ 137.4	$ 168.9
Property, plant and equipment, net:		
Land and land use rights	$ 111.0	$ 118.2
Buildings	670.6	661.7
Machinery and equipment	2,371.2	2,154.3
Capital leases	3.9	7.2
Construction in progress	338.2	386.4
Property, plant and equipment, gross	3,494.9	3,327.8
Accumulated depreciation	(1,137.5)	(1,036.8)
Property, plant & equipment, net, excluding tooling	2,357.4	2,291.0
Tooling, net of amortization	144.4	157.1
Property, plant & equipment, net	$ 2,501.8	$ 2,448.1
Investments and other long-term receivables:		
Investment in equity affiliates	$ 218.9	$ 200.1
Other long-term receivables	283.3	260.8
Total investments and other long-term receivables	$ 502.2	$ 460.9
Other non-current assets:		
Deferred income taxes	$ 424.0	$ 213.5
Asbestos insurance asset	178.7	108.5
Other	150.7	158.0
Total other non-current assets	$ 753.4	$ 480.0

(millions of dollars)	December 31, 2016	2015
Accounts payable and accrued expenses:		
Trade payables	$ 1,323.3	$ 1,225.6
Payroll and employee related	206.4	201.1
Product warranties	63.9	70.6
Customer related	52.8	55.7
Asbestos-related liability	51.7	47.7
Interest	22.9	20.4
Retirement related	18.1	20.1
Dividends payable to noncontrolling shareholders	15.7	20.0
Unrecognized tax benefits	15.5	45.5
Insurance	7.8	—
Severance	6.4	29.4
Derivatives	1.2	19.1
Other	61.6	111.2
Total accounts payable and accrued expenses	$ 1,847.3	$ 1,866.4
Other non-current liabilities:		
Deferred income taxes	$ 54.2	$ 120.1
Deferred revenue	33.5	36.6
Product warranties	31.4	37.3
Other	156.6	160.4
Total other non-current liabilities	$ 275.7	$ 354.4

(a) Bad debt allowance:	2016	2015	2014
Beginning balance, January 1	$ (1.9)	$ (2.3)	$ (2.1)
Provision	(3.2)	(0.5)	(0.6)
Write-offs	0.2	0.7	0.3
Business divestiture	2.0	—	—
Translation adjustment and other	—	0.2	0.1
Ending balance, December 31	$ (2.9)	$ (1.9)	$ (2.3)

As of December 31, 2016 and December 31, 2015, accounts payable of $85.3 million and $76.9 million, respectively, were related to property, plant and equipment purchases.

Interest costs capitalized for the years ended December 31, 2016, 2015 and 2014 were $14.1 million, $16.5 million and $13.5 million, respectively.

NSK-Warner KK ("NSK-Warner")

The Company has a 50% interest in NSK-Warner, a joint venture based in Japan that manufactures automatic transmission components. The Company's share of the earnings reported by NSK-Warner is accounted for using the equity method of accounting. NSK-Warner is the joint venture partner with a 40% interest in the Drivetrain Segment's South Korean subsidiary, BorgWarner Transmission Systems Korea Ltd. Dividends from NSK-Warner were $34.3 million, $18.0 million and $45.1 million in calendar years ended December 31, 2016, 2015 and 2014, respectively.

NSK-Warner has a fiscal year-end of March 31. The Company's equity in the earnings of NSK-Warner consists of the 12 months ended November 30. Following is summarized financial data for NSK-Warner, translated using the ending or periodic rates, as of and for the years ended November 30, 2016, 2015 and 2014 (unaudited):

(millions of dollars)	November 30, 2016	November 30, 2015
Balance sheets:		
Cash and securities	$ 98.6	$ 74.9
Current assets, including cash and securities	256.3	231.9
Non-current assets	194.5	167.5
Current liabilities	122.6	119.1
Non-current liabilities	48.2	39.3
Total equity	280.0	241.0

(millions of dollars)	Year Ended November 30, 2016	2015	2014
Statements of operations:			
Net sales	$ 601.8	$ 519.0	$ 546.4
Gross profit	134.1	118.6	124.5
Net earnings	71.7	73.3	80.3

NSK-Warner had no debt outstanding as of November 30, 2016 and 2015. Purchases by the Company from NSK-Warner were $23.9 million, $23.0 million and $21.3 million for the years ended December 31, 2016, 2015 and 2014, respectively.

NOTE 6 GOODWILL AND OTHER INTANGIBLES

During the fourth quarter of each year, the Company qualitatively assesses its goodwill and indefinite-lived intangible assets assigned to each of its reporting units. This qualitative assessment evaluates various events and circumstances, such as macro economic conditions, industry and market conditions, cost factors, relevant events and financial trends, that may impact a reporting unit's fair value. Using this qualitative assessment, the Company determines whether it is more-likely-than-not the reporting unit's fair value exceeds its carrying value. If it is determined that it is not more-likely-than-not the reporting unit's fair value exceeds the carrying value, or upon consideration of other factors, including recent acquisition or divestiture activity, the Company performs a quantitative, "step one," goodwill impairment analysis. In addition, the Company may test goodwill in between annual test dates if an event occurs or circumstances change that could more-likely-than-not reduce the fair value of a reporting unit below its carrying value.

During the fourth quarter of 2016, the Company performed a qualitative analysis on each reporting unit, except for the reporting unit with recent acquisition and divestiture activities, and determined it was more-likely-than-not the fair value exceeded the carrying value of these reporting units. For the reporting unit with acquisition and divestiture activities, the Company performed a quantitative, "step one," goodwill impairment analysis, which requires the Company to make significant assumptions and estimates about the extent and timing of future cash flows, discount rates and growth rates. The basis of this goodwill impairment analysis is the Company's annual budget and long-range plan (“LRP”). The annual budget and LRP includes a five year projection of future cash flows based on actual new products and customer commitments and assumes the last year of the LRP data is a fair indication of the future performance. Because the LRP is estimated over a significant future period of time, those estimates and assumptions are subject to a high degree of uncertainty. Further, the market valuation models and other financial ratios used by the Company require certain assumptions and estimates regarding the applicability of those models to the Company's facts and circumstances.

The Company believes the assumptions and estimates used to determine the estimated fair value are reasonable. Different assumptions could materially affect the estimated fair value. The primary assumptions affecting the Company's December 31, 2016 goodwill quantitative, "step one," impairment review are as follows:

- **Discount rate:** The Company used a 10% weighted average cost of capital ("WACC") as the discount rate for future cash flows. The WACC is intended to represent a rate of return that would be expected by a market participant.

- **Operating income margin:** The Company used historical and expected operating income margins, which may vary based on the projections of the reporting unit being evaluated.

In addition to the above primary assumptions, the Company notes the following risks to volume and operating income assumptions that could have an impact on the discounted cash flow models:

- The automotive industry is cyclical and the Company's results of operations would be adversely affected by industry downturns.
- The Company is dependent on market segments that use our key products and would be affected by decreasing demand in those segments.
- The Company is subject to risks related to international operations.

Based on the assumptions outlined above, the impairment testing conducted in the fourth quarter of 2016 indicated the Company's goodwill assigned to the reporting unit that was quantitatively assessed was not impaired and contained a fair value substantially higher than the reporting unit's carrying value. Additionally, sensitivity analyses were completed indicating a one percent increase in the discount rate or a one percent decrease in the operating margin assumptions would not result in the carrying value exceeding the fair value of the reporting unit quantitatively assessed.

The changes in the carrying amount of goodwill for the years ended December 31, 2016 and 2015 are as follows:

	2016		2015	
(millions of dollars)	Engine	Drivetrain	Engine	Drivetrain
Gross goodwill balance, January 1	$ 1,338.2	$ 921.5	$ 1,362.0	$ 345.7
Accumulated impairment losses, January 1	(501.8)	(0.2)	(501.8)	(0.2)
Net goodwill balance, January 1	$ 836.4	$ 921.3	$ 860.2	$ 345.5
Goodwill during the year:				
Acquisitions*	—	(12.1)	11.6	584.7
Divestitures**	—	(24.2)	—	—
Translation adjustment and other	(14.2)	(5.0)	(35.4)	(8.9)
Ending balance, December 31	$ 822.2	$ 880.0	$ 836.4	$ 921.3

* Acquisitions relate to the Company's 2015 purchases of Remy and BERU Diesel and fair value adjustments in 2016 based on new information obtained during the measurement period for Remy acquisition.

** Divestitures relate to the Company's 2016 disposition of Remy light vehicle aftermarket business and Divgi-Warner Private Limited.

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The Company's other intangible assets, primarily from acquisitions, consist of the following:

	December 31, 2016			December 31, 2015		
(millions of dollars)	Gross carrying amount	Accumulated amortization	Net carrying amount	Gross carrying amount	Accumulated amortization	Net carrying amount
Amortized intangible assets:						
Patented and unpatented technology	$ 108.1	$ 41.5	$ 66.6	$ 128.7	$ 42.4	$ 86.3
Customer relationships	481.4	141.2	340.2	490.3	116.1	374.2
Miscellaneous	5.3	3.4	1.9	5.6	3.0	2.6
Total amortized intangible assets	594.8	186.1	408.7	624.6	161.5	463.1
In-process R&D	3.8	—	3.8	14.6	—	14.6
Unamortized trade names	51.0	—	51.0	66.1	—	66.1
Total other intangible assets	$ 649.6	$ 186.1	$ 463.5	$ 705.3	$ 161.5	$ 543.8

Amortization of other intangible assets was $40.4 million, $19.2 million and $27.2 million for the years ended December 31, 2016, 2015 and 2014, respectively. The estimated useful lives of the Company's amortized intangible assets range from three to 15 years. The Company utilizes the straight line method of amortization recognized over the estimated useful lives of the assets. The estimated future annual amortization expense, primarily for acquired intangible assets, is as follows: $36.9 million in 2017, $35.7 million in 2018, $35.2 million in 2019, $34.8 million in 2020 and $34.8 million in 2021.

A roll forward of the gross carrying amounts of the Company's other intangible assets is presented below:

(millions of dollars)	2016	2015
Beginning balance, January 1	$ 705.3	$ 307.8
Acquisitions*	—	423.8
Impairment**	(23.9)	—
Divestitures***	(19.9)	—
Translation adjustment	(11.9)	(26.3)
Ending balance, December 31	$ 649.6	$ 705.3

* Acquisitions relate to the Company's 2015 purchases of Remy and BERU Diesel.
** Relates to the impairment of the Company's Etatech ECCOS intellectual technology in 2016.
*** Divestiture relates to the Company's sale of Remy light vehicle aftermarket business in 2016.

A roll forward of the accumulated amortization associated with the Company's other intangible assets is presented below:

(millions of dollars)	2016	2015
Beginning balance, January 1	$ 161.5	$ 156.7
Amortization	40.4	19.2
Impairment	(8.2)	—
Divestitures	(0.3)	—
Translation adjustment	(7.3)	(14.4)
Ending balance, December 31	$ 186.1	$ 161.5

NOTE 7 PRODUCT WARRANTY

The changes in the carrying amount of the Company’s total product warranty liability for the years ended December 31, 2016 and 2015 were as follows:

(millions of dollars)	2016	2015
Beginning balance, January 1	$ 107.9	$ 132.0
Provisions	62.2	28.6
Acquisitions	6.9	12.3
Dispositions	(9.1)	—
Payments	(70.1)	(54.7)
Translation adjustment	(2.5)	(10.3)
Ending balance, December 31	$ 95.3	$ 107.9

Acquisition activity in 2016 of $6.9 million relates to the Company's accrual for product issues that pre-dated the Company's 2015 acquisition of Remy. Disposition activity in 2016 of $9.1 million relates to the sale of the Remy light vehicle aftermarket business.

Acquisitions activity in 2015 of $12.3 million, relates to $29.4 million in warranty liability associated with the Company's purchase of Remy, partially offset by $17.1 million related to a significant settled warranty claim associated with a product issue that pre-dated the Company's 2014 acquisition of Gustav Wahler GmbH u. Co. KG and its general partner ("Wahler"). Including the impact of the reversal of a corresponding receivable, the Wahler settlement had an immaterial impact on the Consolidated Balance Sheet at December 31, 2015 and Consolidated Statement of Operations for the year ended December 31, 2015.

The Company’s warranty provision as a percentage of net sales has increased from 0.4% as of December 31, 2015 to 0.7% as of December 31, 2016. This change is primarily related to the Company’s fourth quarter 2015 acquisition of Remy. Furthermore, the Company's 2016 provision includes a $5.2 million warranty reversal related to the expiration of a Remy light vehicle aftermarket customer contract.

The product warranty liability is classified in the Consolidated Balance Sheets as follows:

	December 31,	
(millions of dollars)	2016	2015
Accounts payable and accrued expenses	$ 63.9	$ 70.6
Other non-current liabilities	31.4	37.3
Total product warranty liability	$ 95.3	$ 107.9

NOTE 8 NOTES PAYABLE AND LONG-TERM DEBT

As of December 31, 2016 and 2015, the Company had short-term and long-term debt outstanding as follows:

	December 31,	
(millions of dollars)	2016	2015
Short-term debt		
Short-term borrowings	$ 156.5	$ 280.7
Long-term debt		
5.75% Senior notes due 11/01/16 ($150 million par value)	$ —	$ 152.2
8.00% Senior notes due 10/01/19 ($134 million par value)	139.1	138.5
4.625% Senior notes due 09/15/20 ($250 million par value)	251.9	245.6
1.80% Senior notes due 11/7/22 (€500 million par value)	520.7	536.8
3.375% Senior notes due 03/15/25 ($500 million par value)	495.6	495.1
7.125% Senior notes due 02/15/29 ($121 million par value)	118.8	118.7
4.375% Senior notes due 03/15/45 ($500 million par value)	493.3	493.0
Term loan facilities and other	43.6	89.7
Total long-term debt	$ 2,063.0	$ 2,269.6
Less: current portion	19.4	160.7
Long-term debt, net of current portion	$ 2,043.6	$ 2,108.9

In July 2016, the Company terminated interest rate swaps which had the effect of converting $384 million of fixed rate notes to variable rates. The gain on the termination is being amortized into interest expense over the remaining terms of the notes. The value related to these swap terminations as of December 31, 2016 was $3.9 million and $1.3 million on the 4.625% and 8.00% notes, respectively, as an increase to the notes. The value of these interest rate swaps as of December 31, 2015 was $1.9 million and $0.8 million on the 4.625% and 8.00% notes, respectively, as a decrease to the notes.

The Company terminated fixed to floating interest rate swaps in 2009. The gain on the termination is being amortized into interest expense over the remaining term of the note. The value related to this swap termination at December 31, 2016 was $4.1 million on the 8.00% note as an increase to the note. The value related to these swap terminations at December 31, 2015 was $2.4 million and $5.5 million on the 5.75% and 8.00% notes, respectively, as an increase to the notes.

The weighted average interest rate on short-term borrowings outstanding as of December 31, 2016 and 2015 was 2.3% and 1.3%, respectively. The weighted average interest rate on all borrowings outstanding, including the effects of outstanding swaps, as of December 31, 2016 and 2015 was 3.8% and 3.6%, respectively.

Annual principal payments required as of December 31, 2016 are as follows :

(millions of dollars)		
2017	$	175.9
2018		17.1
2019		136.1
2020		252.1
2021		2.1
After 2021		1,647.4
Total payments	$	2,230.7
Less: unamortized discounts		11.2
Total	$	2,219.5

The Company's long-term debt includes various covenants, none of which are expected to restrict future operations.

The Company has a $1 billion multi-currency revolving credit facility which includes a feature that allows the Company's borrowings to be increased to $1.25 billion. The facility provides for borrowings through June 30, 2019. The Company has one key financial covenant as part of the credit agreement which is a debt to EBITDA ("Earnings Before Interest, Taxes, Depreciation and Amortization") ratio. The Company was in compliance with the financial covenant at December 31, 2016 and expects to remain compliant in future periods. At December 31, 2016 and December 31, 2015, the Company had no outstanding borrowings under this facility.

The Company's commercial paper program allows the Company to issue short-term, unsecured commercial paper notes up to a maximum aggregate principal amount outstanding of $1 billion. Under this program, the Company may issue notes from time to time and will use the proceeds for general corporate purposes. At December 31, 2016 and 2015, the Company had outstanding borrowings of $50.8 million and $215.0 million, respectively, under this program, which is classified in the Consolidated Balance Sheets in Notes payable and other short-term debt.

The total current combined borrowing capacity under the multi-currency revolving credit facility and commercial paper program cannot exceed $1 billion.

As of December 31, 2016 and 2015, the estimated fair values of the Company's senior unsecured notes totaled $2,081.4 million and $2,197.6 million, respectively. The estimated fair values were $62.0 million and $17.7 million higher than their carrying value at December 31, 2016 and 2015, respectively. Fair market values of the senior unsecured notes are developed using observable values for similar debt instruments, which are considered Level 2 inputs as defined by ASC Topic 820. The carrying values of the Company's multi-currency revolving credit facility and commercial paper program approximates fair value. The fair value estimates do not necessarily reflect the values the Company could realize in the current markets.

The Company had outstanding letters of credit of $32.3 million and $29.3 million at December 31, 2016 and 2015, respectively. The letters of credit typically act as guarantees of payment to certain third parties in accordance with specified terms and conditions.

NOTE 9 FAIR VALUE MEASUREMENTS

ASC Topic 820 emphasizes that fair value is a market-based measurement, not an entity specific measurement. Therefore, a fair value measurement should be determined based on assumptions that market participants would use in pricing an asset or liability. As a basis for considering market participant assumptions in fair value measurements, ASC Topic 820 establishes a fair value hierarchy, which prioritizes the inputs used in measuring fair values as follows:

Level 1: Observable inputs such as quoted prices for identical assets or liabilities in active markets;

Level 2: Inputs, other than quoted prices in active markets, that are observable either directly or indirectly; and

Level 3: Unobservable inputs in which there is little or no market data, which require the reporting entity to develop its own assumptions.

Assets and liabilities measured at fair value are based on one or more of the following three valuation techniques noted in ASC Topic 820:

A. **Market approach:** Prices and other relevant information generated by market transactions involving identical or comparable assets, liabilities or a group of assets or liabilities, such as a business.
B. **Cost approach:** Amount that would be required to replace the service capacity of an asset (replacement cost).
C. **Income approach:** Techniques to convert future amounts to a single present amount based upon market expectations (including present value techniques, option-pricing and excess earnings models).

The following tables classify assets and liabilities measured at fair value on a recurring basis as of December 31, 2016 and 2015:

(millions of dollars)	Balance at December 31, 2016	Basis of fair value measurements: Quoted prices in active markets for identical items (Level 1)	Significant other observable inputs (Level 2)	Significant unobservable inputs (Level 3)	Valuation technique
Assets:					
Commodity contracts	$ 0.1	$ —	$ 0.1	$ —	A
Foreign currency contracts	$ 7.2	$ —	$ 7.2	$ —	A
Other long-term receivables (insurance settlement agreement note receivable)	$ 71.5	$ —	$ 71.5	$ —	C
Liabilities:					
Foreign currency contracts	$ 1.1	$ —	$ 1.1	$ —	A

(millions of dollars)	Balance at December 31, 2015	Basis of fair value measurements: Quoted prices in active markets for identical items (Level 1)	Significant other observable inputs (Level 2)	Significant unobservable inputs (Level 3)	Valuation technique
Assets:					
Foreign currency contracts	$ 2.7	$ —	$ 2.7	$ —	A
Other long-term receivables (insurance settlement agreement note receivable)	$ 81.2	$ —	$ 81.2	$ —	C
Liabilities:					
Foreign currency contracts	$ 8.7	$ —	$ 8.7	$ —	A
Commodity contracts	$ 10.4	$ —	$ 10.4	$ —	A
Interest rate swap contracts	$ 2.7	$ —	$ 2.7	$ —	A

The following tables classify the Company's defined benefit plan assets measured at fair value on a recurring basis as of December 31, 2016 and 2015:

(millions of dollars)	Balance at December 31, 2016	Basis of fair value measurements: Quoted prices in active markets for identical items (Level 1)	Significant other observable inputs (Level 2)	Significant unobservable inputs (Level 3)	Valuation technique	Assets measured at NAV (a)
U.S. Plans:						
Fixed income securities	$ 113.8	$ 15.3	$ —	$ —	A	98.5
Equity securities	94.2	37.2	—	—	A	57.0
Real estate and other	21.5	13.1	0.5	—	A	7.9
	$ 229.5	$ 65.6	$ 0.5	$ —		$ 163.4
Non-U.S. Plans:						
Fixed income securities	$ 183.4	$ —	$ —	$ —	A	183.4
Equity securities	190.8	87.1	—	—	A	103.7
Real estate and other	19.6	—	—	—	A	19.6
	$ 393.8	$ 87.1	$ —	$ —		$ 306.7

(millions of dollars)	Balance at December 31, 2015	Basis of fair value measurements: Quoted prices in active markets for identical items (Level 1)	Significant other observable inputs (Level 2)	Significant unobservable inputs (Level 3)	Valuation technique	Assets measured at NAV (a)
U.S. Plans:						
Fixed income securities	$ 117.4	$ 14.3	$ —	$ —	A	103.1
Equity securities	94.2	36.9	—	—	A	57.3
Real estate and other	24.2	—	0.5	—	A	23.7
	$ 235.8	$ 51.2	$ 0.5	$ —		$ 184.1
Non-U.S. Plans:						
Fixed income securities	$ 181.0	$ —	$ —	$ —	A	181.0
Equity securities	194.7	82.9	—	—	A	111.8
Real estate and other	19.4	—	—	—	A	19.4
	$ 395.1	$ 82.9	$ —	$ —		$ 312.2

(a) Certain assets that are measured at fair value using the NAV per share (or its equivalent) practical expedient have not been classified in the fair value hierarchy. These amounts represent investments in commingled and managed funds which have underlying assets in fixed income securities, equity securities, and other assets.

Refer to the Retirement Benefit Plans footnote to the Consolidated Financial Statements for more detail surrounding the defined plan's asset investment policies and strategies, target allocation percentages and expected return on plan asset assumptions.

NOTE 10 FINANCIAL INSTRUMENTS

The Company's financial instruments include cash and marketable securities. Due to the short-term nature of these instruments, their book value approximates their fair value. The Company's financial instruments may include long-term debt, interest rate and cross-currency swaps, commodity derivative contracts and foreign currency derivatives. All derivative contracts are placed with counterparties that have an S&P, or equivalent, investment grade credit rating at the time of the contracts' placement. At December 31, 2016 and 2015, the Company had no derivative contracts that contained credit risk related contingent features.

The Company uses certain commodity derivative contracts to protect against commodity price changes related to forecasted raw material and supplies purchases. The Company primarily utilizes forward and option contracts, which are designated as cash flow hedges. At December 31, 2016 and 2015, the following commodity derivative contracts were outstanding:

Commodity	Commodity derivative contracts: Volume hedged December 31, 2016	Volume hedged December 31, 2015	Units of measure	Duration
Copper	213.8	6,273.2	Metric Tons	Dec -17

The Company manages its interest rate risk by balancing its exposure to fixed and variable rates while attempting to optimize its interest costs. The Company selectively uses interest rate swaps to reduce market value risk associated with changes in interest rates (fair value hedges). In July 2016, the Company terminated the following interest swaps which were outstanding at December 31, 2015.

	Interest rate swap contracts		
(in millions)	Hedge Type	Notional Amount	Duration
Fixed to floating	Fair value	$ 250.0	Sept - 20
Fixed to floating	Fair value	$ 134.0	Oct - 19

The Company uses foreign currency forward and option contracts to protect against exchange rate movements for forecasted cash flows, including capital expenditures, purchases, operating expenses or sales transactions designated in currencies other than the functional currency of the operating unit. In addition, the Company uses foreign currency forward contracts to hedge exposure associated with our net investment in certain foreign operations (net investment hedges). The Company has also designated its Euro denominated debt as a net investment hedge of the Company's investment in a European subsidiary. Foreign currency derivative contracts require the Company, at a future date, to either buy or sell foreign currency in exchange for the operating units' local currency. At December 31, 2016 and December 31, 2015, the following foreign currency derivative contracts were outstanding:

Foreign currency derivatives (in millions)

Functional currency	Traded currency	Notional in traded currency December 31, 2016	Notional in traded currency December 31, 2015	Duration
Chinese renminbi	Euro	—	30.5	Dec - 16
Chinese renminbi	US dollar	33.5	13.8	Dec - 17
Euro	British pound	4.2	—	Dec - 17
Euro	Hungarian forint	—	3,434.5	Dec - 16
Euro	Japanese yen	1,004.8	487.1	Dec - 17
Euro	Polish zloty	18.8	—	Dec - 17
Euro	US dollar	35.3	30.1	Dec - 17
Japanese yen	Chinese renminbi	68.7	92.6	Dec - 17
Japanese yen	Korean won	5,689.2	5,998.9	Dec - 17
Japanese yen	US dollar	2.0	3.0	Dec - 17
Korean won	Euro	—	2.5	Dec - 16
Korean won	Japanese yen	539.9	—	Dec - 17
Korean won	US dollar	14.2	77.9	Dec - 17
Mexican peso	US dollar	10.5	—	Dec - 17
Swedish krona	Euro	48.2	—	Dec - 17
US dollar	Mexican peso	—	469.0	Sept - 16

At December 31, 2016 and 2015, the following amounts were recorded in the Consolidated Balance Sheets as being payable to or receivable from counterparties under ASC Topic 815:

	Assets			Liabilities		
(millions of dollars)	Location	December 31, 2016	December 31, 2015	Location	December 31, 2016	December 31, 2015
Foreign currency	Prepayments and other current assets	$ 7.2	$ 2.7	Accounts payable and accrued expenses	$ 1.1	$ 8.7
Commodity	Prepayments and other current assets	$ 0.1	$ —	Accounts payable and accrued expenses	$ —	$ 10.4
Interest rate swaps	Other non-current assets	$ —	$ —	Other non-current liabilities	$ —	$ 2.7

Effectiveness for cash flow and net investment hedges is assessed at the inception of the hedging relationship and quarterly, thereafter. To the extent that derivative instruments are deemed to be effective, gains and losses arising from these contracts are deferred into accumulated other comprehensive income (loss) ("AOCI") and reclassified into income as the underlying operating transactions are recognized. These realized gains or losses offset the hedged transaction and are recorded on the same line in the statement of operations. To the extent that derivative instruments are deemed to be ineffective, gains or losses are recognized into income.

The table below shows deferred gains (losses) reported in AOCI as well as the amount expected to be reclassified to income in one year or less. The amount expected to be reclassified to income in one year or less assumes no change in the current relationship of the hedged item at December 31, 2016 market rates.

	Deferred gain (loss) in AOCI at		Gain (loss) expected to be reclassified to income in one year or less
(millions of dollars)	December 31, 2016	December 31, 2015	
Foreign currency	$ 5.6	$ (0.1)	$ 5.6
Commodity	(0.1)	(2.1)	(0.1)
Net investment hedges	12.6	12.2	—
Foreign currency denominated debt	16.9	$ 0.1	—
Total	$ 35.0	$ 10.1	$ 5.5

Derivative instruments designated as hedging instruments as defined by ASC Topic 815 held during the period resulted in the following gains and losses recorded in income:

		Gain (loss) reclassified from AOCI to income (effective portion)			Gain (loss) recognized in income (ineffective portion)	
		Year Ended December 31,			Year Ended December 31,	
(millions of dollars)	Location	2016	2015	Location	2016	2015
Foreign currency	Sales	$ (0.1)	$ (1.4)	SG&A expense	$ 0.3	$ (0.5)
Foreign currency	Cost of goods sold	$ 1.4	$ 7.2	SG&A expense	$ —	$ 0.2
Commodity	Cost of goods sold	$ (1.4)	$ (0.1)	Cost of goods sold	$ (0.3)	$ —
Cross-currency swap	Interest	$ —	$ 0.4	Interest expense	$ —	$ —

	Year Ended December 31, 2016	
(millions of dollars)	Gain (loss) on swaps	Gain (loss) on borrowings
Income Statement Classification		
Interest expense and finance charges	$ 8.5	$ (8.5)

At December 31, 2016, derivative instruments that were not designated as hedging instruments as defined by ASC Topic 815 were immaterial.

NOTE 11 RETIREMENT BENEFIT PLANS

The Company sponsors various defined contribution savings plans, primarily in the U.S., that allow employees to contribute a portion of their pre-tax and/or after-tax income in accordance with plan specified guidelines. Under specified conditions, the Company will make contributions to the plans and/or match a percentage of the employee contributions up to certain limits. Total expense related to the defined contribution plans was $28.3 million, $28.0 million and $27.6 million in the years ended December 31, 2016, 2015 and 2014, respectively.

The Company has a number of defined benefit pension plans and other postretirement employee benefit plans covering eligible salaried and hourly employees and their dependents. The defined pension benefits provided are primarily based on (i) years of service and (ii) average compensation or a monthly retirement benefit amount. The Company provides defined benefit pension plans in France, Germany, Ireland, Italy, Japan, Mexico, Monaco, South Korea, Sweden, U.K. and the U.S. The other postretirement employee benefit plans, which provide medical benefits, are unfunded plans. All pension and other postretirement employee benefit plans in the U.S. have been closed to new employees. The measurement date for all plans is December 31.

During the fourth quarter of 2015, the Company settled approximately $48 million of its projected benefit obligation by transferring approximately $48 million in plan assets through a lump-sum pension de-risking disbursement made to an insurance company. This agreement unconditionally and irrevocably guarantees all future payments to certain participants that were receiving payments from the U.S. pension plan. The insurance company assumes all investment risk associated with the assets that were delivered as part of this transaction. As a result, the Company recorded a non-cash settlement loss of $25.7 million related to the accelerated recognition of unamortized losses.

During the third quarter of 2014, the Company discharged certain U.S. pension plan obligations by making lump-sum payments to former employees of the Company. As a result of this action, the Company recorded a settlement loss of $3.1 million in the U.S. pension plan.

The following table summarizes the expenses for the Company's defined contribution and defined benefit pension plans and the other postretirement defined employee benefit plans.

	Year Ended December 31,		
(millions of dollars)	2016	2015	2014
Defined contribution expense	$ 28.3	$ 28.0	$ 27.6
Defined benefit pension expense	10.1	35.5	18.6
Other postretirement employee benefit expense	1.4	3.3	3.3
Total	$ 39.8	$ 66.8	$ 49.5

The following provides a roll forward of the plans' benefit obligations, plan assets, funded status and recognition in the Consolidated Balance Sheets.

	Pension benefits				Other postretirement employee benefits	
	Year Ended December 31,				Year Ended December 31,	
	2016		2015			
(millions of dollars)	US	Non-US	US	Non-US	2016	2015
Change in projected benefit obligation:						
Projected benefit obligation, January 1	$ 300.7	$ 508.5	$ 306.2	$ 527.8	$ 145.3	$ 169.7
Service cost	—	16.2	—	14.9	0.2	0.2
Interest cost	9.6	12.5	11.2	14.1	4.0	5.7
Plan participants' contributions	—	0.4	—	0.3	—	—
Plan amendments	—	0.2	—	—	—	—
Settlement and curtailment	—	(1.3)	(48.1)	(4.7)	—	—
Actuarial (gain) loss	(5.7)	70.2	(12.1)	(9.0)	(14.4)	(16.8)
Currency translation	—	(45.3)	—	(42.9)	—	—
(Divestiture) Acquisition	—	(12.8)	68.1	23.9	—	1.7
Benefits paid	(22.1)	(20.4)	(24.6)	(15.9)	(15.2)	(15.2)
Projected benefit obligation, December 31	$ 282.5	$ 528.2	$ 300.7	$ 508.5	$ 119.9	$ 145.3
Change in plan assets:						
Fair value of plan assets, January 1	$ 235.8	$ 395.1	$ 265.6	$ 395.6		
Actual return on plan assets	12.7	54.0	(0.6)	10.3		
Employer contribution	2.7	17.0	—	19.3		
Plan participants' contribution	—	0.4	—	0.3		
Settlements	—	(1.3)	(48.1)	(2.5)		
Currency translation	—	(40.8)	—	(30.8)		
(Divestiture) Acquisition	—	(10.2)	43.5	18.8		
Benefits paid	(21.7)	(20.4)	(24.6)	(15.9)		
Fair value of plan assets, December 31	$ 229.5	$ 393.8	$ 235.8	$ 395.1		
Funded status	$ (53.0)	$ (134.4)	$ (64.9)	$ (113.4)	$ (119.9)	$ (145.3)
Amounts in the Consolidated Balance Sheets consist of:						
Non-current assets	$ —	$ 4.9	$ —	$ 9.4	$ —	$ —
Current liabilities	(0.1)	(3.5)	(0.3)	(3.0)	(14.5)	(16.8)
Non-current liabilities	(52.9)	(135.8)	(64.6)	(119.8)	(105.4)	(128.5)
Net amount	$ (53.0)	$ (134.4)	$ (64.9)	$ (113.4)	$ (119.9)	$ (145.3)
Amounts in accumulated other comprehensive loss consist of:						
Net actuarial loss	$ 116.9	$ 163.7	$ 125.4	$ 144.2	$ 19.9	$ 36.5
Net prior service (credit) cost	(7.4)	0.8	(8.2)	0.7	(19.2)	(24.0)
Net amount*	$ 109.5	$ 164.5	$ 117.2	$ 144.9	$ 0.7	$ 12.5
Total accumulated benefit obligation for all plans	$ 282.5	$ 505.5	$ 300.7	$ 486.2		

* AOCI shown above does not include our equity investee, NSK-Warner. NSK-Warner had an AOCI loss of $10.8 million and $7.1 million at December 31, 2016 and 2015, respectively.

The funded status of pension plans with accumulated benefit obligations in excess of plan assets at December 31 is as follows:

(millions of dollars)	December 31, 2016	December 31, 2015
Accumulated benefit obligation	$ (594.0)	$ (597.6)
Plan assets	423.3	431.0
Deficiency	$ (170.7)	$ (166.6)
Pension deficiency by country:		
United States	$ (53.0)	$ (64.9)
Germany	(77.5)	(64.3)
Other	(40.2)	(37.4)
Total pension deficiency	$ (170.7)	$ (166.6)

The weighted average asset allocations of the Company’s funded pension plans and target allocations by asset category are as follows:

	December 31, 2016	December 31, 2015	Target Allocation
U.S. Plans:			
Real estate and other	9%	12%	0% - 14%
Fixed income securities	50%	53%	41% - 61%
Equity securities	41%	35%	30% - 50%
	100%	100%	
Non-U.S. Plans:			
Real estate and other	5%	5%	0% - 6%
Fixed income securities	47%	46%	43% - 53%
Equity securities	48%	49%	46% - 56%
	100%	100%	

The Company's investment strategy is to maintain actual asset weightings within a preset range of target allocations. The Company believes these ranges represent an appropriate risk profile for the planned benefit payments of the plans based on the timing of the estimated benefit payments. In each asset category, separate portfolios are maintained for additional diversification. Investment managers are retained in each asset category to manage each portfolio against its benchmark. Each investment manager has appropriate investment guidelines. In addition, the entire portfolio is evaluated against a relevant peer group. The defined benefit pension plans did not hold any Company securities as investments as of December 31, 2016 and 2015. A portion of pension assets is invested in common and commingled trusts.

In December 2014, the Company made a discretionary contribution of $30.2 million to its German pension plans. The Company expects to contribute a total of $15 million to $25 million into its defined benefit pension plans during 2017. Of the $15 million to $25 million in projected 2017 contributions, $3.2 million are contractually obligated, while any remaining payments would be discretionary.

Refer to the Fair Value Measurements footnote to the Consolidated Financial Statements for more detail surrounding the fair value of each major category of plan assets as well as the inputs and valuation techniques used to develop the fair value measurements of the plans' assets at December 31, 2016 and 2015.

See the table below for a breakout of net periodic benefit cost between U.S. and non-U.S. pension plans:

	Pension benefits						Other postretirement employee benefits		
	Year Ended December 31,						Year Ended December 31,		
	2016		2015		2014				
(millions of dollars)	US	Non-US	US	Non-US	US	Non-US	2016	2015	2014
Service cost	$ —	$ 16.2	$ —	$ 14.9	$ —	$ 12.8	$ 0.2	$ 0.2	$ 0.3
Interest cost	9.6	12.5	11.2	14.1	12.1	18.1	4.0	5.7	6.7
Expected return on plan assets	(15.0)	(24.3)	(17.0)	(24.8)	(17.6)	(21.1)	—	—	—
Settlements, curtailments and other	—	—	25.7	(0.8)	3.1	0.7	—	—	—
Amortization of unrecognized prior service (credit) cost	(0.8)	0.6	(0.8)	0.1	(0.8)	—	(4.9)	(5.7)	(6.4)
Amortization of unrecognized loss	5.1	6.2	6.3	6.6	6.5	4.8	2.1	3.1	2.7
Net periodic (income) cost	$ (1.1)	$ 11.2	$ 25.4	$ 10.1	$ 3.3	$ 15.3	$ 1.4	$ 3.3	$ 3.3

The estimated net loss for the defined benefit pension plans that will be amortized from accumulated other comprehensive loss into net periodic benefit cost over the next fiscal year is $11.6 million. The estimated net loss and prior service credit for the other postretirement employee benefit plans that will be amortized from accumulated other comprehensive loss into net periodic benefit cost over the next fiscal year are $1.3 million and $4.1 million, respectively.

The Company's weighted-average assumptions used to determine the benefit obligations for its defined benefit pension and other postretirement employee benefit plans as of December 31, 2016 and 2015 were as follows:

	December 31,	
(percent)	2016	2015
U.S. pension plans:		
Discount rate	3.94	4.15
Rate of compensation increase	N/A	N/A
U.S. other postretirement employee benefit plans:		
Discount rate	3.61	3.84
Rate of compensation increase	N/A	N/A
Non-U.S. pension plans:		
Discount rate	2.25	2.99
Rate of compensation increase	3.00	3.01

The Company's weighted-average assumptions used to determine the net periodic benefit cost for its defined benefit pension and other postretirement employee benefit plans for the years ended December 31, 2016, 2015 and 2014 were as follows:

(percent)	Year Ended December 31, 2016	2015	2014
U.S. pension plans:			
Discount rate	4.15	3.89	4.41
Rate of compensation increase	N/A	N/A	N/A
Expected return on plan assets	6.70	6.71	6.75
U.S. other postretirement plans:			
Discount rate	3.84	3.50	4.00
Rate of compensation increase	N/A	N/A	N/A
Expected return on plan assets	N/A	N/A	N/A
Non-U.S. pension plans:			
Discount rate	2.99	2.84	3.90
Rate of compensation increase	3.01	2.84	2.77
Expected return on plan assets	6.41	6.53	6.24

The Company's approach to establishing the discount rate is based upon the market yields of high-quality corporate bonds, with appropriate consideration of each plan's defined benefit payment terms and duration of the liabilities.

The Company determines its expected return on plan asset assumptions by evaluating estimates of future market returns and the plans' asset allocation. The Company also considers the impact of active management of the plans' invested assets.

The estimated future benefit payments for the pension and other postretirement employee benefits are as follows:

(millions of dollars)	Pension benefits		Other postretirement employee benefits
Year	U.S.	Non-U.S.	
2017	$ 22.8	$ 17.7	$ 14.8
2018	19.8	18.7	13.7
2019	19.7	17.3	12.6
2020	19.6	19.1	12.1
2021	19.3	19.5	11.0
2022-2026	89.8	110.7	39.6

The weighted-average rate of increase in the per capita cost of covered health care benefits is projected to be 6.79% in 2017 for pre-65 and post-65 participants, decreasing to 5.0% by the year 2022. A one-percentage point change in the assumed health care cost trend would have the following effects:

(millions of dollars)	One Percentage Point Increase	Decrease
Effect on other postretirement employee benefit obligation	$ 7.9	$ (7.0)
Effect on total service and interest cost components	$ 0.3	$ (0.3)

NOTE 12 STOCK-BASED COMPENSATION

Under the Company's 2004 Stock Incentive Plan ("2004 Plan"), the Company granted options to purchase shares of the Company's common stock at the fair market value on the date of grant. The options vested over periods up to three years and have a term of 10 years from date of grant. At its November 2007 meeting, the Company's Compensation Committee decided that restricted common stock awards and stock units ("restricted stock") would be awarded in place of stock options for long-term incentive award grants to employees. Restricted stock granted to employees generally vests 50% after two years and the remainder after three years from the date of grant. Restricted stock granted to non-employee directors generally vests on the first anniversary date of the grant. In February 2014, the Company's Board of Directors replaced the expired 2004 Plan by adopting the BorgWarner Inc. 2014 Stock Incentive Plan ("2014 Plan"). On April 30, 2014, the Company's stockholders approved the 2014 Plan. Under the 2014 Plan, approximately 8 million shares are authorized for grant, of which approximately 5.7 million shares are available for future issuance as of December 31, 2016.

Stock Options A summary of the plans' shares under option at December 31, 2016, 2015 and 2014 is as follows:

	Shares (thousands)	Weighted average exercise price	Weighted average remaining contractual life (in years)	Aggregate intrinsic value (in millions)
Outstanding at January 1, 2014	1,997	$ 15.82	2.6	$ 80.0
Exercised	(283)	$ 14.04		$ 13.8
Outstanding at December 31, 2014	1,714	$ 16.11	1.7	$ 66.5
Exercised	(440)	$ 14.76		$ 19.2
Forfeited	(7)	$ 14.52		
Outstanding at December 31, 2015	1,267	$ 16.59	0.9	$ 33.7
Exercised	(794)	$ 16.07		$ 14.4
Outstanding at December 31, 2016	473	$ 17.47	0.1	$ 10.4
Options exercisable at December 31, 2016	473	$ 17.47	0.1	$ 10.4

Proceeds from stock option exercises for the years ended December 31, 2016, 2015 and 2014 were as follows:

	Year Ended December 31,		
(millions of dollars)	2016	2015	2014
Proceeds from stock options exercised — gross	$ 12.7	$ 6.5	$ 4.0
Tax benefit	0.3	10.3	12.9
Proceeds from stock options exercised, net of tax	$ 13.0	$ 16.8	$ 16.9

Restricted Stock The value of restricted stock is determined by the market value of the Company's common stock at the date of grant. In 2016, restricted stock in the amount of 698,788 shares and 25,048 shares was granted to employees and non-employee directors, respectively. The value of the awards is recognized as compensation expense ratably over the restriction periods. As of December 31, 2016, there was $25.6 million of unrecognized compensation expense that will be recognized over a weighted average period of approximately 2 years.

Restricted stock compensation expense recorded in the Consolidated Statements of Operations is as follows:

	Year Ended December 31,		
(millions of dollars, except per share data)	2016	2015	2014
Restricted stock compensation expense	$ 26.7	$ 28.0	$ 20.7
Restricted stock compensation expense, net of tax	$ 19.5	$ 20.4	$ 15.1

A summary of the status of the Company's nonvested restricted stock for employees and non-employee directors at December 31, 2016, 2015 and 2014 is as follows:

	Shares subject to restriction (thousands)	Weighted average price
Nonvested at January 1, 2014	1,411	$ 37.86
Granted	447	$ 54.36
Vested	(530)	$ 37.42
Forfeited	(62)	$ 41.14
Nonvested at December 31, 2014	1,266	$ 43.57
Granted	687	$ 58.45
Vested	(588)	$ 39.14
Forfeited	(39)	$ 50.85
Nonvested at December 31, 2015	1,326	$ 53.18
Granted	724	$ 30.07
Vested	(551)	$ 47.55
Forfeited	(70)	$ 43.05
Nonvested at December 31, 2016	1,429	$ 44.12

Total Shareholder Return Performance Share Plans The 2004 and 2014 Plans provide for awarding of performance shares to members of senior management at the end of successive three-year periods based on the Company's performance in terms of total shareholder relative to a peer group of automotive companies.

The Company recognizes compensation expense relating to its performance share plans ratably over the performance period. Compensation expense associated with the performance share plans is calculated using a lattice model (Monte Carlo simulation). The amounts expensed under the plan and the common stock issuances for the three-year measurement periods ended December 31, 2016, 2015 and 2014 were as follows:

	Year Ended December 31,		
(millions of dollars, except share data)	2016	2015	2014
Expense	$ 9.6	$ 12.2	$ 11.4
Number of shares	—	—	—

Relative Revenue Growth Performance Share Plans In the second quarter of 2016, the Company started a new performance share program to reward members of senior management based on the Company's performance in terms of revenue growth relative to the vehicle market over three-year performance periods. The value of this performance share is determined by the market value of the Company's common stock at the date of grant. The Company recognizes compensation expense relating to its performance share plans over the performance period based on the number of shares expected to vest at the end of each reporting period. Total compensation expense was $7.1 million for the year ended December 31, 2016 with approximately 115,000 shares to be paid out in February 2017.

NOTE 13 ACCUMULATED OTHER COMPREHENSIVE LOSS

The following table summarizes the activity within accumulated other comprehensive loss during the years ended December 31, 2016, 2015 and 2014:

(millions of dollars)	Foreign currency translation adjustments	Hedge instruments	Defined benefit postretirement plans	Other	Total
Beginning Balance, January 1, 2014	$ 181.1	$ (16.0)	$ (181.5)	$ 2.4	$ (14.0)
Comprehensive (loss) income before reclassifications	(341.8)	26.7	(73.8)	0.3	(388.6)
Income taxes associated with comprehensive (loss) income before reclassifications	—	(9.6)	23.3	—	13.7
Reclassification from accumulated other comprehensive (loss) income	—	0.6	6.8	—	7.4
Income taxes reclassified into net earnings	—	—	(2.1)	—	(2.1)
Ending Balance December 31, 2014	$ (160.7)	$ 1.7	$ (227.3)	$ 2.7	$ (383.6)
Comprehensive (loss) income before reclassifications	(260.5)	2.6	44.9	0.2	(212.8)
Income taxes associated with comprehensive (loss) income before reclassifications	—	(1.6)	(14.3)	—	(15.9)
Reclassification from accumulated other comprehensive (loss) income	—	(6.1)	9.6	—	3.5
Income taxes reclassified into net earnings	—	1.4	(2.8)	—	(1.4)
Ending Balance December 31, 2015	$ (421.2)	$ (2.0)	$ (189.9)	$ 2.9	$ (610.2)
Comprehensive (loss) income before reclassifications	(109.1)	8.0	(11.4)	(1.6)	(114.1)
Income taxes associated with comprehensive (loss) income before reclassifications	—	(0.7)	(2.6)	—	(3.3)
Reclassification from accumulated other comprehensive (loss) income	—	0.1	8.3	—	8.4
Income taxes reclassified into net earnings	—	(0.4)	(2.5)	—	(2.9)
Ending Balance December 31, 2016	$ (530.3)	$ 5.0	$ (198.1)	$ 1.3	$ (722.1)

NOTE 14 CONTINGENCIES

In the normal course of business, the Company is party to various commercial and legal claims, actions and complaints, including matters involving warranty claims, intellectual property claims, general liability and various other risks. It is not possible to predict with certainty whether or not the Company will ultimately be successful in any of these commercial and legal matters or, if not, what the impact might be. The Company's environmental and asbestos liability contingencies are discussed separately below. The Company's management does not expect that an adverse outcome in any of these commercial and legal claims, actions and complaints will have a material adverse effect on the Company's results of operations, financial position or cash flows, although it could be material to the results of operations in a particular quarter.

Litigation

In January 2006, BorgWarner Diversified Transmission Products Inc. ("DTP"), a subsidiary of the Company, filed a declaratory judgment action in United States District Court, Southern District of Indiana (Indianapolis Division) against the United Automobile, Aerospace, and Agricultural Implements Workers of America ("UAW") Local No. 287 and Gerald Poor, individually and as the representative of a defendant class. DTP sought the Court's affirmation that DTP did not violate the Labor-Management Relations Act or the Employee Retirement Income Security Act (ERISA) by unilaterally amending certain medical plans effective April 1, 2006 and October 1, 2006, prior to the expiration of the then-current collective bargaining agreements. On September 10, 2008, the Court found that DTP's reservation of the right to make such amendments reducing the level of benefits provided to retirees was limited by its collectively bargained health insurance agreement with the UAW, which did not expire until April 24, 2009. Thus, the amendments were untimely. In 2008, the Company recorded a charge of $4.0 million as a result of the Court's decision.

DTP filed a declaratory judgment action in the United States District Court, Southern District of Indiana (Indianapolis Division) against the UAW Local No. 287 and Jim Barrett and others, individually and as representatives of a defendant class, on February 26, 2009 again seeking the Court's affirmation that DTP did not violate the Labor - Management Relations Act or ERISA by modifying the level of benefits provided retirees to make them comparable to other Company retiree benefit plans after April 24, 2009. Certain retirees, on behalf of themselves and others, filed a mirror-image action in the United States District Court, Eastern District of Michigan (Southern Division) on March 11, 2009, for which a class has been certified. During the last quarter of 2009, the action pending in Indiana was dismissed, while the action in Michigan continued. On December 5, 2016, the Court granted the Company's Motion for Summary Judgment and ordered dismissal of the retirees' Complaint with prejudice. No appeal was filed on behalf of the retirees and the time to file an appeal has expired.

Environmental

The Company and certain of its current and former direct and indirect corporate predecessors, subsidiaries and divisions have been identified by the United States Environmental Protection Agency and certain state environmental agencies and private parties as potentially responsible parties ("PRPs") at various hazardous waste disposal sites under the Comprehensive Environmental Response, Compensation and Liability Act ("Superfund") and equivalent state laws and, as such, may presently be liable for the cost of clean-up and other remedial activities at 27 such sites. Responsibility for clean-up and other remedial activities at a Superfund site is typically shared among PRPs based on an allocation formula.

The Company believes that none of these matters, individually or in the aggregate, will have a material adverse effect on its results of operations, financial position or cash flows. Generally, this is because either the estimates of the maximum potential liability at a site are not material or the liability will be shared with other PRPs, although no assurance can be given with respect to the ultimate outcome of any such matter.

Based on information available to the Company (which in most cases includes: an estimate of allocation of liability among PRPs; the probability that other PRPs, many of whom are large, solvent public companies, will fully pay the cost apportioned to them; currently available information from PRPs and/or federal or state environmental agencies concerning the scope of contamination and estimated remediation and consulting costs; and remediation alternatives), the Company has an accrual for indicated environmental liabilities of $6.3 million and $5.4 million at December 31, 2016 and at December 31, 2015, respectively. The Company expects to pay out substantially all of the amounts accrued for environmental liability over the next five years.

In connection with the sale of Kuhlman Electric Corporation ("Kuhlman Electric"), the Company agreed to indemnify the buyer and Kuhlman Electric for certain environmental liabilities, then unknown to the Company, relating to certain operations of Kuhlman Electric that pre-date the Company's 1999 acquisition of Kuhlman Electric. The Company previously settled or obtained dismissals of various lawsuits that were filed against Kuhlman Electric and others, including the Company, on behalf of plaintiffs alleging personal injury relating to alleged environmental contamination at its Crystal Springs, Mississippi plant. The Company filed a lawsuit against Kuhlman Electric and a related entity challenging the validity of the indemnity and the defendants filed counterclaims (the “Indemnity Action”) and a related lawsuit. On September 28, 2015, the parties entered into a confidential settlement agreement that, among other things, released and terminated all of BorgWarner’s indemnity obligations. Pursuant to the settlement agreement, the parties voluntarily dismissed the Indemnity Action on September 29, 2015 and the related lawsuit was dismissed on October 13, 2015. The Company continues to pursue insurance coverage actions for reimbursement of amounts it spent under the indemnity. The Company may in the future become subject to further legal proceedings.

Asbestos-related Liability

Like many other industrial companies that have historically operated in the United States, the Company, or parties that the Company is obligated to indemnify, continues to be named as one of many defendants in asbestos-related personal injury actions. We believe that the Company’s involvement is limited because these claims generally relate to a few types of automotive products that were manufactured over 30 years ago and contained encapsulated asbestos. The nature of the fibers, the encapsulation of the asbestos, and the manner of the products’ use all lead the Company to believe that these products were and are highly unlikely to cause harm. Furthermore, the useful life of nearly all of these products expired many years ago.

As of December 31, 2016 and 2015, the Company had approximately 9,400 and 10,100 pending asbestos-related claims, respectively. The decrease in the number of pending claims is primarily a result of the Company’s continued efforts to obtain dismissal of dormant claims. It is probable that additional asbestos-related claims will be asserted against the Company in the future. The Company vigorously defends against these claims, and has been successful in obtaining the dismissal of the majority of the claims asserted against it without any payment. The Company likewise expects that the vast majority of the pending asbestos-related claims in which it has been named (or has an obligation to indemnify a party which has been named), and asbestos-related claims that may be asserted in the future, will result in no payment being made by the Company or its insurers. In 2016, of the approximately 2,800 claims resolved, 352 (13%) resulted in payment being made to a claimant by or on behalf of the Company. In 2015, of the approximately 5,300 claims resolved, 349 (7%) resulted in payment being made to a claimant by or on behalf of the Company. The comparatively large number of claims resolved in 2015 reflected the Company’s efforts to dismiss large numbers of inactive or otherwise unmeritorious claims in order to be better positioned to evaluate remaining and future claims, while the smaller number of total claims resolved in 2016 reflects in part the outcome of those efforts.

Through December 31, 2016 and 2015, the Company had accrued and paid $477.7 million and $432.7 million in indemnity (including settlement payments) and defense costs in connection with asbestos-related claims, respectively. During 2016 and 2015, the Company had paid indemnity and related defense costs totaling $45.3 million and $54.7 million, respectively. These gross payments are before tax benefits and any insurance receipts. Indemnity and defense costs are incorporated into the Company's operating cash flows and will continue to be in the future.

The Company reviews, on an ongoing basis, its own experience in handling asbestos-related claims and trends affecting asbestos-related claims in the U.S. tort system generally, for the purposes of assessing the value of pending asbestos-related claims and the number and value of those that may be asserted in the future, as well as potential recoveries from the Company’s insurers with respect to such claims and defense costs. As of December 31, 2015, the Company also recorded an estimated liability of $108.5 million for asbestos-related claims asserted but not yet resolved and their associated defense costs. The Company further stated that, as of that date, its ultimate liability could not be reasonably estimated in excess of the amounts it had then accrued for claims that had been resolved and the estimated liability for claims asserted but not yet resolved and their associated defense costs. The inability to arrive at a reasonable estimate of the liability for potential asbestos-related claims that may be asserted in the future was based on, among other factors, the volatility in the number and type of asbestos claims that may be asserted, changes in asbestos-related litigation in the United States, the significant number of co-defendants that have filed for bankruptcy, the magnitude and timing of co-defendant bankruptcy trust payments, the inherent uncertainty of future disease incidence and claiming patterns against the Company, and the impact of tort reform legislation that may be enacted at the state or federal levels.

The Company has continued efforts to evaluate these factors and, if possible, arrive at a reasonable estimate of the number and value of potential future asbestos-related claims. In recent years, there have been more observable trends in the Company's claims data that would indicate that claiming patterns against the Company have stabilized. Concurrently, in recent years, the Company has made enhancements to the management and analysis of asbestos-related claims, including specifically: the engagement of new National Coordinating Counsel with significant asbestos litigation experience and a global presence, the engagement of several new local counsel panels; outsourcing administration and claims handling to a third party; implementing various improvements in the processing of asbestos-related claims so as to allow the Company's management to have greater real-time insight into the handling of individual asbestos-related claims; and increasing audits and compliance reviews of counsel handling asbestos-related claims. This process has as of the end of 2016 resulted in improvements in both the quantity and the quality of the information available to the Company's management respecting individual asbestos-related claims and their handling and disposition. This process has also resulted, in the Company's view, in an increased ability to reasonably forecast the aggregate number of potential future asbestos-related claims that may be asserted against the Company.

The Company has further engaged in a sustained effort to obtain the dismissal of thousands of dormant asbestos-related product liability claims, which has resulted in a reduction in the number of its pending claims by 48 percent over the past few years. Legislative and judicial developments affecting the U.S. tort system generally, including medical criteria legislation, procedural reforms, and docket control measures relating to so-called unimpaired claims, have also stabilized certain aspects of the Company's defense efforts respecting asbestos-related claims and allowed the Company greater insight into the number and value of potential future claims in recent years.

As part of its review and assessment of asbestos-related claims, the Company hired a third party consultant in the third quarter of 2016 to further assist in the analysis of potential future asbestos-related claims. The consultant's work utilized the updated data and analysis resulting from the Company's claim review process and included the development of an estimate of the potential value of asbestos-related claims asserted but not yet resolved as well as the number and potential value of asbestos-related claims not yet asserted. The Company determined based on the factors described above, including the analysis and input of the consultant, that its best estimate of the aggregate liability both for asbestos-related claims asserted but not yet resolved and potential asbestos-related claims not yet asserted, including an estimate for defense costs, is $879.3 million as of December 31, 2016. This liability reflects the actuarial central estimate, which is intended to represent an expected value of the most probable outcome. This estimate is not discounted to present value and includes an estimate of liability for potential future claims not yet asserted through December 31, 2059 with a runoff through 2067. The Company currently believes that December 31, 2067 is a reasonable assumption as to the last date on which it is likely to have resolved all asbestos-related claims, based on the nature and useful life of the Company's products and the likelihood of incidence of asbestos-related disease in the U.S. population generally.

In developing the estimate of liability for potential future claims, the third-party consultant projected a potential number of future claims based on the Company's historical claim filings and patterns and compared that to anticipated levels of unique plaintiff asbestos-related claims asserted in the U.S. tort system against all defendants. The consultant also utilized assumptions based on the Company's historical proportion of claims resolved without payment, historical settlement costs for those claims that result in a payment, and historical defense costs. The liabilities were then estimated by multiplying the pending and projected future claim filings by projected payments rates and average settlement amounts and then adding an estimate for defense costs.

The Company's estimate of the indemnity and defense costs for asbestos-related claims asserted but not yet resolved and potential claims not yet asserted is its best estimate of such costs. That estimate is subject to numerous uncertainties. These include future legislative or judicial changes affecting the U.S. tort system, bankruptcy proceedings involving one or more co-defendants, the impact and timing of payments from bankruptcy trusts that presently exist and those that may exist in the future, disease emergence and associated claim filings, the impact of future settlements or significant judgments, changes in the medical condition of claimants, changes in the treatment of asbestos-related disease, and any changes in settlement or defense strategies. The amount recorded at December 31, 2016 for asbestos-related claims is based on currently available information and assumptions that the Company believes are reasonable. Any amounts that are reasonably possible of occurring in excess of amounts recorded are believed to not be significant. The various assumptions utilized in arriving at the Company's estimate the number of future claims that may be asserted, the percentage of claims that may result in a payment, the average cost to resolve such claims, and potential defense costs - may also change over time, and the Company's actual liability for asbestos-related claims asserted but not yet resolved and those not yet asserted may be higher or lower than the estimate provided herein as a result of such changes.

The Company has certain insurance coverage applicable to asbestos-related claims. Prior to June 2004, the settlement and defense costs associated with all asbestos-related claims were paid by the Company's primary layer insurance carriers under a series of interim funding arrangements. In June 2004, primary layer insurance carriers notified the Company of the alleged exhaustion of their policy limits. A declaratory judgment action was filed in January 2004 in the Circuit Court of Cook County, Illinois by Continental Casualty Company and related companies against the Company and certain of its historical general liability insurers. The Cook County court has issued a number of interim rulings and discovery is continuing in this proceeding. The Company is vigorously pursuing the litigation against all carriers that are parties to it, as well as pursuing settlement discussions with its carriers where appropriate. The Company has entered into settlement agreements with certain of its insurance carriers, resolving such insurance carriers' coverage disputes through the carriers' agreement to pay specified amounts to the Company, either immediately or over a specified period.

Through December 31, 2016 and 2015, the Company had received $270.0 million and $263.9 million in cash and notes from insurers, respectively, on account of indemnity and defense costs respecting asbestos-related claims. The Company additionally recorded assets as of December 31, 2015 in the amount of (i) $168.8 million, representing the difference between the $432.7 million in defense and indemnity costs paid by the Company as of December 31, 2015 for asbestos-related claims and the $263.9 million received from insurers prior to that date, and (ii) $108.5 million, representing the then-estimated amount of asbestos-related claims asserted but not yet resolved for which the Company believes it has insurance coverage. In each case, such amounts were expected to be fully recovered.

The Company continues to have additional excess insurance coverage available for potential future asbestos-related claims. In connection with the Company's ongoing review of its asbestos-related claims, the Company also reviewed the amount of its potential insurance coverage for such claims, taking into account the remaining limits of such coverage, the number and amount of claims on our insurance from co-insured parties, ongoing litigation against the Company's insurers described above, potential remaining recoveries from insolvent insurers, the impact of previous insurance settlements, and coverage available from solvent insurers not party to the coverage litigation. Based on that review, the Company estimates as of December 31, 2016 that it has $386.4 million in aggregate insurance coverage available with respect to asbestos-related claims already satisfied by the Company but not yet reimbursed by the insurers, asbestos-related claims asserted but not yet resolved, and asbestos-related claims not yet asserted, in each case together with their associated defense costs. In each case, such amounts are expected to be fully recovered. However, the resolution of the insurance coverage litigation, and the number and amount of claims on our insurance from co-insured parties, may increase or decrease the amount of insurance coverage available to us for asbestos-related claims from the estimates discussed above.

As a result of all of the foregoing estimates of asbestos-related liabilities and related insurance assets, the Company in the fourth quarter of 2016 recorded a charge of $703.6 million before tax, or $440.6 million after tax, resulting from the difference in the total liability from what was previously accrued, consulting fees, less available insurance coverage.

The amounts recorded in the Consolidated Balance Sheets respecting asbestos-related claims are as follows:

(millions of dollars)	December 31, 2016	December 31, 2015
Assets:		
Non-current assets	$ 386.4	$ 277.3
Total insurance assets	$ 386.4	$ 277.3
Liabilities:		
Accounts payable and accrued expenses	$ 51.7	$ 47.7
Other non-current liabilities	827.6	60.8
Total accrued liabilities	$ 879.3	$ 108.5

NOTE 15 RESTRUCTURING

In the fourth quarter of 2013, the Company initiated actions primarily in the Drivetrain segment designed to improve future profitability and competitiveness. As a continuation of these actions, the Company finalized severance agreements with three labor unions at separate facilities in Western Europe for approximately 450 employees. The Company recorded restructuring expense related to these facilities of $8.2 million, $28.0 million and $61.8 million in the years ended December 31, 2016, 2015 and 2014, respectively. Included in this restructuring expense are employee termination benefits of $3.0 million, $20.1 million and $50.6 million, respectively, and other expense of $5.2 million, $7.9 million and $11.2 million, respectively.

In the second quarter of 2014, the Company initiated actions to improve the future profitability and competitiveness of Gustav Wahler GmbH u. Co. KG and its general partner ("Wahler"). The Company recorded restructuring expense related to Wahler of $9.6 million, $11.6 million and $6.5 million in the years ended December 31, 2016, 2015 and 2014, respectively. These restructuring expenses are primarily related to employee termination benefits. These termination benefits relate to approximately 70 employees in Germany and Brazil in 2015 and 95 employees in Germany, Brazil, China and the U.S. in 2014.

The Company recorded restructuring expense of $12.5 million and $12.0 million in the years ended December 31, 2015 and 2014, respectively, related to a global realignment plan intended to enhance treasury management flexibility by creating a legal entity structure that better aligns with the Company's business strategy.

In the fourth quarter of 2015, the Company acquired 100% of the equity interests in Remy and initiated actions to improve future profitability and competitiveness. The Company recorded restructuring expense of $6.1 million and $10.1 million in the years ended December 31, 2016 and 2015, respectively. Included in this restructuring expense is $3.1 million in the year ended December 31, 2016 related to winding down certain operations in North America. Additionally, the Company recorded employee termination benefits of $2.0 million and $10.1 million in the years ended December 31, 2016 and 2015, respectively, primarily related to contractually required severance associated with Remy executive officers and other employee termination benefits in Mexico. Cash payments for these restructuring activities are expected to be complete by the end of 2017.

Estimates of restructuring expense are based on information available at the time such charges are recorded. Due to the inherent uncertainty involved in estimating restructuring expenses, actual amounts paid for such activities may differ from amounts initially recorded. Accordingly, the Company may record revisions of previous estimates by adjusting previously established accruals.

The following table displays a rollforward of the severance accruals recorded within the Company's Consolidated Balance Sheet and the related cash flow activity for the years ended December 31, 2016 and 2015:

	Severance Accruals		
(millions of dollars)	Drivetrain	Engine	Total
Balance at January 1, 2015	$ 41.9	$ 2.0	$ 43.9
Acquisition*	0.4	—	0.4
Provision	32.6	11.3	43.9
Cash payments	(46.0)	(9.0)	(55.0)
Translation adjustment	(3.6)	(0.2)	(3.8)
Balance at December 31, 2015	25.3	4.1	29.4
Provision	5.0	5.6	10.6
Cash payments	(26.9)	(6.9)	(33.8)
Translation adjustment	0.3	(0.1)	0.2
Balance at December 31, 2016	$ 3.7	$ 2.7	$ 6.4

* Acquisition relates to the Company's 2015 purchase of Remy.

NOTE 16 LEASES AND COMMITMENTS

Certain assets are leased under long-term operating leases, including rent for facilities and one airplane. Most leases contain renewal options for various periods. Leases generally require the Company to pay for insurance, taxes and maintenance of the leased property. The Company leases other equipment such as vehicles and certain office equipment under short-term leases. Total rent expense was $38.2 million, $31.9 million and $33.9 million in the years ended December 31, 2016, 2015 and 2014, respectively. The Company does not have any material capital leases.

Future minimum operating lease payments at December 31, 2016 were as follows:

(millions of dollars)	
2017	$ 24.1
2018	8.0
2019	6.4
2020	6.5
2021	6.3
After 2021	3.8
Total minimum lease payments	$ 55.1

NOTE 17 EARNINGS PER SHARE

The Company presents both basic and diluted earnings per share of common stock ("EPS") amounts. Basic EPS is calculated by dividing net earnings attributable to BorgWarner Inc. by the weighted average shares of common stock outstanding during the reporting period. Diluted EPS is calculated by dividing net earnings attributable to BorgWarner Inc. by the weighted average shares of common stock and common equivalent stock outstanding during the reporting period.

The dilutive impact of stock-based compensation is calculated using the treasury stock method. The treasury stock method assumes that the Company uses the assumed proceeds from the exercise of awards to repurchase common stock at the average market price during the period. The assumed proceeds under the treasury stock method include the purchase price that the grantee will pay in the future, compensation cost for future service that the Company has not yet recognized and any windfall/(shortfall) tax benefits that would be credited/(debited) to capital in excess of par value when the award generates a tax deduction. Options are only dilutive when the average market price of the underlying common stock exceeds the exercise price of the options.

The following table reconciles the numerators and denominators used to calculate basic and diluted earnings per share of common stock:

(in millions except per share amounts)	Year Ended December 31, 2016	2015	2014
Basic earnings per share:			
Net earnings attributable to BorgWarner Inc.	$ 118.5	$ 609.7	$ 655.8
Weighted average shares of common stock outstanding	214.374	224.414	227.150
Basic earnings per share of common stock	$ 0.55	$ 2.72	$ 2.89
Diluted earnings per share:			
Net earnings attributable to BorgWarner Inc.	$ 118.5	$ 609.7	$ 655.8
Weighted average shares of common stock outstanding	214.374	224.414	227.150
Effect of stock-based compensation	0.954	1.234	1.774
Weighted average shares of common stock outstanding including dilutive shares	215.328	225.648	228.924
Diluted earnings per share of common stock	$ 0.55	$ 2.70	$ 2.86

NOTE 18 RECENT TRANSACTIONS

Divgi-Warner Private Limited.

In August 2016, the Company sold its 60% ownership interest in Divgi-Warner Private Limited ("Divgi-Warner") to the joint venture partner. This former joint venture was formed in 1995 to develop and manufacture transfer cases and synchronizer rings in India. As a result of the sale, the Company received cash proceeds of approximately $5.4 million, net of capital gains tax and cash divested, which is classified as an investing activity within the Condensed Consolidated Statement of Cash Flows. Furthermore, the Company wrote off noncontrolling interest of $4.8 million as result of the sale and recognized a negligible gain in the year ended December 31, 2016.

Remy International, Inc.

On November 10, 2015, the Company acquired 100% of the equity interests in Remy for $29.50 per share in cash. The Company also settled approximately $361 million of outstanding debt. Remy was a global market leading producer of rotating electrical components that had key technologies and operations in 10 countries. The cash paid, net of cash acquired, was $1,187.0 million.

The Remy acquisition is expected to strengthen the Company's position in the rapidly developing powertrain electrification trend, with a complementary combination of technologies and global operations.

The operating results and assets are reported within the Company's Drivetrain reporting segment as of the date of the acquisition. Remy's results from the date of acquisition through December 31, 2015 were insignificant to the Company's Consolidated Statement of Operations. The Company paid $1,187.0 million, which is recorded as an investing activity in the Company's Consolidated Statement of Cash Flows. Additionally, the Company assumed retirement-related liabilities of $31.1 million and assumed debt of $10.9 million, which are reflected in the supplemental cash flow information on the Company's Consolidated Statement of Cash Flows.

The following table summarizes the aggregated estimated fair value of the assets acquired and liabilities assumed on November 10, 2015, the date of acquisition:

(millions of dollars)		
Receivables, net	$	222.8
Inventories, net		195.3
Property, plant and equipment, net		196.6
Goodwill		572.6
Other intangible assets		412.6
Other assets and liabilities		(207.8)
Accounts payable and accrued expenses		(163.1)
Total consideration, net of cash acquired		1,229.0
Less: Assumed retirement-related liabilities		31.1
Less: Assumed debt		10.9
Cash paid, net of cash acquired	$	1,187.0

In connection with the acquisition, the Company capitalized $303.3 million for customer relationships, $46.4 million for developed technology, $59.0 million for the Delco Remy, Remy and Maval trade names, $3.8 million for in-process R&D and $0.1 million for leasehold interests. These intangible assets, excluding the indefinite-lived trade names, will be amortized over a period of 5 to 15 years. Various valuation techniques were used to determine the fair value of the intangible assets, with the primary techniques being forms of the income approach, specifically, the relief-from-royalty and excess earnings valuation methods, which use significant unobservable inputs, or Level 3 inputs, as defined by the fair value hierarchy. Under these valuation approaches, the Company is required to make estimates and assumptions about sales, operating margins, growth rates, royalty rates and discount rates based on budgets, business plans, economic projections, anticipated future cash flows and marketplace data. Due to the nature of the transaction, goodwill is not deductible for tax purposes.

In the fourth quarter of 2016, the Company finalized all purchase accounting adjustments related to the Remy acquisition. The Company has recorded fair value adjustments based on new information obtained during the measurement period primarily related to warranty, inventory, and deferred taxes. These adjustments have resulted in a decrease in goodwill of $12.1 million from the Company's initial estimate.

In October 2016, the Company entered into a definitive agreement to sell the light vehicle aftermarket business associated with the Company's acquisition of Remy for approximately $80 million in cash, subject to customary adjustment. The Remy light vehicle aftermarket business sells remanufactured and new starters, alternators and multi-line products to aftermarket customers, mainly retailers in North America, and warehouse distributors in North America, South America and Europe. The sale of this business allows the Company to focus on the rapidly developing original equipment manufacturer powertrain electrification trend. During the third quarter of 2016, the Company determined that assets and liabilities subject to the Remy light vehicle aftermarket business sale met the held for sale criteria and recorded an asset impairment expense of $106.5 million to adjust the net book value of this business to its fair value. During the fourth quarter of 2016, upon the closing of the transaction, the Company recorded an additional loss of $20.6 million related to the finalization of the sale proceeds, changes in working capital from the amounts originally estimated and costs associated with the winding down of an aftermarket related product line, resulting in a total loss on divestiture of $127.1 million in the year ended December 31, 2016. As a result of this transaction, total assets of $284.1 million including $94.7 million of inventory and $72.6 million of accounts receivable and total liabilities of $93.2 million were removed from the Company's consolidated balance sheet. The loss on divestiture is subject to final working capital adjustments, which is expected to be completed in the first quarter of 2017.

Supplemental Pro Forma Data (Unaudited)

The following supplemental pro forma information for the years ended December 31, 2015 and 2014 is based on the assumption that the acquisition of Remy occurred on January 1, 2014.

(millions of dollars, except per share amounts)	2015	2014
Net sales	$ 8,977.7	$ 9,487.4
Net earnings	$ 652.0	$ 653.9
Earnings per share:		
Basic	$ 2.91	$ 2.88
Diluted	$ 2.89	$ 2.86

The 2014 pro forma results include after-tax adjustments of $23.2 million of investment banker and other fees and accelerated stock compensation incurred by the Company and Remy related to the acquisition; $12.2 million net decrease in expense related to fair value adjustments; and $3.0 million net decrease in interest expense.

These pro forma results of operations have been prepared for comparative purposes only, and do not purport to be indicative of the results of operations that actually would have resulted had the acquisition occurred on the date indicated or that may result in the future.

BERU Diesel Start Systems Pvt. Ltd.

In January 2015, the Company completed the purchase of the remaining 51% of BERU Diesel by acquiring the shares of its former joint venture partner. The former joint venture was formed in 1996 to develop and manufacture glow plugs in India. After this transaction, the Company owns 100% of the entity. The cash paid, net of cash acquired, was $12.6 million (783.1 million Indian rupees).

The operating results are reported within the Company's Engine reporting segment. The Company paid $12.6 million, which is recorded as an investing activity in the Company's Consolidated Statement of Cash Flows. As a result of this transaction, the Company recorded a $10.8 million gain on the previously held equity interest in this joint venture. Additionally, the Company acquired assets of $16.0 million, including $11.2 million in definite-lived intangible assets, and assumed liabilities of $4.6 million. The Company also recorded $13.9 million of goodwill, which is expected to be non-deductible for tax purposes.

Gustav Wahler GmbH u. Co KG

On February 28, 2014, the Company acquired 100% of the equity interests in Wahler. Wahler was a producer of exhaust gas recirculation ("EGR") valves, EGR tubes and thermostats, and had operations in Germany, Brazil, the U.S., China and Slovakia. The cash paid, net of cash acquired was $110.5 million (80.1 million Euro).

The Wahler acquisition strengthens the Company's strategic position as a producer of complete EGR systems and creates additional market opportunities in both passenger and commercial vehicle applications.

The operating results and assets are reported within the Company's Engine reporting segment as of the date of the acquisition. The Company paid $110.5 million, which is recorded as an investing activity in the Company's Consolidated Statement of Cash Flows. Additionally, the Company assumed retirement-related liabilities of $3.2 million and assumed debt of $40.3 million, which are reflected in the supplemental cash flow information on the Company's Consolidated Statement of Cash Flows.

The following table summarizes the aggregated estimated fair value of the assets acquired and liabilities assumed on February 28, 2014, the date of acquisition:

(millions of dollars)		
Receivables, net	$	52.4
Inventories, net		46.8
Property, plant and equipment, net		55.3
Goodwill		74.6
Other intangible assets		42.7
Other assets and liabilities		(47.4)
Accounts payable and accrued expenses		(70.4)
Total consideration, net of cash acquired		154.0
Less: Assumed retirement-related liabilities		3.2
Less: Assumed debt		40.3
Cash paid, net of cash acquired	$	110.5

In connection with the acquisition, the Company capitalized $24.9 million for customer relationships, $10.2 million for know-how, $4.1 million for patented technology and $3.5 million for the Wahler trade name. These intangible assets will be amortized over a period of 5 to 15 years. The income approach was used to determine the fair value of all intangible assets. Additionally, $56.9 million in goodwill is non-deductible for tax purposes.

NOTE 19 REPORTING SEGMENTS AND RELATED INFORMATION

The Company's business is comprised of two reporting segments: Engine and Drivetrain. These segments are strategic business groups, which are managed separately as each represents a specific grouping of related automotive components and systems.

The Company allocates resources to each segment based upon the projected after-tax return on invested capital ("ROIC") of its business initiatives. ROIC is comprised of Adjusted EBIT after deducting notional taxes compared to the projected average capital investment required. Adjusted EBIT is comprised of earnings before interest, income taxes and noncontrolling interest ("EBIT") adjusted for restructuring, goodwill impairment charges, affiliates' earnings and other items not reflective of on-going operating income or loss.

Adjusted EBIT is the measure of segment income or loss used by the Company. The Company believes Adjusted EBIT is most reflective of the operational profitability or loss of our reporting segments. The following tables show segment information and Adjusted EBIT for the Company's reporting segments.

2016 Segment information

	Net sales					
(millions of dollars)	Customers	Inter-segment	Net	Year-end assets	Depreciation/ amortization	Long-lived asset expenditures (b)
Engine	$ 5,547.3	$ 42.8	$ 5,590.1	$ 4,134.6	$ 211.9	$ 298.7
Drivetrain	3,523.7	—	3,523.7	3,212.4	154.5	182.8
Inter-segment eliminations	—	(42.8)	(42.8)	—	—	—
Total	9,071.0	—	9,071.0	7,347.0	366.4	481.5
Corporate (a)	—	—	—	1,487.7	25.0	19.1
Consolidated	$ 9,071.0	$ —	$ 9,071.0	$ 8,834.7	$ 391.4	$ 500.6

2015 Segment information

	Net sales					
(millions of dollars)	Customers	Inter-segment	Net	Year-end assets	Depreciation/ amortization	Long-lived asset expenditures (b)
Engine	$ 5,466.5	$ 33.5	$ 5,500.0	$ 4,017.8	$ 200.2	$ 332.4
Drivetrain	2,556.7	—	2,556.7	3,685.1	97.0	221.8
Inter-segment eliminations	—	(33.5)	(33.5)	—	—	—
Total	8,023.2	—	8,023.2	7,702.9	297.2	554.2
Corporate (a)	—	—	—	1,122.8	23.0	23.1
Consolidated	$ 8,023.2	$ —	$ 8,023.2	$ 8,825.7	$ 320.2	$ 577.3

2014 Segment information

	Net sales					
(millions of dollars)	Customers	Inter-segment	Net	Year-end assets	Depreciation/ amortization	Long-lived asset expenditures (b)
Engine	$ 5,673.7	$ 32.2	$ 5,705.9	$ 3,936.2	$ 215.3	$ 349.8
Drivetrain	2,631.4	—	2,631.4	1,783.5	92.8	189.2
Inter-segment eliminations	—	(32.2)	(32.2)	—	—	—
Total	8,305.1	—	8,305.1	5,719.7	308.1	539.0
Corporate (a)	—	—	—	1,505.5	22.3	24.0
Consolidated	$ 8,305.1	$ —	$ 8,305.1	$ 7,225.2	$ 330.4	$ 563.0

(a) Corporate assets include investments and other long-term receivables and deferred income taxes.
(b) Long-lived asset expenditures include capital expenditures and tooling outlays.

Adjusted earnings before interest, income taxes and noncontrolling interest ("Adjusted EBIT")

	Year Ended December 31,		
(millions of dollars)	2016	2015	2014
Engine	$ 934.1	$ 900.7	$ 924.0
Drivetrain	354.5	294.6	303.3
Adjusted EBIT	1,288.6	1,195.3	1,227.3
Asbestos-related charge	703.6	—	—
Loss on divestiture	127.1	—	—
Restructuring expense	26.9	65.7	90.8
Merger and acquisition expense	23.7	21.8	—
Intangible asset impairment	12.6	—	10.3
Contract expiration gain	(6.2)	—	—
Pension settlement loss	—	25.7	3.1
Gain on previously held equity interest	—	(10.8)	—
Corporate, including equity in affiliates' earnings and stock-based compensation	132.1	113.2	112.1
Interest income	(6.3)	(7.5)	(5.5)
Interest expense and finance charges	84.6	60.4	36.4
Earnings before income taxes and noncontrolling interest	190.5	926.8	980.1
Provision for income taxes	30.3	280.4	292.6
Net earnings	160.2	646.4	687.5
Net earnings attributable to the noncontrolling interest, net of tax	41.7	36.7	31.7
Net earnings attributable to BorgWarner Inc.	$ 118.5	$ 609.7	$ 655.8

Geographic Information

Outside the U.S., only Germany, China, South Korea, Mexico and Hungary exceeded 5% of consolidated net sales during the year ended December 31, 2016, attributing sales to the location of production rather than the location of the customer. Also, the Company's 50% equity investment in NSK-Warner (see the Balance Sheet Information footnote to the Consolidated Financial Statements) of $172.9 million, $158.7 million and $143.8 million at December 31, 2016, 2015 and 2014, respectively, is excluded from the definition of long-lived assets, as are goodwill and certain other non-current assets.

	Net sales			Long-lived assets		
(millions of dollars)	2016	2015	2014	2016	2015	2014
United States	$ 2,236.0	$ 1,985.1	$ 2,008.1	$ 799.3	$ 800.5	$ 586.2
Europe:						
Germany	1,735.1	1,857.1	2,145.6	370.3	380.9	413.6
Hungary	541.1	500.5	518.1	122.2	112.4	73.2
France	305.2	339.2	405.2	39.5	41.4	42.5
Other Europe	888.7	921.8	1,097.3	298.2	276.6	258.8
Total Europe	3,470.1	3,618.6	4,166.2	830.2	811.3	788.1
China	1,218.0	1,009.0	885.1	384.6	355.8	299.9
South Korea	948.2	741.7	623.0	208.0	218.6	185.9
Mexico	805.6	312.7	201.4	136.2	132.8	96.6
Other foreign	393.1	356.1	421.3	143.5	129.1	137.2
Total	$ 9,071.0	$ 8,023.2	$ 8,305.1	$ 2,501.8	$ 2,448.1	$ 2,093.9

Sales to Major Customers

Consolidated net sales to Ford (including its subsidiaries) were approximately 15%, 15%, and 13% for the years ended December 31, 2016, 2015 and 2014, respectively; and to Volkswagen (including its subsidiaries) were approximately 13%, 15% and 17% for the years ended December 31, 2016, 2015 and 2014, respectively. Both of the Company's reporting segments had significant sales to Volkswagen and Ford in 2016, 2015 and 2014. Such sales consisted of a variety of products to a variety of customer locations and regions. No other single customer accounted for more than 10% of consolidated net sales in any of the years presented.

Sales by Product Line

Sales of turbochargers for light vehicles represented approximately 28%, 31% and 28% of total net sales for the years ended December 31, 2016, 2015 and 2014, respectively. The Company currently supplies light vehicle turbochargers to many OEMs including BMW, Daimler, Fiat Chrysler Automobiles, Ford, General Motors, Great Wall, Hyundai, Renault, Volkswagen and Volvo. No other single product line accounted for more than 10% of consolidated net sales in any of the years presented.

Interim Financial Information (Unaudited)

(millions of dollars, except per share amounts)	2016					2015				
Quarter ended	Mar-31	Jun-30	Sep-30	Dec-31	Year	Mar-31	Jun-30	Sep-30	Dec-31	Year
Net sales	$ 2,268.6	$ 2,329.2	$ 2,214.2	$ 2,259.0	$ 9,071.0	$ 1,984.2	$ 2,031.9	$ 1,884.0	$ 2,123.1	$ 8,023.2
Cost of sales	1,804.3	1,832.5	1,743.1	1,758.0	7,137.9	1,555.2	1,602.9	1,485.8	1,676.2	6,320.1
Gross profit	464.3	496.7	471.1	501.0	1,933.1	429.0	429.0	398.2	446.9	1,703.1
Selling, general and administrative expenses	188.4	202.3	209.7	217.1	817.5	168.2	167.4	148.0	178.4	662.0
Other expense, net	11.7	25.0	111.1	741.9	889.7	1.2	19.1	13.1	68.0	101.4
Operating income (loss)	264.2	269.4	150.3	(458.0)	225.9	259.6	242.5	237.1	200.5	939.7
Equity in affiliates’ earnings, net of tax	(9.1)	(10.1)	(12.4)	(11.3)	(42.9)	(8.5)	(11.1)	(8.7)	(11.7)	(40.0)
Interest income	(1.6)	(1.5)	(1.6)	(1.6)	(6.3)	(1.7)	(1.6)	(2.0)	(2.2)	(7.5)
Interest expense and finance charges	21.3	21.4	22.4	19.5	84.6	10.0	17.6	15.0	17.8	60.4
Earnings (loss) before income taxes and noncontrolling interest	253.6	259.6	141.9	(464.6)	190.5	259.8	237.6	232.8	196.6	926.8
Provision (benefit) for income taxes	80.4	84.2	48.8	(183.1)	30.3	72.1	80.2	66.9	61.2	280.4
Net earnings (loss)	173.2	175.4	93.1	(281.5)	160.2	187.7	157.4	165.9	135.4	646.4
Net earnings attributable to the noncontrolling interest, net of tax	9.1	11.0	9.8	11.8	41.7	8.8	9.3	8.5	10.1	36.7
Net earnings (loss) attributable to BorgWarner Inc. (a)	$ 164.1	$ 164.4	$ 83.3	$ (293.3)	$ 118.5	$ 178.9	$ 148.1	$ 157.4	$ 125.3	$ 609.7
Earnings per share — basic	$ 0.75	$ 0.76	$ 0.39	$ (1.39)	$ 0.55	$ 0.79	$ 0.66	$ 0.70	$ 0.57	$ 2.72
Earnings per share — diluted	$ 0.75	$ 0.76	$ 0.39	$ (1.39)	$ 0.55	$ 0.79	$ 0.65	$ 0.70	$ 0.56	$ 2.70

(a) The Company's results were impacted by the following:

- **Quarter ended December 31, 2016:** The Company recorded an asbestos-related charge of $703.6 million representing the difference in the total liability from what was previously accrued, consulting fees, less available insurance coverage, and an intangible asset impairment loss of $12.6 million related to the Engine segment Etatech’s ECCOS intellectual technology. Additionally, the Company recorded an incremental loss on divestiture of $20.6 million related to the sale of Remy light vehicle aftermarket business. The Company also recorded merger and acquisition expense of $4.8 million primarily related to the Remy transaction. The Company recorded tax benefits of $263.0 million related to asbestos-related charge, $4.4 million related to intangible asset loss, and $4.9 million related to other one-time tax adjustments. The Company also recorded a tax expense of $4.9 million related to the sale of the Remy light vehicle aftermarket business and the reversal of the associated deferred tax balances.

- **Quarter ended September 30, 2016:** The Company recorded an asset impairment expense of $106.5 million to adjust the net book value of the Remy light vehicle aftermarket business to fair value, based on the anticipated sale price. Additionally, the Company recorded restructuring expense of $1.3 million related to Drivetrain and Engine segment actions designed to improve future profitability and competitiveness. The Company also recorded merger and acquisition expense of $5.9 million primarily related to the Remy transaction. The Company recorded tax benefits of $27.6 million related to asset impairment expense, $2.4 million related to other one-time tax adjustments, $0.5 million related to restructuring expense, and $0.4 million related to a gain associated with the release of certain Remy light vehicle aftermarket liabilities due to the expiration of a customer contract.
- **Quarter ended June 30, 2016:** The Company recorded restructuring expense of $19.2 million related to Drivetrain and Engine segment actions designed to improve future profitability and competitiveness. The Company also recorded merger and acquisition expense of $7.2 million primarily related to the Remy transaction. The Company recorded tax benefits of $4.4 million related to restructuring expense and $0.3 million related to other one-time tax adjustments, as well as a tax expense of $2.6 million related to a gain associated with the release of certain Remy light vehicle aftermarket liabilities due to the expiration of a customer contract.
- **Quarter ended March 31, 2016:** The Company recorded restructuring expense of $6.4 million related to Drivetrain and Engine segment actions designed to improve future profitability and competitiveness. The Company also recorded merger and acquisition expense of $5.8 million primarily related to the Remy transaction. The Company recorded tax benefits of $1.0 million related to restructuring expense and $1.0 million related to other one-time tax adjustments.
- **Quarter ended December 31, 2015:** The Company recorded restructuring expense of $24.4 million related to Drivetrain and Engine segment actions designed to improve future profitability and competitiveness. The Company also incurred a non-cash settlement loss of $25.7 million related to a lump-sum pension de-risking disbursement made to an insurance company to unconditionally and irrevocably guarantee all future payments to certain participants that were receiving payments from the U.S. pension plan. Furthermore, the Company recorded merger and acquisition expense of $17.9 million primarily related to the Remy transaction. The Company recorded tax benefits of $9.0 million related to the pension settlement loss, $7.7 million primarily related to foreign tax incentives and tax settlements, $3.8 million related to merger and acquisition expense, partially offset by a tax expense of $0.4 million related to restructuring expense.
- **Quarter ended September 30, 2015:** The Company recorded restructuring expense of $6.3 million related to Drivetrain and Engine segment actions designed to improve future profitability and competitiveness. Additionally, the Company recorded $3.0 million of restructuring expense related to a global realignment plan intended to enhance treasury management flexibility by creating a legal entity structure that better aligns with the Company's business strategy. The Company also recorded merger and acquisition expense of $3.9 million primarily related to the Remy transaction. The Company recorded tax benefits of $4.5 million related to a global realignment plan, $0.7 million related to restructuring expense and $0.4 million primarily related to foreign tax incentives.
- **Quarter ended June 30, 2015:** The Company recorded restructuring expense of $10.5 million related to Drivetrain and Engine segment actions designed to improve future profitability and competitiveness. Additionally, the Company recorded $9.4 million of restructuring expense related to a global realignment plan intended to enhance treasury management flexibility by creating a legal entity structure that better aligns with the Company's business strategy. The Company recorded tax expense of $10.3 million related to a global realignment plan, partially offset by tax benefits of $3.9 million related to tax settlements, $2.2 million related to restructuring expense and $1.3 million primarily related to foreign tax incentives.
- **Quarter ended March 31, 2015:** The Company recorded restructuring expense of $9.4 million related to Drivetrain and Engine segment actions designed to improve future profitability and competitiveness. Additionally, the Company recorded $2.7 million of restructuring expense related to a global realignment plan intended to enhance treasury management flexibility by creating a legal entity structure that better aligns with the Company's business strategy. The Company also recorded a $10.8 million gain on the previously held equity interest in BERU Diesel as a result of purchasing the remaining 51% of this joint venture. The Company recorded tax benefits of $2.4 million primarily related to foreign tax incentives and $1.2 million related to restructuring expense.

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

Not applicable.

Item 9A. Controls and Procedures

Disclosure Controls and Procedures

A control system, no matter how well conceived and operated, can provide only reasonable, not absolute, assurance that the objectives of the control system are met. Further, the design of a control system must reflect the fact that there are resource constraints and the benefits of controls must be considered relative to costs. Because of the inherent limitations in all control systems, no evaluation of controls can provide absolute assurance that all control issues and instances of fraud, if any, within the company have been detected. Because of the inherent limitations in a cost-effective control system, misstatements due to error or fraud may occur and not be detected. However, our disclosure controls and procedures are designed to provide reasonable assurance of achieving their objectives.

The Company has adopted and maintains disclosure controls and procedures that are designed to provide reasonable assurance that information required to be disclosed in the reports filed or submitted under the Exchange Act, such as this Form 10-K, is collected, recorded, processed, summarized and reported within the time periods specified in the rules and forms of the Securities and Exchange Commission. The Company's disclosure controls and procedures are also designed to ensure that such information is accumulated and communicated to management to allow timely decisions regarding required disclosure. As required under Exchange Act Rule 13a-15, the Company's management, including the Chief Executive Officer and Chief Financial Officer, has conducted an evaluation of the effectiveness of disclosure controls and procedures as of the end of the period covered by this report. Based on that evaluation, the Chief Executive Officer and Chief Financial Officer concluded that the disclosure controls and procedures are effective.

Management's Report on Internal Control Over Financial Reporting

The Company's management is responsible for establishing and maintaining adequate internal control over financial reporting, as defined in Exchange Act Rule 13a-15(f). Management conducted an assessment of the Company's internal control over financial reporting based on the framework and criteria established by the Committee of Sponsoring Organizations of the Treadway Commission in Internal Control - Integrated Framework (2013). Based on the assessment, management concluded that, as of December 31, 2016, the Company's internal control over financial reporting is effective based on those criteria.

PricewaterhouseCoopers LLP, an independent registered public accounting firm, has audited the Company's consolidated financial statements and the effectiveness of internal controls over financial reporting as of December 31, 2016 as stated in its report included herein.

Changes in Internal Control

There have been no changes in internal controls over the financial reporting that occurred during the most recent fiscal quarter that have materially affected, or are reasonably likely to materially affect our internal controls over financial reporting.

Item 9B. Other Information

Not applicable.

PART III

Item 10. Directors, Executive Officers and Corporate Governance

Information with respect to directors, executive officers and corporate governance that appears in the Company's proxy statement for its 2017 Annual Meeting of Stockholders under the captions “Election of Directors,” “Information on Nominees for Directors and Continuing Directors,” “Board of Directors and Its Committees,” “Section 16(a) Beneficial Ownership Reporting Compliance,” “Code of Ethics,” and “Compensation Committee Report” is incorporated herein by this reference and made a part of this report.

Item 11. Executive Compensation

Information with respect to director and executive compensation that appears in the Company's proxy statement for its 2017 Annual Meeting of Stockholders under the captions “Director Compensation,” “Compensation Committee Interlocks and Insider Participation,” “Executive Compensation,” “Compensation Discussion and Analysis,” “Restricted Stock,” “Long Term Equity Incentives,” and “Change of Control Agreements” is incorporated herein by this reference and made a part of this report.

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

Information with respect to security ownership and certain beneficial owners and management and related stockholders matters that appears in the Company's proxy statement for its 2017 Annual Meeting of Stockholders under the caption “Security Ownership of Certain Beneficial Owners and Management” is incorporated herein by this reference and made a part of this report.

For information regarding the Company's equity compensation plans, see Item 5 “Market for the Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities” in this Annual Report on Form 10-K.

Item 13. Certain Relationships and Related Transactions and Director Independence

Information with respect to certain relationships and related transactions and director independence that appears in the Company's proxy statement for its 2017 Annual Meeting of Stockholders under the caption “Board of Directors and Its Committees” is incorporated herein by this reference and made a part of this report.

Item 14. Principal Accountant Fees and Services

Information with respect to principal accountant fees and services that appears in the Company's proxy statement for its 2017 Annual Meeting of Stockholders under the caption “Fees Paid to PwC” is incorporated herein by this reference and made a part of this report.

PART IV

Item 15. Exhibits and Financial Statement Schedules

The information required by this Section (a)(3) of Item 15 is set forth on the Exhibit Index that follows the Signatures page of this Form 10-K. The information required by this Section (a)(1) of Item 15 is set forth above in Item 8, Financial Statements and Supplementary Data. All financial statement schedules have been omitted, since the required information is not applicable or is not present in amounts sufficient to require submission of the schedule, or because the information required is included in the consolidated financial statements and notes thereto included in this Form 10-K.

Item 16. Form 10-K Summary

Not applicable.

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.

BORGWARNER INC.

By: /s/ James R. Verrier
James R. Verrier
President and Chief Executive Officer

Date: February 9, 2017

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 indicated on the 9th day of February, 2017.

Signature	Title
/s/ James R. Verrier James R. Verrier	President and Chief Executive Officer (Principal Executive Officer) and Director
/s/ Ronald T. Hundzinski Ronald T. Hundzinski	Vice President and Chief Financial Officer (Principal Financial Officer)
/s/ Anthony D. Hensel Anthony D. Hensel	Vice President and Controller (Principal Accounting Officer)
/s/ Jan Carlson Jan Carlson	Director
/s/ Dennis C. Cuneo Dennis C. Cuneo	Director
/s/ Michael S. Hanley Michael S. Hanley	Director
/s/ John R. McKernan, Jr. John R. McKernan, Jr.	Director
/s/ Alexis P. Michas Alexis P. Michas	Director and Non-Executive Chairman
/s/ Ernest J. Novak, Jr. Ernest J. Novak, Jr.	Director
/s/ Vicki L. Sato Vicki L. Sato	Director
/s/ Richard O. Schaum Richard O. Schaum	Director
/s/ Thomas T. Stallkamp Thomas T. Stallkamp	Director

EXHIBIT INDEX

Exhibit Number	Description
3.1	Restated Certificate of Incorporation of the Company (incorporated by reference to Exhibit 3.1/4.1 to the Company's Quarterly Report on Form 10-Q for the quarter ended March 31, 2016).
3.2	Amended and Restated By-Laws of the Company, as amended (incorporated by reference to Exhibit 3.1/4.1 to the Company's Quarterly Report on Form 10-Q for the quarter ended September 30, 2016).
4.1	Indenture, dated as of February 15, 1999 between Borg-Warner Automotive, Inc. and The Bank of New York Mellon Trust Company, N.A. (successor in interest to The First National Bank of Chicago), as trustee (incorporated by reference to Exhibit No. 4.5 to the Company's Registration Statement No. 333-172198 filed on February 11, 2011).
4.2	Indenture, dated as of September 23, 1999 between Borg-Warner Automotive, Inc. and The Bank of New York Mellon Trust Company, N.A. (successor in interest to Chase Manhattan Trust Company, National Association), as trustee (incorporated by reference to Exhibit No. 4.6 to the Company's Registration Statement 333-172198 filed on February 11, 2011).
4.3	Third Supplemental Indenture dated as of September 16, 2010 between the Company and The Bank of New York Mellon Trust Company, N.A., as the indenture trustee (incorporated by reference to Exhibit 4.9 to the Company's Registration Statement 333-172198 filed on February 11, 2011).
4.4	Fourth Supplemental Indenture dated as of March 16, 2015, between the Company and The Bank of New York Mellon Trust Company, N.A., as the indenture trustee (incorporated by reference to Exhibit 4.2 to the Company's Current Report on Form 8-K filed March 16, 2015).
4.5	Fifth Supplemental Indenture dated as of November 6, 2015, between the Company and Deutsche Bank Trust Company Americas, as the indenture trustee (incorporated by reference to Exhibit 4.2 to the Company's Current Report on Form 8-K filed November 6, 2015).
10.1	Second Amended and Restated Credit Agreement dated as of June 30, 2014, among the Company, as borrower, the Administrative Agent named therein, and the Lenders that are parties thereto (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed June 30, 2014).
10.2	Amendment No. 1 to Credit Agreement dated as of October 23, 2014, to the Second Amended and Restated Credit Agreement dated as of June 30, 2014 among the Company, as borrower, the Administrative Agent named therein, and the Lenders that are parties thereto (incorporated by reference to Exhibit 10.1 to the Company's Annual Report on Form 10-K for the year ended December 31, 2015).
10.3	Amendment No. 2 to Credit Agreement dated October 27, 2015 to the Second Amended and Restated Credit Agreement dated as of June 30, 2014 among the Company, as borrower, the Administrative Agent named therein, and the Lenders that are parties thereto (incorporated by reference to Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q for the quarter ended September 30, 2015).
†10.4	BorgWarner Inc. 2014 Stock Incentive Plan (incorporated by reference to Annex A to the Company's Definitive Proxy Statement filed March 21, 2014).
†10.5	First Amendment to the BorgWarner Inc. 2014 Stock Incentive Plan (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on May 2, 2016).

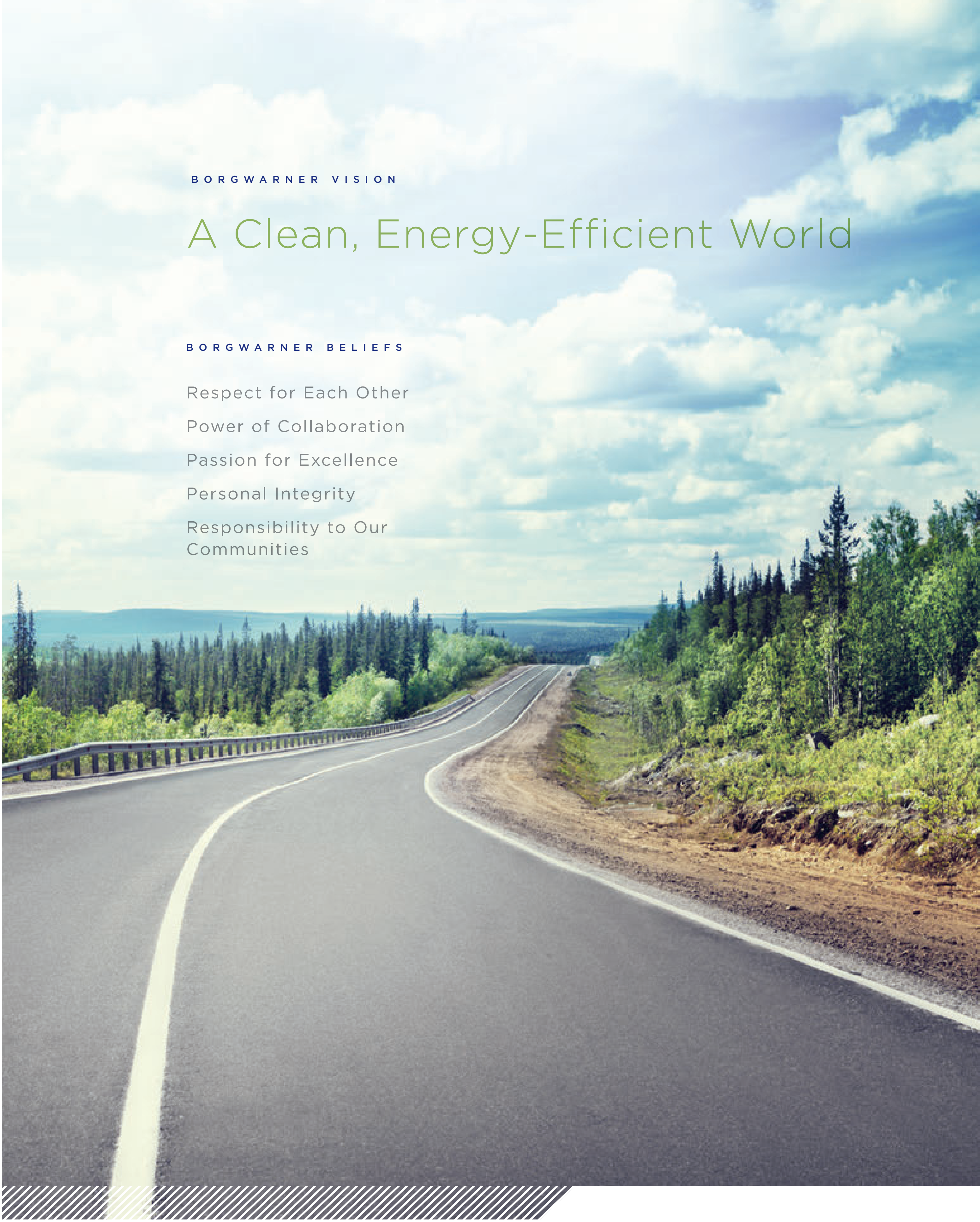
Exhibit Number	Description
†10.6	Form of February 2016 RRG BorgWarner Inc. 2014 Stock Incentive Plan Performance Share Award Agreement (incorporated by reference to Exhibit 10.1 to the Company’s Quarterly Report on Form 10-Q for the quarter ended March 31, 2016).
†10.7	Form of February 2016 BorgWarner Inc. 2014 Stock Incentive Plan Performance Share Award Agreement (incorporated by reference to Exhibit 10.2 to the Company’s Quarterly Report on Form 10-Q for the quarter ended March 31, 2016).
†10.8	Form of April 2015 BorgWarner Inc. 2014 Stock Incentive Plan Restricted Stock Agreement for Employees (incorporated by reference to Exhibit 10.2 to the Company’s Quarterly Report on Form 10-Q for the quarter ended June 30, 2015).
†10.9	Form of April 2015 BorgWarner Inc. 2014 Stock Incentive Plan Stock Units Award Agreement for Non-U.S. Employees (incorporated by reference to Exhibit 10.1 to the Company’s Quarterly Report on Form 10-Q for the quarter ended June 30, 2015).
†10.10	Form of BorgWarner Inc. 2014 Stock Incentive Plan Restricted Stock Agreement for Employees (incorporated by reference to Exhibit 10.1 to the Company’s Quarterly Report on Form 10-Q for the quarter ended March 31, 2015).
†10.11	Form of BorgWarner Inc. 2014 Stock Incentive Plan Performance Share Award Agreement (incorporated by reference to Exhibit 10.2 to the Company’s Quarterly Report on Form 10-Q for the quarter ended March 31, 2015).
†10.12	Form of BorgWarner Inc. 2014 Stock Incentive Plan Stock Units Award Agreement -- Non-U.S. Employees (incorporated by reference to Exhibit 10.3 to the Company’s Quarterly Report on Form 10-Q for the quarter ended March 31, 2015).
†10.13	Form of 2014 BorgWarner Inc. 2014 Stock Incentive Plan Restricted Stock Agreement for Non-Employee Directors (incorporated by reference to Exhibit 10.4 of the Company’s Quarterly Report on Form 10-Q for the quarter ended June 30, 2014).
†10.14	Form of 2014 BorgWarner Inc. 2014 Stock Incentive Plan Stock Units Award Agreement for Non-U.S. Directors (incorporated by reference to Exhibit 10.5 of the Company’s Quarterly Report on Form 10-Q for the quarter ended June 30, 2014).
†10.15	BorgWarner Inc. Amended and Restated 2004 Stock Incentive Plan (incorporated by reference to Exhibit 10.7 to the Company's Annual Report on Form 10-K for the year ended December 31, 2014).
†10.16	First Amendment to the BorgWarner Inc. Amended and Restated 2004 Stock Incentive Plan (as amended and restated effective April 29, 2009) (incorporated by reference to Exhibit 10.8 to the Company's Annual Report on Form 10-K for the year ended December 31, 2013).
†10.17	Second Amendment dated as of July 26, 2011, to the BorgWarner Inc. Amended and Restated 2004 Stock Incentive Plan (incorporated by reference to Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q for the quarter ended September 30, 2016).
†10.18	Form of 2014 BorgWarner Inc. Amended and Restated 2004 Stock Incentive Plan Performance Share Award Agreement (incorporated by reference to Exhibit 10.6 of the Company's Quarterly Report on Form 10-Q for the quarter ended June 30, 2014).

Exhibit Number	Description
†10.19	Form of BorgWarner Inc. Amended and Restated 2004 Stock Incentive Plan Restricted Stock Agreement for Employees (incorporated by reference to Exhibit 10.13 to the Company's Annual Report on Form 10-K for the year ended December 31, 2012).
†10.20	Form of 2014 BorgWarner Inc. Amended and Restated 2004 Stock Incentive Plan Stock Units Award Agreement Non-U.S. Employees (incorporated by reference to Exhibit 10.3 of the Company's Quarterly Report on Form 10-Q for the quarter ended June 30, 2014).
†10.21	Form of BorgWarner Inc. 2004 Stock Incentive Plan Non-Qualified Stock Option Award Agreement (incorporated by reference to Exhibit 10.15 to the Company's Annual Report on Form 10-K for the year ended December 31, 2012).
†10.22	Amended and Restated Executive Incentive Plan as amended, restated, and renamed effective April 26, 2015 (incorporated by reference to Appendix A to the Company's Definitive Proxy Statement filed March 20, 2015).
†10.23	Amended and Restated BorgWarner Inc. Management Incentive Bonus Plan effective as of December 31, 2008 (incorporated by reference to Exhibit 10.18 to the Company's Annual Report on Form 10-K for the year ended December 31, 2013).
†10.24	BorgWarner Inc. Retirement Savings Excess Benefit Plan amended and restated effective January 1, 2009 (incorporated by reference to Exhibit 10.19 to the Company's Annual Report on Form 10-K for the year ended December 31, 2013).
†10.25	Form of Amendment dated December 10, 2012 to the BorgWarner Inc. Retirement Savings Excess Benefit Plan (incorporated by reference to Exhibit 10.21 to the Company's Annual Report on Form 10-K for the year ended December 31, 2012).
†10.26	BorgWarner Inc. Board of Directors Deferred Compensation Plan as amended and restated effective January 1, 2009 (incorporated by reference to Exhibit 10.21 to the Company's Annual Report on Form 10-K for the year ended December 31, 2013).
†10.27	First Amendment dated as of November 22, 2010 to BorgWarner Inc. Board of Directors Deferred Compensation Plan (incorporated by reference to Exhibit 10.22 to the Company's Annual Report on Form 10-K for the year ended December 31, 2013).
†10.28	Second Amendment dated as of August 1, 2016 to BorgWarner Inc. Board of Directors Deferred Compensation Plan.*
†10.29	Form of Amended and Restated Change of Control Employment Agreement for Executive Officers (incorporated by reference to Exhibit 10.23 to the Company's Annual Report on Form 10-K for the year ended December 31, 2013).
†10.30	Form of Amended and Restated Change of Control Employment Agreement for Executive Officers (effective 2009) (incorporated by reference to Exhibit 10.24 to the Company's Annual Report on Form 10-K for the year ended December 31, 2013).
†10.31	BorgWarner Inc. 2004 Deferred Compensation Plan as amended and restated effective January 1, 2009 (incorporated by reference to Exhibit 10.25 to the Company's Annual Report on Form 10-K for the year ended December 31, 2013).

Exhibit Number	Description
10.32	Distribution and Indemnity Agreement dated January 27, 1993 between Borg-Warner Automotive, Inc. and Borg-Warner Security Corporation (incorporated by reference to Exhibit 10.27 to the Company's Annual Report on Form 10-K for the year ended December 31, 2012).
10.33	Assignment of Trademarks and License Agreement (incorporated by reference to Exhibit 10.28 to the Company's Annual Report on Form 10-K for the year ended December 31, 2012).
10.34	Amendment to Assignment of Trademarks and License Agreement (incorporated by reference to Exhibit 10.29 to the Company's Annual Report on Form 10-K for the year ended December 31, 2012).
21.1	Subsidiaries of the Company.*
23.1	Independent Registered Public Accounting Firm's Consent.*
31.1	Rule 13a-14(a)/15d-14(a) Certification by Principal Executive Officer.*
31.2	Rule 13a-14(a)/15d-14(a) Certification by Principal Financial Officer.*
32.1	Section 1350 Certifications.*
101.INS	XBRL Instance Document.*
101.SCH	XBRL Taxonomy Extension Schema Document.*
101.CAL	XBRL Taxonomy Extension Calculation Linkbase Document.*
101.LAB	XBRL Taxonomy Extension Label Linkbase Document.*
101.PRE	XBRL Taxonomy Extension Presentation Linkbase Document.*
101.DEF	XBRL Taxonomy Extension Definition Linkbase Document.*

*Filed herewith.

† Indicates a management contract or compensatory plan or arrangement.



BORGWARNER VISION

A Clean, Energy-Efficient World

BORGWARNER BELIEFS

Respect for Each Other

Power of Collaboration

Passion for Excellence

Personal Integrity

Responsibility to Our Communities

BorgWarner Inc.
World Headquarters
3850 Hamlin Road
Auburn Hills, MI 48326

BorgWarner