ANNUAL REPORT

2019

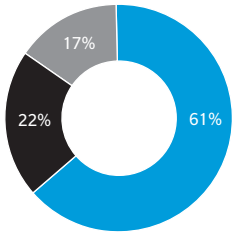
ZIMMER BIOMET HOLDINGS, INC.

ZIMMER BIOMET

Financial Highlights

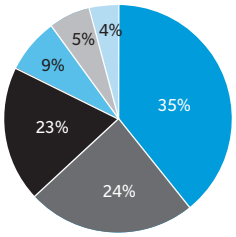
(Dollars in millions except per share amounts)

Sales by Geography



	2015[1]	2016	2017	2018	2019	% Change 2018-2019 Reported	% Change 2018-2019 Constant Currency[2]
Americas	$3,662	$4,787	$4,845	$4,837	$4,876	1%	1%
EMEA	1,418	1,730	1,745	1,802	1,747	(3%)	2%
Asia Pacific	918	1,151	1,213	1,294	1,359	5%	7%
Consolidated	$5,998	$7,668	$7,803	$7,933	$7,982	1%	2%

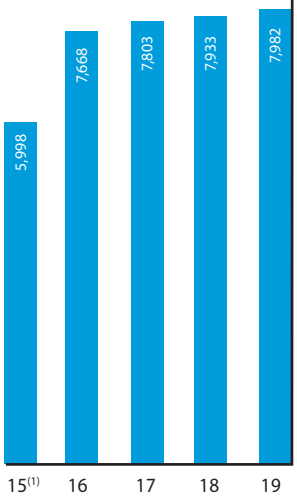
Sales by Product Category



	2015[1]	2016	2017	2018	2019	% Change 2018-2019 Reported	% Change 2018-2019 Constant Currency[2]
Knees	$2,277	$2,751	$2,734	$2,774	$2,810	1%	3%
Hips	1,533	1,862	1,872	1,921	1,935	1%	3%
S.E.T.	1,215	1,639	1,701	1,752	1,796	3%	4%
Spine & CMF	404	661	758	764	747	(2%)	(1%)
Dental	336	428	419	411	414	1%	2%
Other	233	327	319	311	280	(10%)	(9%)
Consolidated	$5,998	$7,668	$7,803	$7,933	$7,982	1%	2%

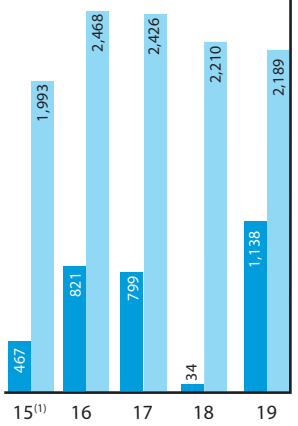
Net Sales

Zimmer Biomet recorded net sales of $7.982 billion in 2019, reflecting 1% revenue growth over 2018. We reported increased constant currency sales growth in Knees and Hips, our two largest product categories, as well as S.E.T. Our Dental product category sales also improved, while our Spine & CMF sales declined in 2019.



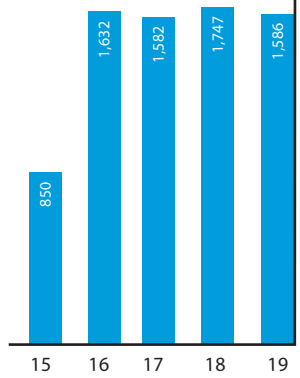
Operating Profit

We generated an attractive operating margin in 2019, primarily due to volume/mix sales growth and controlled spending, as well as gains recognized related to our hedging program.



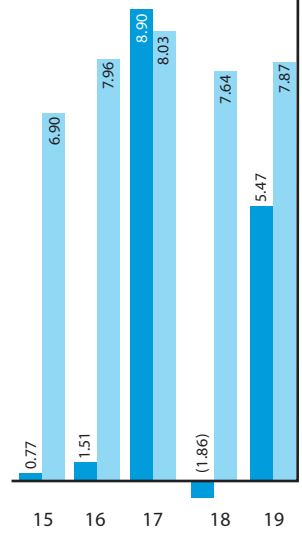
Operating Cash Flow

Our strong cash flow generation in 2019 allowed us to pay down debt. Looking forward to 2020, we intend to use available cash for reinvestment in the business, debt repayment and long term shareholder value creation. If the right opportunities arise, we may also use available cash to pursue business development opportunities.



Diluted Earnings (Loss) per Share

Diluted earnings per share increased from the prior year. Throughout 2019, we invested in commercial and operational execution, including a number of innovative development projects across our portfolio. We believe these new products and technologies represent opportunities for attractive future return on investment.



GRAPH KEY Reported Adjusted[3]

(1) Effective January 1, 2018 we adopted Accounting Standards Update 2014-09—Revenue from Contracts with Customers (Topic 606) and Accounting Standards Update 2017-07—Improving the Presentation of Net Periodic Pension Cost and Net Periodic Postretirement Benefit Cost. We adopted these new standards using the retrospective method, which resulted in restatement of the 2017 and 2016 periods. The 2015 period was not restated.

(2) "Constant Currency" refers to changes in sales resulting from translating current and prior-period sales at the same predetermined foreign currency exchange rate. The translated results are then used to determine year-over-year percentage increases or decreases that exclude the effect of changes in foreign currency exchange rates. See the reconciliation of this non-GAAP financial measure to the most directly comparable GAAP measure on page 91.

(3) "Adjusted" refers to performance measures that exclude the effects of inventory step-up; certain inventory and manufacturing-related charges, including charges to discontinue certain product lines; intangible asset amortization; goodwill and intangible asset impairment, as applicable; quality remediation expenses; restructuring and other cost reduction initiatives; acquisition, integration and related expenses; certain litigation gains and charges; expenses to establish initial compliance with the European Union Medical Device Regulation; other charges; any related effects on our income tax provision associated with these items; the effect of Switzerland tax reform; the effect of U.S. tax reform; other certain tax adjustments; and, with respect to earnings per share information, provide for the effect of dilutive shares assuming net earnings in periods of a reported net loss. See the reconciliations of these non-GAAP financial measures to the most directly comparable GAAP measures on pages 88-90.

To Our Shareholders,

Zimmer Biomet made steady progress during 2019 toward re-shaping the future of our organization. Over the last year, we've built a solid foundation that aligns with our long history as a trusted leader in musculoskeletal healthcare and positions us to accelerate innovation, execute on strategy for sustained growth and deliver value to all of our stakeholders.

Key Achievements in 2019

Overall, Zimmer Biomet delivered solid performance across our entire business, with almost every region and business delivering their best constant currency growth since the Zimmer-Biomet merger in 2015. Our 2019 sales reflected improved growth in many areas of our business driven by supply stabilization and new product launches, along with ongoing strong performance in our Asia Pacific business.

2019 net sales totaled $7.982 billion, an increase of 0.6 percent over the prior year on a reported basis, and an increase of 2.2 percent over the prior year on a constant currency basis. Diluted earnings per share for 2019 was $5.47. Adjusted diluted earnings per share for the full year was $7.87, an increase of 3 percent from the prior year.

Operationally, we executed on our strategic plan to reshape Zimmer Biomet into a more proactive and results-driven organization. Highlights of our accomplishments in 2019 include:

- **Operational Efficiency:** With each procedure, we strive to reinforce our commitment to upholding the highest standards of patient safety and quality in our products and services, combined with world-class integrity and ethical business practices. In 2019, improvements in our supply chain allowed us to consistently meet demand and deliver exceptional customer service. Having now achieved stability in this area, we will be focused moving forward on opportunities to increase operational efficiency and remove unnecessary complexity from our supply chain.

- **Innovative, Enabling Technologies and Solutions:** Our new product strategy is focused on providing a complete ecosystem of patient- and customer-centric solutions that enable and optimize outcomes with our core orthopedic implant products. Key launches in 2019 included the ROSA® Knee System for robotically-assisted surgeries and the Persona® Revision Knee System. The ROSA Robotics platform, which was

already approved for neurosurgical procedures, brings together Zimmer Biomet's robotics technology with our industry-leading knee implants to help surgeons personalize surgical procedures for their patients.

In order to further build our product ecosystem, we are investing in additional robotics and mini-robotics technology, along with innovations that support informatics and operating room efficiency.

- **Mission and Culture:** Our company's repositioning continues to be fundamentally driven by our global team's focus on our **One Zimmer Biomet corporate mission** to alleviate pain and improve the quality of life for people around the world. Since 2018, we have hosted Mission Ceremonies across our global locations, meeting with more than 90 percent of our team members, to ensure everyone in the organization has a direct personal connection to our mission and considers themselves part of ONE team. This mission-driven approach empowers every level of the organization to collaborate and innovate with an emphasis on the future, while working with purpose to deliver on our commitments and make an impact each day.

  The progress of our team during the year was recognized with Zimmer Biomet being named the **2019 Medtech Company of the Year** by *Medical Device and Diagnostic Industry (MD+DI)*, along with several other awards that highlight our company as a leader in the industry.

The Road Ahead: Multi-Year Strategic Plan

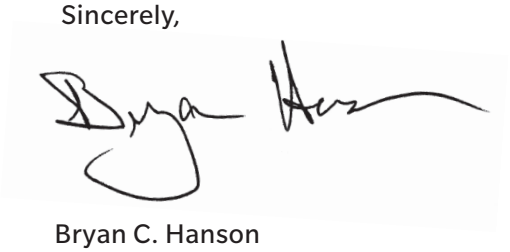
We are entering 2020 with a global challenge posed by COVID-19, but also with increased confidence in our team, our core business and our long-term strategic plan to drive sustainable growth and shareholder value. More so than ever before, Zimmer Biomet is prepared to rise to that challenge in service of patients, healthcare providers and institutions and the communities we serve.

We have made significant progress with our turnaround plan for the company the past two years. We have established Zimmer Biomet as a **best and preferred place to work** for our team members. We are a **trusted partner** to key stakeholders, including our customers, patients, regulators, team members and shareholders. And, we continue to work toward being a **top quartile performer** in terms of total shareholder returns.

I am proud of the entire Zimmer Biomet organization and the unyielding commitment to our mission that I see every day. Together, we are driven by the critical role we play in healthcare and the opportunity to positively impact millions of patients around the world. This transformation has been a team effort and I would like to thank our Board of Directors, our more than 23,000 team members and, you, our shareholders, for your support as we have executed on our plan.

We have stabilized many parts of the business, made key investments in priority areas and delivered solid financial performance. We enter 2020 with increased confidence in our business and remain optimistic about our future. In 2020, we will be operating from a position of strength as we work to grow our business, improve our performance and deliver value to all of our stakeholders. We look forward to delivering on our mission in 2020 and beyond.

Sincerely,



Bryan C. Hanson
President and CEO, Zimmer Biomet

Leadership (As of March 20, 2020)

Board of Directors

Christopher B. Begley
Retired Executive Chairman and Chief Executive Officer, Hospira, Inc.

Betsy J. Bernard
Retired President, AT&T Corp.

Gail K. Boudreaux
President and Chief Executive Officer, Anthem, Inc.

Michael J. Farrell
Chief Executive Officer, ResMed Inc.

Larry C. Glasscock
Chairman of the Board of Zimmer Biomet Holdings, Inc. and Retired Chairman, President and Chief Executive Officer, Anthem, Inc.

Robert A. Hagemann
Retired Senior Vice President and Chief Financial Officer, Quest Diagnostics Incorporated

Bryan C. Hanson
President and Chief Executive Officer, Zimmer Biomet Holdings, Inc.

Arthur J. Higgins
President and Chief Executive Officer, Assertio Therapeutics, Inc.

Maria Teresa Hilado
Retired Executive Vice President and Chief Financial Officer, Allergan plc

Syed Jafry
Senior Vice President and President, Regions, Thermo Fisher Scientific, Inc.

Michael W. Michelson
Retired Senior Advisory Partner, KKR Management LLC, the general partner of KKR & Co. L.P.

Management Team

Bryan Hanson
President and Chief Executive Officer

Didier Deltort
President, Europe, Middle East and Africa

Rachel Ellingson
Senior Vice President, Strategy

David Kunz
Senior Vice President, Global Quality and Regulatory Affairs

Angela Main
Senior Vice President, Global Chief Compliance Officer and Associate General Counsel, Asia Pacific

Keri Mattox
Senior Vice President, Investor Relations and Chief Communications Officer

Carrie Nichol
Vice President, Controller and Chief Accounting Officer

Chad Phipps
Senior Vice President, General Counsel and Secretary

Pamela Puryear, PhD
Senior Vice President, Chief Human Resources Officer

Zeeshan Tariq
Vice President and Chief Information Officer

Ivan Tornos
Group President, Global Businesses and Americas

Kenneth Tripp
Senior Vice President, Global Operations and Logistics

Suketu Upadhyay
Executive Vice President and Chief Financial Officer

Sang Yi
President, Asia Pacific

Forward-Looking Statements

This 2019 Annual Report includes forward-looking statements that are subject to significant risks, uncertainties and changes in circumstances that could cause actual results to differ materially from the forward-looking statements. See "Cautionary Note Regarding Forward-Looking Statements" immediately following the cover page of our Annual Report on Form 10-K included herein.

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

FORM 10-K

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

For year ended December 31, 2019

Commission file number 001-16407

ZIMMER BIOMET HOLDINGS, INC.

(Exact name of registrant as specified in its charter)

Delaware	**13-4151777**
(State of Incorporation)	*(IRS Employer Identification No.)*
345 East Main Street Warsaw, Indiana	**46580**
(Address of principal executive offices)	(Zip Code)

Registrant's telephone number, including area code: **(574) 267-6131**

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

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Stock, $0.01 par value	ZBH	New York Stock Exchange
1.414% Notes due 2022	ZBH 22A	New York Stock Exchange
2.425% Notes due 2026	ZBH 26	New York Stock Exchange
1.164% Notes due 2027	ZBH 27	New York Stock Exchange

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

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

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

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

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§ 232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes ☑ No ☐

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

Large accelerated filer ☑ Accelerated filer ☐ Non-accelerated filer ☐ Smaller reporting company ☐ Emerging growth company ☐

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

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

The aggregate market value of shares held by non-affiliates was $24,106,325,697 (based on the closing price of these shares on the New York Stock Exchange on June 28, 2019 and assuming solely for the purpose of this calculation that all directors and executive officers of the registrant are "affiliates"). As of February 7, 2020, 206,403,646 shares of the registrant's $.01 par value common stock were outstanding.

Documents Incorporated by Reference

Document	**Form 10-K**
Portions of the Proxy Statement with respect to the 2020 Annual Meeting of Stockholders	Part III

Cautionary Note Regarding Forward-Looking Statements

This Annual Report contains forward-looking statements within the meaning of federal securities laws, including, among others, statements regarding sales and earnings guidance and any statements about our expectations, plans, strategies or prospects. We generally use the words "may," "will," "expects," "believes," "anticipates," "plans," "estimates," "projects," "assumes," "guides," "targets," "forecasts," "sees," "seeks," "should," "could," "would," "predicts," "potential," "strategy," "future," "opportunity," "work toward," "intends," "guidance," "confidence," "positioned," "design," "strive," "continue," "look forward to" and similar expressions to identify forward-looking statements. All statements other than statements of historical or current fact are, or may be deemed to be, forward-looking statements. Such statements are based upon the current beliefs, expectations and assumptions of management and are subject to significant risks, uncertainties and changes in circumstances that could cause actual outcomes and results to differ materially from the forward-looking statements. These risks, uncertainties and changes in circumstances include, but are not limited to: the possibility that the anticipated synergies and other benefits from mergers and acquisitions will not be realized, or will not be realized within the expected time periods; the risks and uncertainties related to our ability to successfully integrate the operations, products, employees and distributors of acquired companies; the risks and uncertainties related to our ability to successfully execute our restructuring plans; the effect of the potential disruption of management's attention from ongoing business operations due to integration matters related to mergers and acquisitions; the effect of mergers and acquisitions on our relationships with customers, suppliers and lenders and on our operating results and businesses generally; compliance with the Deferred Prosecution Agreement ("DPA") entered into in January 2017; the success of our quality and operational excellence initiatives, including ongoing quality remediation efforts at our Warsaw North Campus facility; challenges relating to changes in and compliance with governmental laws and regulations affecting our U.S. and international businesses, including regulations of the U.S. Food and Drug Administration ("FDA") and foreign government regulators, such as more stringent requirements for regulatory clearance of products; the ability to remediate matters identified in any inspectional observations or warning letters issued by the FDA, while continuing to satisfy the demand for our products; the outcome of government investigations; competition; pricing pressures; changes in customer demand for our products and services caused by demographic changes or other factors; the impact of healthcare reform measures; reductions in reimbursement levels by third-party payors and cost containment efforts of healthcare purchasing organizations; dependence on new product development, technological advances and innovation; shifts in the product category or regional sales mix of our products and services; supply and prices of raw materials and products; control of costs and expenses; the ability to obtain and maintain adequate intellectual property protection; breaches or failures of our information technology systems or products, including by cyberattack, unauthorized access or theft; the ability to form and implement alliances; changes in tax obligations arising from tax reform measures, including European Union rules on state aid, or examinations by tax authorities; product liability, intellectual property and commercial litigation losses; the ability to retain the independent agents and distributors who market our products; dependence on a limited number of suppliers for key raw materials and outsourced activities; the impact of substantial indebtedness on our ability to service our debt obligations and/or refinance amounts outstanding under our debt obligations at maturity on terms favorable to us, or at all; changes in general industry and market conditions, including domestic and international growth rates; changes in general domestic and international economic conditions, including interest rate and currency exchange rate fluctuations; and the impact of the ongoing financial and political uncertainty on countries in the Euro zone on the ability to collect accounts receivable in affected countries.

See also the section titled "Risk Factors" (refer to Part I, Item 1A of this report) for further discussion of certain risks and uncertainties that could cause actual results and events to differ materially from the forward-looking statements. Readers of this report are cautioned not to rely on these forward-looking statements, since there can be no assurance that these forward-looking statements will prove to be accurate. Forward-looking statements speak only as of the date they are made, and we expressly disclaim any intention or obligation to update or revise any forward-looking statements, whether as a result of new information, future events or otherwise. You are advised, however, to consult any further disclosures we make on related subjects in our Quarterly Reports on Form 10-Q and Current Reports on Form 8-K. This cautionary note is applicable to all forward-looking statements contained in this report.

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PART I

Item 1. **Business**

Overview

Zimmer Biomet is a global leader in musculoskeletal healthcare. We design, manufacture and market orthopedic reconstructive products; sports medicine, biologics, extremities and trauma products; office based technologies; spine, craniomaxillofacial and thoracic products; dental implants; and related surgical products. We collaborate with healthcare professionals around the globe to advance the pace of innovation. Our products and solutions help treat patients suffering from disorders of, or injuries to, bones, joints or supporting soft tissues. Together with healthcare professionals, we help millions of people live better lives. In this report, "Zimmer Biomet," "we," "us," "our," "the Company" and similar words refer collectively to Zimmer Biomet Holdings, Inc. and its subsidiaries. "Zimmer Biomet Holdings" refers to the parent company only.

Zimmer Biomet Holdings was incorporated in Delaware in 2001. Our history dates to 1927, when Zimmer Manufacturing Company, a predecessor, was founded in Warsaw, Indiana. On August 6, 2001, we were spun off from our former parent and became an independent public company. In 2015, we acquired LVB Acquisition, Inc. ("LVB"), the parent company of Biomet, Inc. ("Biomet"), and LVB and Biomet became our wholly-owned subsidiaries (sometimes hereinafter referred to as the "Biomet merger" or the "merger"). In connection with the merger, we changed our name from Zimmer Holdings, Inc. to Zimmer Biomet Holdings, Inc.

Customers, Sales and Marketing

Our primary customers include orthopedic surgeons, neurosurgeons, oral surgeons, and other specialists, dentists, hospitals, stocking distributors, healthcare dealers and, in their capacity as agents, healthcare purchasing organizations or buying groups. These customers range from large multinational enterprises to independent clinicians and dentists.

We market and sell products through three principal channels: 1) direct to healthcare institutions, such as hospitals, referred to as direct channel accounts; 2) through stocking distributors and healthcare dealers; and 3) directly to dental practices and dental laboratories. With direct channel accounts and some healthcare dealers, inventory is generally consigned to sales agents or customers. With sales to stocking distributors, some healthcare dealers, dental practices and dental laboratories, title to product passes upon shipment. Consignment sales represented approximately 80 percent of our net sales in 2019. No individual customer accounted for more than 1 percent of our net sales for 2019.

We stock inventory in our warehouse facilities and retain title to consigned inventory in an effort to have sufficient quantities available when products are needed for surgical procedures. Safety stock levels are determined based on a number of factors, including demand, manufacturing lead times and quantities required to maintain service levels.

We also carry trade accounts receivable balances based on credit terms that are generally consistent with local market practices.

We utilize a network of sales associates, sales managers and support personnel, some of whom are employed or contracted by independent distributors and sales agencies. We invest a significant amount of time and expense in training sales associates in how to use specific products and how to best inform surgeons of product features and uses. Sales force representatives must have strong technical selling skills and medical education to provide technical support for surgeons.

In response to the different healthcare systems throughout the world, our sales and marketing strategies and organizational structures differ by region. We utilize a global approach to sales force training, marketing and medical education to provide consistent, high quality service. Additionally, we keep current with key surgical developments and other issues related to orthopedic surgeons, neurosurgeons, other specialists, dentists and oral surgeons and the medical and dental procedures they perform.

We allocate resources to achieve our operating profit goals through seven operating segments. Our operating segments are comprised of both geographic and product category business units. We are organized through a combination of geographic and product category operating segments for various reasons, including the distribution channels through which products are sold. Our product category operating segments generally have distribution channels focused specifically on those product categories, whereas our geographic operating segments have distribution channels that sell multiple product categories. The following is a summary of our seven operating segments. See Note 18 to our consolidated financial statements for more information regarding our segments.

Americas. The Americas geographic operating segment is our largest operating segment. The U.S. accounts for 94 percent of net sales in this region. The U.S. sales force consists of a combination of employees and independent sales agents, most of whom sell products exclusively for Zimmer Biomet. The sales force in the U.S. receives a commission on product sales and is responsible for many operating decisions and costs.

In this region, we contract with group purchasing organizations and managed care accounts and have promoted unit growth by offering volume discounts to customer healthcare institutions within a specified group. Generally, we are designated as one of several preferred purchasing sources for specified products, although members are not obligated to purchase our products. Contracts with group purchasing organizations generally have a term of three years, with extensions as warranted.

In the Americas, we monitor and rank independent sales agents and our direct sales force across a range of performance metrics, including the achievement of sales targets and maintenance of efficient levels of working capital.

EMEA. The EMEA geographic operating segment is our second largest operating segment. France, Germany, Italy, Spain and the United Kingdom collectively account for 55 percent of net sales in the region. This segment also includes other key markets, including Switzerland, Benelux, Nordic, Central and Eastern Europe, the Middle East and Africa. Our sales force in this segment is comprised of direct sales associates, commissioned agents, independent distributors and sales support personnel. We emphasize the advantages of our clinically proven, established designs and innovative solutions and new and enhanced materials and surfaces. In most European countries, healthcare is sponsored by the government and therefore government budgets impact healthcare spending, which can affect our sales in this segment.

Asia Pacific. The Asia Pacific geographic operating segment includes key markets such as Japan, China, Australia, New Zealand, Korea, Taiwan, India, Thailand, Singapore, Hong Kong and Malaysia. Japan is the largest market within this segment, accounting for 47 percent of the region's sales. In Japan and most countries in the Asia Pacific region, we maintain a network of dealers, who act as order agents on behalf of hospitals in the region, and sales associates, who build and maintain relationships with orthopedic surgeons and neurosurgeons in their markets. The knowledge and skills of these sales associates play a critical role in providing service, product information and support to surgeons.

Spine, less Asia Pacific ("Spine"). The Spine product category operating segment includes all spine product results except those in Asia Pacific. The U.S. accounts for the majority of sales in this operating segment. The market dynamics of the Spine business are similar to those described in the geographic operating segments. However, our Spine business maintains a separate sales force of employees and independent sales agents.

Office Based Technologies. Our Office Based Technologies product category operating segment only sells to U.S. customers. In this product category, we market our products to doctors who prescribe them for use by patients. The products are mostly provided directly by Zimmer Biomet to patients and are paid for through patients' insurance or by patients themselves. Products are also sold through wholesale channels on a limited basis.

Craniomaxillofacial and Thoracic ("CMF"). Our CMF product category operating segment competes across the world through a combination of direct and independent sales agents. The U.S. accounts for the majority of sales in this operating segment. The U.S. sales force consists of a combination of employees and independent sales agents. Internationally, our primary customers are independent stocking distributors who market our products to their customers.

Dental. Our Dental product category operating segment competes across the world. Our sales force is primarily composed of employees who market our products to customers. We sell directly to dental practices or dental laboratories, or to independent stocking distributors depending on the market.

Seasonality

Our business is seasonal in nature to some extent, as many of our products are used in elective procedures, which typically decline during the summer months and can increase at the end of the year once annual deductibles have been met on health insurance plans. Additionally, with sales to customers where title to product passes upon shipment, these customers may purchase items in large quantities if incentives are offered or if there are new product offerings in a market, which could cause period-to-period differences in sales.

Distribution

We distribute our products both through large, centralized warehouses and through smaller, market specific facilities, depending on the needs of the market. We maintain large, centralized warehouses in the U.S. and Europe to be able to efficiently distribute our products to customers in those regions. In addition to these centralized warehouses, we maintain smaller distribution facilities in the U.S. and in each of the countries where we have a direct sales presence. In many locations, our inventory is consigned to the healthcare institution.

We generally ship our orders via expedited courier. Since most of our sales occur at the time of an elective procedure, we generally do not have firm orders.

Products

Our products include orthopedic reconstructive products; sports medicine, biologics, extremities and trauma products; office based technologies; spine and CMF products; dental implants; and related surgical products.

KNEES

Total knee replacement surgeries typically include a femoral component, a patella (knee cap), a tibial tray and an articular surface (placed on the tibial tray). Knee replacement surgeries include first-time, or primary, joint replacement procedures and revision procedures for the replacement, repair or enhancement of an implant or component from a previous procedure. There are also procedures for partial reconstruction of the knee, which treat limited knee degeneration and involve the replacement of only one side, or compartment, of the knee with a unicompartmental knee prosthesis. A developing trend in knee replacement surgeries is the use of robotic technologies to assist a surgeon with implant positioning. In 2019, we entered the robotic assistance market with our ROSA® Knee System. In the future, we plan to expand the use of our ROSA® Robot to other product categories.

Our significant knee brands include the following:

- Persona® The Personalized Knee System
- NexGen® Complete Knee Solution
- Vanguard® Knee
- Oxford® Partial Knee

HIPS

Total hip replacement surgeries replace both the head of the femur and the socket portion of the pelvis (acetabulum) of the natural hip. Hip procedures include first-time, or primary, joint replacement as well as revision procedures. Hip implant procedures involve the use of bone cement to attach or affix the prosthetic components to the surrounding bone, or are press-fit into bone, which means that they have a surface that bone affixes to through either ongrowth or ingrowth technologies.

Our significant hip brands include the following:

- Taperloc® Hip System
- Zimmer® M/L Taper Hip Prosthesis
- Arcos® Modular Hip System
- Continuum® Acetabular System
- G7® Acetabular System

S.E.T.

Our S.E.T. product category includes surgical, sports medicine, biologics, foot and ankle, extremities and trauma products. Our surgical products are used to support various surgical procedures. Our sports medicine products are primarily for the repair of soft tissue injuries, most commonly used in the knee and shoulder. Our biologics products are used as early intervention for joint preservation or to support surgical procedures. Our foot and ankle and extremities products are designed to treat arthritic conditions and fractures in the foot, ankle, shoulder, elbow and wrist. Our trauma products are used to stabilize damaged or broken bones and their surrounding tissues to support the body's natural healing process.

Our significant S.E.T. brands include the following:

- A.T.S.® Tourniquet Systems
- JuggerKnot® Soft Anchor System
- Gel-One®[1] Cross-linked Hyaluronate
- Zimmer® Trabecular Metal™ Reverse Shoulder System
- Comprehensive® Shoulder
- Zimmer® Natural Nail® System
- A.L.P.S.® Plating System

SPINE and CMF

Our spine products division designs, manufactures and distributes medical devices and surgical instruments to deliver comprehensive solutions for individuals with back or neck pain caused by degenerative conditions, deformities or traumatic injury of the spine. Our CMF division includes face and skull reconstruction products as well as products that fixate and stabilize the bones of the chest in order to facilitate healing or reconstruction after open heart surgery, trauma or for deformities of the chest.

Our significant spine and CMF brands include the following:

- Polaris™ Spinal System
- Mobi-C® Cervical Disc
- SternaLock® Blu Closure System
- SternaLock® Rigid Sternal Fixation

[1] Registered trademark of Seikagaku Corporation

DENTAL

Our dental products division manufactures and/or distributes: 1) dental reconstructive implants – for individuals who are totally without teeth or are missing one or more teeth; 2) dental prosthetic products – aimed at providing a more natural restoration to resemble the original teeth; and 3) dental regenerative products – for soft tissue and bone rehabilitation.

Our significant dental brands include the following:

- Tapered Screw-Vent® Implant System
- 3i T3® Implant

OTHER

Our other product category primarily includes our bone cement and office based technology products.

Research and Development

We have extensive research and development activities to develop new surgical techniques, including robotic techniques, materials, biologics and product designs. The research and development teams work closely with our strategic brand marketing function. The rapid commercialization of innovative new materials, biologics products, implant and instrument designs and surgical techniques remains one of our core strategies and continues to be an important driver of sales growth.

We are broadening our offerings in certain of our product categories and exploring new technologies with possible applications in multiple areas. Our primary research and development facility is located in Warsaw, Indiana. We have other research and development personnel based in, among other places, Canada, China, France, Switzerland and other U.S. locations. As of December 31, 2019, we employed approximately 2,100 research and development employees worldwide.

We expect to continue to identify innovative technologies, which may include acquiring complementary products or businesses, establishing technology licensing arrangements or strategic alliances.

Government Regulation and Compliance

Our operations, products and customers are subject to extensive government regulation by numerous government agencies, both within and outside the U.S. Our global regulatory environment is increasingly stringent, unpredictable and complex. There is a global trend toward increased regulatory activity related to medical products.

In the U.S., numerous laws and regulations govern all the processes by which our products are brought to market. These include, among others, the Federal Food, Drug and Cosmetic Act ("FDCA") and regulations issued or promulgated thereunder. The U.S. Food and Drug Administration ("FDA") has enacted regulations that control all aspects of the development, manufacture, advertising, promotion and postmarket surveillance of medical products, including medical devices. In addition, the FDA controls the access of products to market through processes designed to ensure that only

products that are safe and effective are made available to the public.

Most of our new products fall into an FDA medical device classification that requires the submission of a Premarket Notification (510(k)) to the FDA. This process requires us to demonstrate that the device to be marketed is at least as safe and effective as, that is, substantially equivalent to, a legally marketed device. We must submit information that supports our substantial equivalency claims. Before we can market the new device, we must receive an order from the FDA finding substantial equivalence and clearing the new device for commercial distribution in the U.S.

Other devices we develop and market are in a category (class) for which the FDA has implemented stringent clinical investigation and Premarket Approval ("PMA") requirements. The PMA process requires us to provide clinical and laboratory data that establishes that the new medical device is safe and effective. The FDA will approve the new device for commercial distribution if it determines that the data and information in the PMA application constitute valid scientific evidence and that there is reasonable assurance that the device is safe and effective for its intended use(s).

All of our devices marketed in the U.S. have been cleared or approved by the FDA, with the exception of some devices which are classified by FDA regulation as exempt from premarket clearance and approval or were in commercial distribution prior to May 28, 1976.

Both before and after a product is commercially released, we have ongoing responsibilities under FDA regulations. The FDA reviews design and manufacturing practices, labeling and record keeping, and manufacturers' required reports of adverse experiences and other information to identify potential problems with marketed medical devices. We are also subject to periodic inspection by the FDA for compliance with its Quality System Regulation (21 CFR Part 820) ("QSR"), among other FDA requirements, such as requirements for advertising and promotion of our devices. Our manufacturing operations, and those of our third-party manufacturers, are required to comply with the QSR, which addresses a company's responsibility for product design, testing and manufacturing quality assurance and the maintenance of records and documentation. The QSR requires that each manufacturer establish a quality system by which the manufacturer monitors the manufacturing process and maintains records that show compliance with FDA regulations and the manufacturer's written specifications and procedures relating to the devices. QSR compliance is necessary to receive and maintain FDA clearance or approval to market new and existing products and is also necessary for distributing in the U.S. certain devices exempt from FDA clearance and approval requirements. The FDA conducts announced and unannounced periodic and on-going inspections of medical device manufacturers to determine compliance with the QSR. If in connection with these inspections the FDA believes the manufacturer has failed to comply with applicable regulations and/or procedures, it may issue inspectional observations on Form FDA-483 ("Form 483") that would necessitate prompt corrective action. If FDA inspectional observations are not addressed and/or corrective action is not taken in a timely manner and to the FDA's satisfaction, the FDA may issue a warning letter (which would similarly necessitate prompt corrective action) and/or proceed directly to other forms of enforcement action, including the imposition of operating restrictions, including a ceasing of operations, on one or more facilities, enjoining and restraining certain violations of applicable law pertaining to products, seizure of products, and assessing civil or criminal penalties against our officers, employees or us. The FDA could also issue a corporate warning letter or a recidivist warning letter or negotiate the entry of a consent decree of permanent injunction with us. The FDA may also recommend prosecution to the U.S. Department of Justice ("DOJ"). Any adverse regulatory action, depending on its magnitude, may restrict us from effectively manufacturing, marketing and selling our products and could have a material adverse effect on our business, financial condition and results of operations. For information regarding certain warning letters and Form 483 inspectional observations that we are addressing, see Note 20 to our consolidated financial statements.

The FDA, in cooperation with U.S. Customs and Border Protection ("CBP"), administers controls over the import of medical devices into the U.S. and can prevent the importation of products the FDA deems to violate the FDCA or its implementing regulations. The CBP imposes its own regulatory requirements on the import of our products, including inspection and possible sanctions for noncompliance. We are also subject to foreign trade controls administered by certain U.S. government agencies, including the Bureau of Industry and Security within the Commerce Department and the Office of Foreign Assets Control within the Treasury Department ("OFAC"). In addition, exported medical products are subject to the regulatory requirements of each country to which the medical product is exported.

There are also requirements of state and local governments that we must comply with in the manufacture and marketing of our products.

In many of the countries in which our products are sold, we are subject to supranational, national, regional and local regulations affecting, among other things, the development, design, manufacturing, product standards, packaging, advertising, promotion, labeling, marketing and postmarket surveillance of medical products, including medical devices. The member countries of the European Union (the "EU") have adopted the European Medical Device Directive (the "MDD"), which creates a single set of medical device regulations for products marketed in all member countries. Compliance with the MDD and certification to a quality system (e.g., ISO 13485 certification) enable the manufacturer to place a CE mark on its products. To obtain authorization to affix the CE mark to a product, a recognized European Notified Body must assess a manufacturer's quality system and the product's conformity to the requirements of the MDD. We are subject to inspection by the Notified Bodies for compliance with these requirements. In May 2017, a new EU Medical Device Regulation ("MDR") was published that will replace the MDD and will impose significant additional premarket and postmarket requirements beginning in May 2020. Under a corrigendum to the MDR finalized in

December 2019, some low-risk medical devices being up-classified as a result of the MDR, including low-risk instruments, may now receive a four-year transitional period to comply.

Our quality management system is based upon the requirements of ISO 13485, the QSR, the MDD and other applicable regulations for the markets in which we sell. Our principal manufacturing sites are certified to ISO 13485 and audited at regular intervals. Additionally, our principal sites are certified under the Medical Device Single Audit Program ("MDSAP"), which is a voluntary audit program developed by regulatory authorities in five countries (i.e., Australia, Brazil, Canada, Japan, and the United States) to assess compliance with the quality management system regulatory requirements of those countries. MDSAP audits are conducted by an MDSAP-recognized auditing organization and can fulfill the needs of the participating regulatory jurisdictions, replacing standard surveillance audits by the regulatory authorities in those countries.

Further, we are subject to other supranational, national, regional, federal, state and local laws concerning healthcare fraud and abuse, including false claims and anti-kickback laws, as well as the U.S. Physician Payments Sunshine Act and similar state and foreign healthcare professional payment transparency laws. These laws are administered by, among others, the DOJ, the Office of Inspector General of the Department of Health and Human Services ("OIG-HHS"), state attorneys general and various foreign government agencies. Many of these agencies have increased their enforcement activities with respect to medical products manufacturers in recent years. Violations of these laws are punishable by criminal and/or civil sanctions, including, in some instances, fines, imprisonment and, within the U.S., exclusion from participation in government healthcare programs, including Medicare, Medicaid and Veterans Administration health programs.

Our operations in foreign countries are subject to the extraterritorial application of the U.S. Foreign Corrupt Practices Act ("FCPA"). Our global operations are also subject to foreign anti-corruption laws, such as the United Kingdom ("UK") Bribery Act, among others. As part of our global compliance program, we seek to address anti-corruption risks proactively. On January 12, 2017, we resolved previously-disclosed FCPA matters involving Biomet and certain of its subsidiaries. As part of that settlement, we entered into a Deferred Prosecution Agreement ("DPA") with the DOJ. For information regarding the DPA, see Note 20 to our consolidated financial statements.

Our facilities and operations are also subject to complex federal, state, local and foreign environmental and occupational safety laws and regulations, including those relating to discharges of substances in the air, water and land, the handling, storage and disposal of wastes and the clean-up of properties contaminated by pollutants. We do not expect that the ongoing costs of compliance with these environmental requirements will have a material impact on our consolidated earnings, capital expenditures or competitive position.

In addition, we are subject to federal, state and international data privacy and security laws and regulations that govern the collection, use, disclosure, transfer, storage, disposal and protection of health-related and other personal information. The FDA has issued guidance to which we may be subject concerning data security for medical devices. The FDA and the Department of Homeland Security ("DHS") have issued urgent safety communications regarding cybersecurity vulnerabilities of certain medical devices.

In addition, certain of our affiliates are subject to privacy, security and breach notification regulations promulgated under the Health Insurance Portability and Accountability Act of 1996 and the Health Information Technology for Economic and Clinical Health Act (collectively, "HIPAA"). HIPAA governs the use, disclosure, and security of protected health information by HIPAA "covered entities" and their "business associates." Covered entities are health plans, health care clearinghouses and health care providers that engage in specific types of electronic transactions. A business associate is any person or entity (other than members of a covered entity's workforce) that performs a service on behalf of a covered entity involving the use or disclosure of protected health information. The U.S. Department of Health and Human Services ("HHS") (through the Office for Civil Rights) has direct enforcement authority against covered entities and business associates with regard to compliance with HIPAA regulations. On December 12, 2018, the Office for Civil Rights of HHS issued a request for information seeking input from the public on how the HIPAA regulations could be modified to amend existing obligations relating to the processing of protected health information. We will monitor this process and assess the impact of changes to the HIPAA regulations to our business.

In addition to the FDA guidance and HIPAA regulations described above, a number of U.S. states have also enacted data privacy and security laws and regulations that govern the collection, use, disclosure, transfer, storage, disposal and protection of personal information, such as social security numbers, medical and financial information and other information. These laws and regulations may be more restrictive and not preempted by U.S. federal laws. For example, several U.S. territories and all 50 states now have data breach laws that require timely notification to individuals, and at times regulators, the media or credit reporting agencies, if a company has experienced the unauthorized access or acquisition of personal information. Other state laws include the California Consumer Privacy Act ("CCPA"), which was signed into law on June 28, 2018 and largely took effect on January 1, 2020. The CCPA, among other things, contains new disclosure obligations for businesses that collect personal information about California residents and affords those individuals numerous rights relating to their personal information that may affect our ability to use personal information or share it with our business partners. Regulations from the California Attorney General have not been finalized, and it is expected that additional amendments to the CCPA will be introduced. Meanwhile, a number of other states have considered privacy laws like the CCPA, and in October 2019, Nevada enacted a similar but generally less restrictive privacy

law. We will continue to monitor and assess the impact of these state laws, which may impose substantial penalties for violations, impose significant costs for investigation and compliance, allow private class-action litigation, and carry significant potential liability for our business.

Outside of the U.S., data protection laws, including the EU General Data Protection Regulation (the "GDPR") and member state implementing legislation, and the Brazil Lei Geral de Proteção de Dados (the "LGPD"), also apply to some of our operations in the countries in which we provide services to our customers. Legal requirements in these countries relating to the collection, storage, processing and transfer of personal data continue to evolve. The GDPR, which became effective on May 25, 2018, imposes, among other things, data protection requirements that include strict obligations and restrictions on the ability to collect, analyze and transfer EU personal data, a requirement for prompt notice of data breaches to data subjects and supervisory authorities in certain circumstances, and possible substantial fines for any violations (including possible fines for certain violations of up to the greater of 20 million Euros or 4% of total worldwide annual turnover of the preceding financial year).

Failure to comply with U.S. and international data protection laws and regulations could result in government enforcement actions (which could include civil and/or criminal penalties), private litigation and/or adverse publicity and could negatively affect our operating results and business.

Competition

The orthopedics and broader musculoskeletal care industry is highly competitive. In the global markets for our knees, hips, and S.E.T. products, our major competitors include the DePuy Synthes Companies of Johnson & Johnson, Stryker Corporation and Smith & Nephew plc. There are smaller competitors in these product categories as well who have success by focusing on smaller subsegments of the industry.

In the spine and CMF categories, we compete globally primarily with the spinal and biologic business of Medtronic plc, the DePuy Synthes Companies, Stryker Corporation, NuVasive, Inc. and Globus Medical, Inc.

In the dental implant category, we compete primarily with The Straumann Group, Dentsply Sirona Inc. and Nobel Biocare Services AG (part of Envista Holdings Corporation).

Competition within the industry is primarily based on technology, innovation, quality, reputation, customer service and pricing. A key factor in our continuing success in the future will be our ability to develop new products and technologies and improve existing products and technologies.

Manufacturing and Raw Materials

We manufacture our products at various sites. We also strategically outsource some manufacturing to qualified suppliers who are highly capable of producing components.

The manufacturing operations at our facilities are designed to incorporate the cellular concept for production and to implement tenets of a manufacturing philosophy focused on continuous improvement efforts in product quality, lead time reduction and capacity optimization. Our continuous improvement efforts are driven by Lean and Six Sigma methodologies. In addition, at certain of our manufacturing facilities, many of the employees are cross-trained to perform a broad array of operations.

We generally target operating our manufacturing facilities at optimal levels of total capacity. We continually evaluate the potential to in-source and outsource production as part of our manufacturing strategy to provide value to our stakeholders.

In most of our manufacturing network, we have improved our manufacturing processes to harmonize and optimize our quality systems and to protect our profitability and offset the impact of inflationary costs. We have, for example, employed computer-assisted robots and multi-axis grinders to precision polish medical devices; automated certain manufacturing and inspection processes, including on-machine inspection and process controls; purchased state-of-the-art equipment; in-sourced core products and processes; and negotiated cost reductions from third-party suppliers.

We use a diverse and broad range of raw materials in the manufacturing of our products. We purchase all of our raw materials and select components used in manufacturing our products from external suppliers. In addition, we purchase some supplies from single sources for reasons of quality assurance, sole source availability, cost effectiveness or constraints resulting from regulatory requirements. We work closely with our suppliers to assure continuity of supply while maintaining high quality and reliability. To date, we have not experienced any significant difficulty in locating and obtaining the materials necessary to fulfill our production schedules.

Intellectual Property

Patents and other proprietary rights are important to the continued success of our business. We also rely upon trade secrets, know-how, continuing technological innovation and licensing opportunities to develop and maintain our competitive position. We protect our proprietary rights through a variety of methods, including confidentiality agreements and proprietary information agreements with suppliers, employees, consultants and others who may have access to proprietary information. We own or control through licensing arrangements over 9,000 issued patents and patent applications throughout the world that relate to aspects of the technology incorporated in many of our products.

Employees

As of December 31, 2019, we employed approximately 19,900 employees worldwide, including approximately 2,100 employees dedicated to research and development. Approximately 9,500 employees are located within the U.S. and approximately 10,400 employees are located outside of the U.S., primarily throughout Europe and in Japan. We have approximately 8,600 employees dedicated to manufacturing our products worldwide. The Warsaw, Indiana production facilities employ approximately 3,100 employees in the aggregate.

We have production employees represented by a labor union in Dover, Ohio and Bridgend, South Wales. We have other employees in Europe who are represented by Works Councils. We believe that our relationship with our employees is satisfactory.

INFORMATION ABOUT OUR EXECUTIVE OFFICERS

The following table sets forth certain information with respect to our executive officers as of February 14, 2020.

Name	Age	Position
Bryan Hanson	53	President and Chief Executive Officer
Didier Deltort	53	President, Europe, Middle East and Africa
Carrie Nichol	40	Vice President, Controller and Chief Accounting Officer
Chad Phipps	48	Senior Vice President, General Counsel and Secretary
Ivan Tornos	44	Group President, Global Businesses and Americas
Suketu Upadhyay	50	Executive Vice President and Chief Financial Officer
Sang Yi	57	President, Asia Pacific

Mr. Hanson was appointed President and Chief Executive Officer and a member of the Board of Directors in December 2017. Previously, Mr. Hanson served as Executive Vice President and President, Minimally Invasive Therapies Group of Medtronic plc from January 2015 until joining Zimmer Biomet. Prior to that, he was Senior Vice President and Group President, Covidien of Covidien plc from October 2014 to January 2015; Senior Vice President and Group President, Medical Devices and United States of Covidien from October 2013 to September 2014; Senior Vice President and Group President of Covidien for the Surgical Solutions business from July 2011 to October 2013; and President of Covidien's Energy-based Devices business from July 2006 to June 2011. Mr. Hanson held several other positions of increasing responsibility in sales, marketing and general management with Covidien from October 1992 to July 2006.

Mr. Deltort was appointed President, Europe, Middle East and Africa in August 2018. He is responsible for the marketing, sales and distribution of products, services and solutions in the European, Middle Eastern and African ("EMEA") regions. Prior to joining Zimmer Biomet, Mr. Deltort served as Senior Vice President and General Manager, Global Healthcare Solutions and Partnerships of Boston Scientific Corporation, based in France from May 2016 until August 2018. Before joining Boston Scientific Corporation, he spent 14 years with GE Healthcare in positions of increasing responsibility in Germany, Finland, Dubai and the United States, most recently serving as Global Senior Vice President and General Manager of the global Monitoring Solutions business as well as Managing Director of GE Healthcare Finland. Prior to GE, Mr. Deltort served at Philips, Hewlett-Packard and Marquette Electronics in various international healthcare executive roles.

Ms. Nichol was appointed Vice President, Controller and Chief Accounting Officer in October 2019. Prior to joining Zimmer Biomet, Ms. Nichol served as Senior Vice President, Controller and Chief Accounting Officer of Endo International plc ("Endo International") from April 2018 to September 2019. Ms. Nichol joined Endo International in March 2015 as Director of Consolidations and Financial Systems and was promoted to Assistant Controller in September 2015. Prior to her tenure at Endo International, Ms. Nichol served as Senior Vice President and Controller of Haas Group Inc. (now part of Wesco Aircraft Holdings, Inc.), where she led the global accounting and finance teams from June 2011 until March 2015. Prior to her employment with Haas Group Inc., Ms. Nichol was with IKON Office Solutions (now part of Ricoh Company, Ltd.) for a total of five years from June 2008 until June 2011 and from June 2003 until July 2005, having served most recently as the Director of Financial Reporting and Corporate Accounting with responsibility for all public filings and technical and corporate accounting. From December 2005 until June 2008, Ms. Nichol was with Advanced Metallurgical Group NV serving as Assistant Controller. Ms. Nichol began her career in public accounting with KPMG.

Mr. Phipps was appointed Senior Vice President, General Counsel and Secretary in May 2007. He has global responsibility for the Company's Legal Affairs and he serves as Secretary to the Board of Directors. Mr. Phipps also oversees the Company's Government Affairs activities. Previously, Mr. Phipps served as Associate General Counsel and Corporate Secretary from December 2005 to May 2007. He joined the Company in September 2003 as Associate Counsel and Assistant Secretary. Prior to joining the Company, he served as Vice President and General Counsel of L&N Sales and Marketing, Inc. in Pennsylvania and he practiced law with the firm of Morgan, Lewis & Bockius in Philadelphia, focusing on corporate and securities law, mergers and acquisitions and financial transactions.

Mr. Tornos joined Zimmer Biomet in November 2018 as Group President, Orthopedics, and in December 2019 was appointed Group President, Global Businesses and Americas. Prior to joining Zimmer Biomet, Mr. Tornos served as Worldwide President of the Global Urology, Medical and Critical Care Divisions of Becton, Dickinson and Company ("BD") (and previously, C. R. Bard, Inc. ("Bard")) from June 2017 until October 2018. From June 2017 until BD's acquisition of Bard in December 2017, Mr. Tornos also continued to serve as President, EMEA of Bard, a position to which he was appointed in September 2013. Mr. Tornos joined Bard in August 2011 and, prior to his appointment as

President, EMEA, served as Vice President and General Manager with leadership responsibility for Bard's business in Southern Europe, Central Europe and the Emerging Markets Region of the Middle East and Africa. Before joining Bard, Mr. Tornos served as Vice President and General Manager of the Americas Pharmaceutical and Medical/Imaging Segments of Covidien International from April 2009 to August 2011. Before that, he served as International Vice President, Business Development and Strategy with Baxter International Inc. from July 2008 to April 2009 and, prior to that, Mr. Tornos spent 11 years with Johnson & Johnson in positions of increasing responsibility.

Mr. Upadhyay was appointed Executive Vice President and Chief Financial Officer in July 2019. Prior to joining Zimmer Biomet, Mr. Upadhyay served as Senior Vice President, Global Financial Operations at Bristol-Myers Squibb from November 2016 until June 2019. Before joining Bristol-Myers Squibb, he served as Executive Vice President and Chief Financial Officer of Endo International from September 2013 to November 2016. Prior to his tenure at Endo International, Mr. Upadhyay served as Interim Chief Financial Officer as well as Senior Vice President of Finance, Corporate Controller and Principal Accounting Officer of BD. Prior to his role as BD's Interim Chief Financial Officer and Corporate Controller, Mr. Upadhyay was the Senior Vice President of Global Financial Planning and Analysis and also held the role of Vice President and Chief Financial Officer of BD's international business. Before joining BD in 2010, Mr. Upadhyay held a number of leadership roles across AstraZeneca and Johnson & Johnson. Mr. Upadhyay spent the early part of his career in public accounting with KPMG.

Mr. Yi was appointed President, Asia Pacific in June 2015. He is responsible for the sales, marketing and distribution of products, services and solutions in the Asia Pacific region. Mr. Yi joined the Company in March 2013 as Senior Vice President, Asia Pacific. Previously, he served as Vice President and General Manager of St. Jude Medical for Asia Pacific and Australia from 2005 to 2013. Prior to that, Mr. Yi held several leadership positions over a ten-year period with Boston Scientific Corporation, ultimately serving as Vice President for North Asia.

AVAILABLE INFORMATION

Our Internet address is www.zimmerbiomet.com. We routinely post important information for investors on our website in the "Investor Relations" section, which may be accessed from our homepage at www.zimmerbiomet.com or directly at https://investor.zimmerbiomet.com. We use this website as a means of disclosing material, non-public information and for complying with our disclosure obligations under Regulation FD. Accordingly, investors should monitor the Investor Relations section of our website, in addition to following our press releases, Securities and Exchange Commission ("SEC") filings, public conference calls, presentations and webcasts. Our goal is to maintain the Investor Relations website as a portal through which investors can easily find or navigate to pertinent information about us, free of charge, including:

- our Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K and amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended ("Exchange Act"), as soon as reasonably practicable after we electronically file that material with or furnish it to the SEC;
- announcements of investor conferences and events at which our executives talk about our products and competitive strategies, as well as archives of these events;
- press releases on quarterly earnings, product announcements, legal developments and other material news that we may post from time to time;
- corporate governance information including our Corporate Governance Guidelines, Code of Business Conduct and Ethics, Code of Ethics for Chief Executive Officer and Senior Financial Officers, information concerning our Board of Directors and its committees, including the charters of the Audit Committee, Compensation and Management Development Committee, Corporate Governance Committee and Quality, Regulatory and Technology Committee, and other governance-related policies;
- stockholder services information, including ways to contact our transfer agent and information on how to sign up for direct deposit of dividends or enroll in our dividend reinvestment plan; and
- opportunities to sign up for email alerts and RSS feeds to have information provided in real time.

The information available on our website is not incorporated by reference in, or a part of, this or any other report we file with or furnish to the SEC.

Item 1A. Risk Factors

We operate in a rapidly changing economic and technological environment that presents numerous risks, many of which are driven by factors that we cannot control or predict. Our business, financial condition and results of operations may be impacted by a number of factors. In addition to the factors discussed elsewhere in this report, the following risks and uncertainties could materially harm our business, financial condition or results of operations, including causing our actual results to differ materially from those projected in any forward-looking statements. The following list of significant risk factors is not all-inclusive or necessarily in order of importance. Additional risks and uncertainties not presently known to us, or that we currently deem immaterial, also may materially adversely affect us in future periods. You should carefully consider these risks and uncertainties before investing in our securities.

If we fail to comply with the terms of the DPA that we entered into in January 2017, we may be subject to criminal prosecution and/or exclusion from federal healthcare programs.

On January 12, 2017, we resolved previously-disclosed FCPA matters involving Biomet and certain of its subsidiaries. As part of the settlement, we entered into a DPA with the DOJ. A copy of the DPA is incorporated by reference as an exhibit to this report.

If we do not comply with the terms of the DPA, we could be subject to prosecution for violating the internal controls provisions of the FCPA and the conduct of Biomet and its subsidiaries described in the DPA, which conduct pre-dated our acquisition of Biomet, as well as any new or continuing violations. We could also be subject to exclusion by OIG-HHS from participation in federal healthcare programs, including Medicare, Medicaid and Veterans Administration health programs. Any of these events could have a material adverse effect on our business, financial condition, results of operations and cash flows.

Our restructuring program may not be successful or we may not fully realize the expected cost savings and/or operating efficiencies from our restructuring initiatives.

In December 2019, our Board of Directors approved, and we initiated, a new global restructuring program that includes a restructuring of key businesses to better align our resources with our growth strategies, achieve operating efficiencies that we expect to reduce costs, simplify our organizational structure, accelerate decision-making and allow us to invest in higher priority growth opportunities. Restructuring initiatives involve complex plans and actions that may include, or result in, workforce reductions, global plant closures and/or consolidations, product portfolio rationalizations and asset impairments. Additionally, as a result of restructuring initiatives, we may experience a loss of continuity, loss of accumulated knowledge and/or inefficiencies during transitional periods. Restructuring initiatives present significant risks that may impair our ability to achieve anticipated operating enhancements and/or cost reductions, or otherwise harm our business, including higher than anticipated costs in implementing our restructuring program, as well as management distraction. For more information on our restructuring program, see Note 4 to our consolidated financial statements. If we fail to achieve some or all of the expected benefits of restructuring, it could have a material adverse effect on our competitive position, business, financial condition, results of operations and cash flows.

We may not be able to effectively integrate acquired businesses into our operations or achieve expected cost savings or profitability from our acquisitions.

Our acquisitions involve numerous risks, including:

- unforeseen difficulties in integrating personnel and sales forces, operations, manufacturing, logistics, research and development, information technology, communications, purchasing, accounting, marketing, administration and other systems and processes;
- difficulties harmonizing and optimizing quality systems and operations;
- diversion of financial and management resources from existing operations;
- unforeseen difficulties related to entering geographic regions where we do not have prior experience;
- potential loss of key employees;
- unforeseen risks and liabilities associated with businesses acquired, including any unknown vulnerabilities in acquired technology or compromises of acquired data; and
- inability to generate sufficient revenue or realize sufficient cost savings to offset acquisition or investment costs.

As a result, if we fail to evaluate and execute acquisitions properly, we might not achieve the anticipated benefits of such acquisitions, and we may incur costs in excess of what we anticipate. These risks would likely be greater in the case of larger acquisitions.

Interruption of our manufacturing operations could adversely affect our business, financial condition and results of operations.

We have manufacturing sites all over the world. In some instances, however, the manufacturing of certain of our product lines is concentrated in one or more of our plants. Damage to one or more of our facilities from weather or natural disaster-related events, vulnerabilities in our technology, cyber-attacks against our information systems (such as ransomware attacks), or issues in our manufacturing arising from failure to follow specific internal protocols and procedures, compliance concerns relating to the QSR and Good Manufacturing Practice requirements, equipment breakdown or malfunction or other factors could adversely affect our ability to manufacture our products. In the event of an interruption in manufacturing, we may be unable to move quickly to alternate means of producing affected products or to meet customer demand. In the event of a significant interruption, for example, as a result of a failure to follow regulatory protocols and procedures, we may experience lengthy delays in resuming production of affected products due primarily to the need for regulatory approvals. As a result, we may experience loss of market share, which we may be unable to recapture, and harm to our reputation, which could adversely affect our business, financial condition and results of operations.

Disruptions in the supply of the materials and components used in manufacturing our products or the sterilization of our products by third-party suppliers could adversely affect our business, financial condition and results of operations.

We purchase many of the materials and components used in manufacturing our products from third-party suppliers and we outsource some key manufacturing activities. Certain of these materials and components and outsourced activities can only be obtained from a single source or a limited number of sources due to quality considerations, expertise, costs or constraints resulting from regulatory requirements. In certain cases, we may not be able to establish additional or replacement suppliers for such materials or components or outsourced activities in a timely or cost effective manner, largely as a result of FDA regulations that require validation of materials and components prior to their use in our products and the complex nature of our and many of our suppliers' manufacturing processes. A reduction or interruption in the

supply of materials or components used in manufacturing our products; an inability to timely develop and validate alternative sources if required; or a significant increase in the price of such materials or components could adversely affect our business, financial condition and results of operations.

In addition, many of our products require sterilization prior to sale and we utilize a mix of internal resources and contract sterilizers to perform this service. To the extent we or our contract sterilizers are unable to sterilize our products, whether due to capacity, availability of materials for sterilization, regulatory or other constraints, including federal and state regulations on the use of ethylene oxide, we may be unable to transition to other contract sterilizers, sterilizer locations or sterilization methods in a timely or cost effective manner or at all, which could have a material impact on our results of operations and financial condition.

Moreover, we are subject to the SEC's rule regarding disclosure of the use of certain minerals, known as "conflict minerals" (tantalum, tin and tungsten (or their ores) and gold), which are mined from the Democratic Republic of the Congo and adjoining countries. This rule could adversely affect the sourcing, availability and pricing of materials used in the manufacture of our products, which could adversely affect our manufacturing operations and our profitability. In addition, we are incurring additional costs to comply with this rule, including costs related to determining the source of any relevant minerals and metals used in our products. We have a complex supply chain and we may not be able to sufficiently verify the origins of the minerals and metals used in our products through our due diligence procedures. As a result, we may face reputational challenges with our customers and other stakeholders.

We are subject to costly and complex laws and governmental regulations relating to the development, design, product standards, packaging, advertising, promotion, postmarket surveillance, manufacturing, labeling and marketing of our products, non-compliance with which could adversely affect our business, financial condition and results of operations.

Our global regulatory environment is increasingly stringent, unpredictable and complex. The products we design, develop, manufacture and market are subject to rigorous regulation by the FDA and numerous other supranational, national, federal, regional, state and local governmental authorities. The process of obtaining regulatory approvals and clearances to market these products can be costly and time consuming and approvals might not be granted for future products on a timely basis, if at all. Delays in receipt of, or failure to obtain, approvals for future products could result in delayed realization of product revenues or in substantial additional costs.

Both before and after a product is commercially released, we have ongoing responsibilities under FDA regulations and other supranational, national, federal, regional, state and local requirements globally. Compliance with these requirements, including the QSR, recordkeeping regulations, labeling and promotional requirements and adverse event reporting regulations, is subject to continual review and is monitored rigorously through periodic inspections by the FDA and other regulators, which may result in observations (such as on Form 483), and in some cases warning letters, that require corrective action, or other forms of enforcement. If the FDA or another regulator were to conclude that we are not in compliance with applicable laws or regulations, or that any of our products are ineffective or pose an unreasonable health risk, they could ban such products, detain or seize adulterated or misbranded products, order a recall, repair, replacement, or refund of payment of such products, refuse to grant pending premarket approval applications, refuse to provide certificates for exports, and/or require us to notify healthcare professionals and others that the products present unreasonable risks of substantial harm to the public health. The FDA or other regulators may also impose operating restrictions, including a ceasing of operations at one or more facilities, enjoin and restrain certain violations of applicable law pertaining to our products, seizure of products and assess civil or criminal penalties against our officers, employees or us. The FDA or other regulators could also issue a corporate warning letter or a recidivist warning letter or negotiate the entry of a consent decree of permanent injunction with us, and/or recommend prosecution. Any adverse regulatory action, depending on its magnitude, may restrict us from effectively manufacturing, marketing and selling our products and could have a material adverse effect on our business, financial condition and results of operations.

In 2012, we received a warning letter from the FDA citing concerns relating to certain processes pertaining to products manufactured at our Ponce, Puerto Rico manufacturing facility. In August 2018, we received a warning letter from the FDA related to observed non-conformities with current good manufacturing practice requirements of the QSR at our Warsaw North Campus manufacturing facility. As of February 14, 2020, these warning letters remained pending. Until the violations are corrected, we may become subject to additional regulatory action by the FDA as described above, the FDA may refuse to grant premarket approval applications and/or the FDA may refuse to grant export certificates, any of which could have a material adverse effect on our business, financial condition and results of operations. Additional information regarding these and other FDA regulatory matters can be found in Note 20 to our consolidated financial statements.

Governmental regulations outside the U.S. continue to become increasingly stringent and complex. In the EU, for example, the MDR will become effective in May 2020 and will include significant additional premarket and post-market requirements. Complying with the requirements of this regulation requires us to incur significant expense. Additionally, the availability of EU notified body services certified to the new requirements is limited, which may delay the marketing approval for some of our products under the MDR. Any such delays, or any failure to meet the requirements of the new regulation, could adversely impact our business in the EU and other regions that tie their product registrations to the EU requirements.

Our products and operations are also often subject to the rules of industrial standards bodies, such as the International Standards Organization. If we fail to adequately address any of these regulations, our business could be harmed.

If we fail to comply with healthcare fraud and abuse or data privacy and security laws and regulations, we could face substantial penalties and our business, operations and financial condition could be adversely affected.

The sales, marketing and pricing of products and relationships that medical products companies have with healthcare providers are under increased scrutiny around the world. Our industry is subject to various laws and regulations pertaining to healthcare fraud and abuse, including the False Claims Act, the Anti-Kickback Statute, the Stark law, the Physician Payments Sunshine Act, the Food, Drug, and Cosmetic Act and similar laws and regulations in the U.S. and around the world. In addition, we are subject to various laws concerning anti-corruption and anti-bribery matters (including the FCPA), sales to countries or persons subject to economic sanctions and other matters affecting our international operations. Violations of these laws are punishable by criminal and/or civil sanctions, including, in some instances, fines, imprisonment and, within the U.S., exclusion from participation in government healthcare programs, including Medicare, Medicaid and Veterans Administration health programs. These laws are administered by, among others, the DOJ, the OIG-HHS, the SEC, the OFAC, the Bureau of Industry and Security of the U.S. Department of Commerce and state attorneys general.

We are also subject to federal, state and international data privacy and security laws and regulations that govern the collection, use, disclosure, transfer, storage, disposal and protection of health-related and other personal information. The FDA has issued guidance to which we may be subject concerning data security for medical devices. The FDA and the DHS have also issued urgent safety communications regarding cybersecurity vulnerabilities of certain medical devices, which vulnerabilities may apply to some of our current or future devices.

In addition, certain of our affiliates are subject to privacy, security and breach notification regulations promulgated under HIPAA. HIPAA governs the use, disclosure, and security of protected health information by HIPAA "covered entities" and their "business associates." Covered entities are health plans, health care clearinghouses and health care providers that engage in specific types of electronic transactions. A business associate is any person or entity (other than members of a covered entity's workforce) that performs a service on behalf of a covered entity involving the use or disclosure of protected health information. HHS (through the Office for Civil Rights) has direct enforcement authority against covered entities and business associates with regard to compliance with HIPAA regulations. On December 12, 2018, the Office for Civil Rights of HHS issued a request for information seeking input from the public on how the HIPAA regulations could be modified to amend existing obligations relating to the processing of protected health information. We will monitor this process and assess the impact of changes to the HIPAA regulations to our business.

In addition to the FDA guidance and HIPAA regulations described above, a number of U.S. states have also enacted data privacy and security laws and regulations that govern the collection, use, disclosure, transfer, storage, disposal, and protection of personal information, such as social security numbers, medical and financial information and other information. These laws and regulations may be more restrictive and not preempted by U.S. federal laws. For example, several U.S. territories and all 50 states now have data breach laws that require timely notification to individuals, and at times regulators, the media or credit reporting agencies, if a company has experienced the unauthorized access or acquisition of personal information. Other state laws include the CCPA, which was signed into law on June 28, 2018 and largely took effect on January 1, 2020. The CCPA, among other things, contains new disclosure obligations for businesses that collect personal information about California residents and affords those individuals numerous rights relating to their personal information that may affect our ability to use personal information or share it with our business partners. Regulations from the California Attorney General have not been finalized, and it is expected that additional amendments to the CCPA will be introduced. Meanwhile, over fifteen other states have considered privacy laws like the CCPA, and in October 2019, Nevada enacted a similar but generally less restrictive privacy law. We will continue to monitor and assess the impact of these state laws, which may impose substantial penalties for violations, impose significant costs for investigations and compliance, allow private class-action litigation and carry significant potential liability for our business.

Outside of the U.S., data protection laws, including the GDPR and LGPD, also apply to some of our operations in the countries in which we provide services to our customers. Legal requirements in these countries relating to the collection, storage, processing and transfer of personal data continue to evolve. The GDPR imposes, among other things, data protection requirements that include strict obligations and restrictions on the ability to collect, analyze and transfer EU personal data, a requirement for prompt notice of data breaches to data subjects and supervisory authorities in certain circumstances, and possible substantial fines for any violations (including possible fines for certain violations of up to the greater of 20 million Euros or 4% of total worldwide annual turnover of the preceding financial year). Governmental authorities around the world have enacted similar types of legislative and regulatory requirements concerning data protection, and additional governments are considering similar legal frameworks.

The interpretation and enforcement of the laws and regulations described above are uncertain and subject to change, and may require substantial costs to monitor and implement compliance with any additional requirements. Failure to comply with U.S. and international data protection laws and regulations could result in government enforcement actions (which could include substantial civil and/or criminal penalties), private litigation and/or adverse publicity and could

have a material adverse impact on our business, financial condition or results of operations.

We incurred substantial additional indebtedness in connection with previous mergers and acquisitions and may not be able to meet all of our debt obligations, and the phase-out, replacement or unavailability of LIBOR and/or other interest rate benchmarks could adversely affect our indebtedness.

We incurred substantial additional indebtedness in connection with previous mergers and acquisitions. At December 31, 2019, our total indebtedness was $8.2 billion, as compared to $1.4 billion at December 31, 2014. As of December 31, 2019, our debt service obligations, comprised of principal and interest (excluding leases and equipment notes), during the next 12 months are expected to be $1.7 billion. As a result of the increase in our debt, demands on our cash resources have increased. The increased level of debt could, among other things:

- require us to dedicate a large portion of our cash flow from operations to the servicing and repayment of our debt, thereby reducing funds available for working capital, capital expenditures, research and development expenditures and other general corporate requirements;
- limit our ability to obtain additional financing to fund future working capital, capital expenditures, research and development expenditures and other general corporate requirements;
- limit our flexibility in planning for, or reacting to, changes in our business and the industry in which we operate;
- restrict our ability to make strategic acquisitions or dispositions or to exploit business opportunities;
- place us at a competitive disadvantage compared to our competitors that have less debt;
- adversely affect our credit rating, with the result that the cost of servicing our indebtedness might increase and our ability to obtain surety bonds could be impaired;
- adversely affect the market price of our common stock; and
- limit our ability to apply proceeds from a future offering or asset sale to purposes other than the servicing and repayment of debt.

In addition, the interest rates applicable to certain of our debt obligations are based on a fluctuating rate of interest determined by reference to the London Interbank Offered Rate ("LIBOR"), Euro Interbank Offered Rate ("EURIBOR") and/or Tokyo Interbank Offered Rate ("TIBOR"). Any increase in interest rates applicable to our debt obligations would increase our cost of borrowing and could adversely affect our financial position, results of operations or cash flows. Further, in July 2017, the U.K.'s Financial Conduct Authority, which regulates LIBOR, announced that it intends to stop persuading or compelling banks to submit rates for the calculation of LIBOR after 2021. In response to concerns regarding the future of LIBOR, the Board of Governors of the Federal Reserve System and the Federal Reserve Bank of New York convened the Alternative Reference Rates Committee ("ARRC") to identify alternatives to LIBOR. The ARRC has recommended a benchmark replacement waterfall to assist issuers in continued capital market entry while safeguarding against LIBOR's discontinuation. The initial steps in the ARRC's recommended provision reference variations of the Secured Overnight Financing Rate ("SOFR"). At this time, it is not possible to predict whether SOFR will attain market traction as a LIBOR replacement. Additionally, it is uncertain if LIBOR will cease to exist after calendar year 2021, or whether additional reforms to LIBOR may be enacted, or whether alternative reference rates will gain market acceptance as a replacement for LIBOR. Further, other central banks have convened working groups to determine replacements or reforms of other interest rate benchmarks, such as EURIBOR, and it is expected, although not known, that a transition away from the use of certain of these other interest rate benchmarks will occur over the course of the next few years and alternative reference rates will be established.

Certain of our debt obligations that are based on LIBOR will mature before the end of 2021. However, the revolving credit agreement that we entered into on November 1, 2019 (the "2019 Credit Agreement") has an initial maturity date of November 1, 2024. In anticipation of LIBOR's phase out, the 2019 Credit Agreement provides for alternative base rates as well as a transition mechanism for selecting a benchmark replacement rate for LIBOR, with such benchmark replacement rate to be mutually agreed with the general administrative agent and our lenders. There can be no assurance that we will be able to reach an agreement with our lenders on any such replacement benchmark before experiencing adverse effects due to changes in interest rates, if at all. We will continue to monitor the situation and address the potential reference rate changes in future debt obligations that we may incur. Accordingly, the potential effect of the phase-out, replacement or unavailability of LIBOR, or the unavailability of any other interest rate benchmark such as EURIBOR or TIBOR, on our cost of capital cannot yet be determined. Further, the use of an alternative base rate or a benchmark replacement rate as a basis for calculating interest with respect to any outstanding variable rate indebtedness could lead to an increase in the interest we pay and a corresponding increase in our costs of capital or otherwise have a material adverse impact on our business, financial condition or results of operations.

We are increasingly dependent on sophisticated information technology and if we fail to effectively maintain or protect our information systems or data, including from data breaches, our business could be adversely affected.

We are increasingly dependent on sophisticated information technology for our products and infrastructure. As a result of technology initiatives, recently enacted regulations, changes in our system platforms and integration of new business acquisitions, we have been consolidating and integrating the number of systems we operate and have upgraded and expanded our information systems capabilities. In addition, some of our products and services incorporate software or information technology that collects data regarding patients and patient therapy, and some products or software we provide to customers connect to our systems for maintenance and other purposes. We also have outsourced

elements of our operations to third parties, and, as a result, we manage a number of third-party suppliers who may or could have access to our confidential information, including, but not limited to, intellectual property, proprietary business information and personal information of patients, employees and customers (collectively "Confidential Information").

Our information systems, and those of third-party suppliers with whom we contract, require an ongoing commitment of significant resources to maintain, protect and enhance existing systems and develop new systems to keep pace with continuing changes in information technology, evolving systems and regulatory standards and the increasing need to protect patient and customer information. In addition, given their size and complexity, these systems could be vulnerable to service interruptions or to security breaches from inadvertent or intentional actions by our employees, third-party suppliers and/or business partners, or from cyber-attacks by malicious third parties attempting to gain unauthorized access to our products, systems or Confidential Information.

Like other large multi-national corporations, we have experienced instances of successful phishing attacks on our email systems and expect to be subject to similar attacks in the future. We also are subject to other cyber-attacks, including state-sponsored cyber-attacks, industrial espionage, insider threats, computer denial-of-service attacks, computer viruses, ransomware and other malware, payment fraud or other cyber incidents. Our incident response efforts, business continuity procedures and disaster recovery planning may not be sufficient for all eventualities. If we fail to maintain or protect our information systems and data integrity effectively, we could:

- lose existing customers;
- have difficulty attracting new customers;
- have problems in determining product cost estimates and establishing appropriate pricing;
- suffer outages or disruptions in our operations or supply chain;
- have difficulty preventing, detecting, and controlling fraud;
- have disputes with customers, physicians, and other healthcare professionals;
- have regulatory sanctions or penalties imposed;
- incur increased operating expenses;
- be subject to issues with product functionality that may result in a loss of data, risk to patient safety, field actions and/or product recalls;
- incur expenses or lose revenues as a result of a data privacy breach; or
- suffer other adverse consequences.

While we have invested heavily in the protection of our data and information technology, there can be no assurance that our activities related to consolidating the number of systems we operate, upgrading and expanding our information systems capabilities, protecting and enhancing our systems and implementing new systems will be successful. We will continue to dedicate significant resources to protect against unauthorized access to our systems and work with government authorities to detect and reduce the risk of future cyber incidents; however, cyber-attacks are becoming more sophisticated, frequent and adaptive. Therefore, despite our efforts, we cannot assure that cyber-attacks or data breaches will not occur or that systems issues will not arise in the future. Any significant breakdown, intrusion, breach, interruption, corruption or destruction of these systems could have a material adverse effect on our business and reputation.

Our success depends on our ability to effectively develop and market our products against those of our competitors.

We operate in a highly competitive environment. Our present or future products could be rendered obsolete or uneconomical by technological advances by one or more of our present or future competitors or by other therapies, including biological therapies. To remain competitive, we must continue to develop and acquire new products and technologies and improve existing products and technologies. Competition is primarily on the basis of:

- technology;
- innovation;
- quality;
- reputation;
- customer service; and
- pricing.

In markets outside of the U.S., other factors influence competition as well, including:

- local distribution systems;
- complex regulatory environments; and
- differing medical philosophies and product preferences.

Our competitors may:

- have greater financial, marketing and other resources than us;
- respond more quickly to new or emerging technologies;
- undertake more extensive marketing campaigns;
- adopt more aggressive pricing policies; or
- be more successful in attracting potential customers, employees and strategic partners.

Any of these factors, alone or in combination, could cause us to have difficulty maintaining or increasing sales of our products.

If we fail to retain the independent agents and distributors upon whom we rely heavily to market our products, customers may not buy our products and our revenue and profitability may decline.

Our marketing success in the U.S. and abroad depends significantly upon our agents' and distributors' sales and service expertise in the marketplace. Many of these agents have developed professional relationships with existing and potential customers because of the agents' detailed knowledge of products and instruments. A loss of a significant number of our agents could have a material adverse effect on our business and results of operations.

If we do not introduce new products in a timely manner, our products may become obsolete over time, customers may not buy our products and our revenue and profitability may decline.

Demand for our products may change, in certain cases, in ways we may not anticipate because of:

- evolving customer needs;
- changing demographics;
- slowing industry growth rates;
- declines in the musculoskeletal implant market;
- the introduction of new products and technologies;
- evolving surgical philosophies; and
- evolving industry standards.

Without the timely introduction of new products and enhancements, our products may become obsolete over time. If that happens, our revenue and operating results would suffer. The success of our new product offerings will depend on several factors, including our ability to:

- properly identify and anticipate customer needs;
- commercialize new products in a timely manner;
- manufacture and deliver instruments and products in sufficient volumes on time;
- differentiate our offerings from competitors' offerings;
- achieve positive clinical outcomes for new products;
- satisfy the increased demands by healthcare payors, providers and patients for shorter hospital stays, faster post-operative recovery and lower-cost procedures;
- innovate and develop new materials, product designs and surgical techniques; and
- provide adequate medical education relating to new products.

In addition, new materials, product designs and surgical techniques that we develop may not be accepted quickly, in some or all markets, because of, among other factors:

- entrenched patterns of clinical practice;
- the need for regulatory clearance; and
- uncertainty with respect to third-party reimbursement.

Moreover, innovations generally require a substantial investment in research and development before we can determine their commercial viability and we may not have the financial resources necessary to fund the production. In addition, even if we are able to successfully develop enhancements or new generations of our products, these enhancements or new generations of products may not produce revenue in excess of the costs of development and they may be quickly rendered obsolete by changing customer preferences or the introduction by our competitors of products embodying new technologies or features.

If third-party payors decline to reimburse our customers for our products or reduce reimbursement levels, the demand for our products may decline and our ability to sell our products profitably may be harmed.

We sell our products and services to hospitals, doctors, dentists and other healthcare providers, all of which receive reimbursement for the healthcare services provided to their patients from third-party payors, such as domestic and international government programs, private insurance plans and managed care programs. These third-party payors may deny reimbursement if they determine that a product or service used in a procedure was not in accordance with cost-effective treatment methods, as determined by the third-party payor, or was used for an unapproved indication. Third-party payors may also decline to reimburse for experimental procedures and products.

In addition, third-party payors are increasingly attempting to contain healthcare costs by limiting both coverage and the level of reimbursement for medical products and services. If third-party payors reduce reimbursement levels to hospitals and other healthcare providers for our products, demand for our products may decline, or we may experience increased pressure to reduce the prices of our products, which could have a material adverse effect on our sales and results of operations.

We have also experienced downward pressure on product pricing and other effects of healthcare reform in our international markets. If key participants in government healthcare systems reduce the reimbursement levels for our products, our sales and results of operations may be adversely affected.

The ongoing cost-containment efforts of healthcare purchasing organizations may have a material adverse effect on our results of operations.

Many customers for our products have formed group purchasing organizations in an effort to contain costs. Group purchasing organizations negotiate pricing arrangements with medical supply manufacturers and distributors, and these negotiated prices are made available to a group purchasing organization's affiliated hospitals and other members. If we are not one of the providers selected by a group purchasing organization, affiliated hospitals and other members may be less likely to purchase our products, and, if the group purchasing organization has negotiated a strict compliance contract for another manufacturer's products, we may be precluded from making sales to members of the group purchasing organization for the duration of the contractual arrangement. Our failure to respond to the cost-containment efforts of group purchasing organizations may cause us to lose market share to our competitors and could have a material adverse effect on our sales and results of operations.

We conduct a significant amount of our sales activity outside of the U.S., which subjects us to additional business risks and may cause our profitability to decline due to increased costs.

We sell our products in more than 100 countries and derived approximately 40 percent of our net sales in 2019 from outside the U.S. We intend to continue to pursue growth opportunities in sales internationally, including in emerging markets, which could expose us to additional risks associated with international sales and operations. Our international operations are, and will continue to be, subject to a number of risks and potential costs, including:

- changes in foreign medical reimbursement policies and programs;
- changes in foreign regulatory requirements, such as more stringent requirements for regulatory clearance of products;
- differing local product preferences and product requirements;
- fluctuations in foreign currency exchange rates;
- diminished protection of intellectual property in some countries outside of the U.S.;

- trade protection measures, import or export requirements, new or increased tariffs, trade embargoes and sanctions and other trade barriers, which may prevent us from shipping products to a particular market and may increase our operating costs;
- foreign exchange controls that might prevent us from repatriating cash earned in countries outside the U.S.;
- complex data privacy requirements and labor relations laws;
- extraterritorial effects of U.S. laws such as the FCPA;
- effects of foreign anti-corruption laws, such as the UK Bribery Act;
- difficulty in staffing and managing foreign operations;
- labor force instability;
- potentially negative consequences from changes in tax laws; and
- political, social and economic instability and uncertainty, including sovereign debt issues.

Violations of foreign laws or regulations could result in fines, criminal sanctions against us, our officers or our employees, prohibitions on the conduct of our business and damage to our reputation.

We have significant global sales and operations and face risks related to health epidemics that could impact our sales and operating results.

Our business could be adversely affected by the effects of a widespread outbreak of contagious disease, including the recent outbreak of respiratory illness caused by a novel coronavirus first identified in Wuhan, Hubei Province, China. Any outbreak of contagious diseases, and other adverse public health developments, could have a material adverse effect on our business operations. These could include disruptions or restrictions on our ability to travel or to distribute our products, as well as temporary closures of our facilities or the facilities of our suppliers or customers, the deferral of elective procedures in impacted countries or the temporary suspension of operations by us or our suppliers or customers. Any disruption of our operations, or those of our suppliers or customers, would likely impact our sales and operating results. In addition, a significant outbreak of contagious diseases in the human population could result in a widespread health crisis that could adversely affect the economies and financial markets of many countries, resulting in an economic downturn that could affect demand for our products and likely impact our operating results.

We may have additional tax liabilities.

We are subject to income taxes in the U.S. and many foreign jurisdictions. Significant judgment is required in determining our worldwide provision for income taxes. In the ordinary course of our business, there are many transactions and calculations where the ultimate tax determination is uncertain. We are regularly under audit by tax authorities. Although we believe our tax estimates are reasonable, the final determination of tax audits and any related litigation could be materially different from our historical income tax provisions and accruals. The results of an audit or litigation could have a material effect on our financial statements in the period or periods for which that determination is made.

The Tax Cuts and Jobs Act of 2017 was signed into law on December 22, 2017 (the "2017 Tax Act"), with significant changes to the U.S. corporate income tax system, including a federal corporate income tax rate reduction from 35 percent to 21 percent, limitations on the deductibility of interest expense, and the transition of U.S. international taxation from a worldwide tax system to a territorial tax system. Our tax expense and cash flow could be impacted in the event of adverse future regulatory guidance provided by the U.S. Treasury clarifying certain aspects of the 2017 Tax Act or other changes to the U.S. corporate income tax system.

Other changes in the tax laws of the jurisdictions where we do business, including an increase in tax rates or an adverse change in the treatment of an item of income or expense, could result in a material increase in our tax expense. For example, changes in the tax laws of foreign jurisdictions could arise as a result of the "base erosion and profit shifting" project undertaken by the Organisation for Economic Co-operation and Development ("OECD"). The OECD, which represents a coalition of member countries, has recommended changes to numerous long-standing tax principles. These changes, as adopted by countries, could increase tax uncertainty and may adversely affect our provision for income taxes.

We are subject to risks arising from currency exchange rate fluctuations, which can increase our costs, cause our profitability to decline and expose us to counterparty risks.

A substantial portion of our foreign revenues is generated in Europe and Japan. The U.S. Dollar value of our foreign-generated revenues varies with currency exchange rate fluctuations. Significant increases in the value of the U.S. Dollar relative to the Euro, the Japanese Yen, the Swiss Franc or other currencies could have a material adverse effect on our results of operations. Although we address currency risk management through regular operating and financing activities, and, on a limited basis, through the use of derivative financial instruments, those actions may not prove to be fully effective or may create additional financial obligations for us. Further, if the counterparties to the derivative financial instrument transactions fail to honor their obligations due to financial distress or otherwise, we would be exposed to potential losses or the inability to recover anticipated gains from those transactions.

Pending and future product liability claims and litigation could adversely impact our financial condition and results of operations and impair our reputation.

Our business exposes us to potential product liability risks that are inherent in the design, manufacture and marketing of medical devices. In the ordinary course of business, we are the subject of product liability lawsuits alleging that component failures, manufacturing flaws, design defects or inadequate disclosure of product-related risks or product-related information resulted in an unsafe condition or injury to patients. As discussed further in Note 20 to our consolidated financial statements, we are defending product liability lawsuits relating to the Durom® Acetabular Component ("Durom Cup"), certain products within the M/L Taper and

M/L Taper with Kinectiv® Technology hip stems and Versys® Femoral Head implants, and the M2a-Magnum™ hip system. We are also currently defending a number of other product liability lawsuits and claims related to various other products. Any product liability claim brought against us, with or without merit, can be costly to defend. Product liability lawsuits and claims, safety alerts or product recalls, regardless of their ultimate outcome, could have a material adverse effect on our business and reputation and on our ability to attract and retain customers.

We are substantially dependent on patent and other proprietary rights, and failing to protect such rights or to be successful in litigation related to our rights or the rights of others may result in our payment of significant monetary damages and/or royalty payments, negatively impact our ability to sell current or future products, or prohibit us from enforcing our patent and other proprietary rights against others.

Claims of intellectual property infringement and litigation regarding patent and other intellectual property rights are commonplace in our industry and are frequently time consuming and costly. At any given time, we may be involved as either plaintiff or defendant in a number of patent infringement actions, the outcomes of which may not be known for prolonged periods of time. While it is not possible to predict the outcome of patent and other intellectual property litigation, such litigation could result in our payment of significant monetary damages and/or royalty payments, negatively impact our ability to sell current or future products, or prohibit us from enforcing our patent and proprietary rights against others, which could have a material adverse effect on our business and results of operations. As discussed further in Note 20 to our consolidated financial statements, in 2015 we paid a compensatory damages award of approximately $90 million and in March 2019 we paid approximately $168 million related to an award of treble damages and attorneys' fees in a patent infringement lawsuit.

Our success depends in part on our proprietary technology, processes, methodologies and information. We rely on a combination of patent, copyright, trademark, trade secret and other intellectual property laws and nondisclosure, license, assignment and confidentiality arrangements to establish, maintain and protect our proprietary rights, as well as the intellectual property rights of third parties whose assets we license. However, the steps we have taken to protect our intellectual property rights, and the rights of those from whom we license intellectual property, may not be adequate to prevent unauthorized use, misappropriation or theft of our intellectual property. Further, our currently pending or future patent applications may not result in patents being issued to us, patents issued to or licensed by us in the past or in the future may be challenged or circumvented by competitors, and such patents may be found invalid, unenforceable or insufficiently broad to protect our technology or to provide us with any competitive advantage. Third parties could obtain patents that may require us to negotiate licenses to conduct our business, and the required licenses may not be available on reasonable terms or at all. We also cannot be certain that others will not independently develop substantially equivalent proprietary information.

In addition, intellectual property laws differ in various jurisdictions in which we operate and are subject to change at any time, which could further restrict our ability to protect our intellectual property and proprietary rights. In particular, a portion of our revenues is derived from jurisdictions where adequately protecting intellectual property rights may prove more challenging or impossible. We may also not be able to detect unauthorized uses or take timely and effective steps to remedy unauthorized conduct. To prevent or respond to unauthorized uses of our intellectual property, we might be required to engage in costly and time-consuming litigation or other proceedings and we may not ultimately prevail. Any failure to establish, maintain or protect our intellectual property or proprietary rights could have a material adverse effect on our business, financial condition, or results of operations.

We are involved in legal proceedings that may result in adverse outcomes.

In addition to intellectual property and product liability claims and lawsuits, we are involved in various commercial and securities litigation and claims and other legal proceedings that arise from time to time in the ordinary course of our business. For example, as discussed further in Note 20 to our consolidated financial statements, we are defending a purported class action lawsuit, *Shah v. Zimmer Biomet Holdings, Inc. et al.,* filed against us, certain of our current and former officers, certain current and former members of our Board of Directors, and certain former stockholders of ours who sold shares of our common stock in secondary public offerings in 2016, alleging that we and other defendants violated federal securities laws by making materially false and/or misleading statements and/or omissions about our compliance with FDA regulations and our ability to continue to accelerate our organic revenue growth rate in the second half of 2016. There have also been four shareholder derivative actions filed purportedly on our behalf against certain of our current and former directors and officers and certain former stockholders of ours who sold shares of our common stock in secondary public offerings in 2016, alleging breaches of fiduciary duties and insider trading, based on substantially the same factual allegations as *Shah.* Although we believe there are substantial defenses in these matters, litigation and other claims are subject to inherent uncertainties and management's view of these matters may change in the future. Given the uncertain nature of legal proceedings generally, we are not able in all cases to estimate the amount or range of loss that could result from an unfavorable outcome. We could in the future incur judgments or enter into settlements of claims that could have a material adverse effect on our results of operations in any particular period.

Future material impairments in the carrying value of our intangible assets, including goodwill, would negatively affect our operating results.

Goodwill and intangible assets represent a significant portion of our assets. At December 31, 2019, we had $9.6 billion in goodwill and $7.3 billion of intangible assets. The

goodwill results from our acquisition activity and represents the excess of the consideration transferred over the fair value of the net assets acquired. We assess at least annually whether events or changes in circumstances indicate that the carrying value of our intangible assets may not be recoverable. As discussed further in Note 10 to our consolidated financial statements, we recorded goodwill impairment charges of $975.9 million in 2018. If the operating performance at one or more of our reporting units falls significantly below current levels, if competing or alternative technologies emerge, if market conditions or future cash flow estimates for one or more of our businesses decline, or as a result of restructuring initiatives pursuant to which we reorganize our reporting units, we could be required to record additional goodwill impairment charges. Any write-off of a material portion of our goodwill or unamortized intangible assets would negatively affect our results of operations.

Developments relating to the UK's exit from the EU could adversely affect us.

The UK held a referendum in June 2016 in which voters chose to leave the EU, commonly referred to as "Brexit". Following a protracted period of negotiation, the UK ceased to be a member of the EU on January 31, 2020, after the ratification and approval of a withdrawal agreement by the EU and the UK. The withdrawal agreement provides for a transition period until December 31, 2020 (the "Transition Period"), during which the terms of the future trading relationship between the EU and the UK will be negotiated. Throughout the Transition Period, the legal and regulatory framework as between the UK and the EU will remain the same.

Brexit and the perceptions as to its potential impact have and may continue to adversely affect business activity and economic conditions in Europe and globally and could contribute to instability in global financial and foreign exchange markets both during and after the Transition Period. Brexit could also have the effect of disrupting the free movement of goods, services and people between the UK and the EU through the imposition of tariffs, custom inspections, and/or migration restrictions. The future relationship for medical products regulation and trade between the UK and the EU is currently uncertain and any adjustments we make to our business and operations as a result of Brexit could result in significant expense and take significant time to complete. Brexit could also result in the UK or the EU significantly altering its regulations affecting the clearance and approval of medical products. In addition, as a result of Brexit, other European countries may seek to conduct referenda with respect to their continuing membership with the EU. If there is no agreed upon long-term trading arrangement by the end of the Transition Period (a so-called "hard Brexit"), it would likely have a significant adverse impact on labor and trade and create significant short-term currency volatility.

Given these possibilities and others we may not anticipate, as well as the lack of comparable precedent, the full extent to which we will be affected by Brexit is uncertain. Any of the potential negative effects of Brexit could adversely affect our business, results of operations and financial condition.

Anti-takeover provisions in our organizational documents could delay or prevent a change of control.

Certain provisions of our Restated Certificate of Incorporation, our Restated By-Laws and the Delaware General Corporation Law may have an anti-takeover effect and may delay, defer or prevent a merger, acquisition, tender offer, takeover attempt or other change of control transaction that a stockholder might consider in its best interest, including those attempts that might result in a premium over the market price for the shares held by our stockholders.

These provisions provide for, among other things:

- the ability of our board of directors to issue one or more series of preferred stock without further stockholder action;
- advance notice for nominations of directors by stockholders and for stockholders to include matters to be considered at our annual meetings;
- certain limitations on convening special stockholder meetings; and
- the prohibition on engaging in a "business combination" with an "interested stockholder" for three years after the time at which a person became an interested stockholder unless certain conditions are met, as set forth in Section 203 of the Delaware General Corporation Law.

These anti-takeover provisions could make it more difficult for a third party to acquire us, even if the third party's offer may be considered beneficial by many of our stockholders. As a result, our stockholders may be limited in their ability to obtain a premium for their shares.

Our Restated By-Laws designate certain Delaware courts as the sole and exclusive forum for certain types of actions and proceedings that may be initiated by our stockholders, which could limit our stockholders' ability to obtain a favorable judicial forum for disputes with us or our directors, officers or other employees.

Our Restated By-Laws provide that, unless we consent in writing to the selection of an alternative forum, a state court located within the State of Delaware (or, if no state court located in the State of Delaware has jurisdiction, the federal district court for the District of Delaware) will be the sole and exclusive forum for any stockholder (including any beneficial owner) to bring (i) any derivative action or proceeding brought on our behalf, (ii) any action asserting a claim of breach of fiduciary duty owed by any of our directors, officers or other employees to us or our stockholders, (iii) any action asserting a claim against us or any of our directors, officers or other employees arising pursuant to any provision of the Delaware General Corporation Law or our Restated Certificate of Incorporation or our Restated By-Laws, as either may be amended from time to time, or (iv) any action asserting a claim against us or any of our directors, officers or other employees governed by the internal affairs doctrine. Any person or entity purchasing or otherwise acquiring any interest in shares of our common stock is deemed to have received notice of and consented to the foregoing provisions. This choice of forum provision may limit a stockholder's ability to bring a claim in a judicial forum that it finds favorable for disputes with us or our directors, officers or other employees, which may discourage such lawsuits against us and our directors, officers and

employees. Alternatively, if a court were to find this choice of forum provision inapplicable to, or unenforceable in respect of, one or more of the specified types of actions or proceedings, we may incur additional costs associated with resolving such matters in other jurisdictions, which could adversely affect our business, financial condition or results of operations.

Item 1B. Unresolved Staff Comments

Not Applicable.

Item 2. Properties

We own or lease approximately 340 different facilities around the world, of which approximately half are in the U.S. Our corporate headquarters is in Warsaw, Indiana. Warsaw, Indiana is also home to our most significant manufacturing, research and development ("R&D"), and other business activities for our Knees, Hips and S.E.T. product categories. Our Spine, CMF, Office Based Technologies and Dental product categories also have business unit headquarters located in the U.S. that are the primary facilities for these product categories' manufacturing, R&D and other business activities. Internationally, our EMEA regional headquarters is in Switzerland and our Asia Pacific regional headquarters is in Singapore.

We have approximately 30 manufacturing locations in the U.S. and internationally. Our most significant locations outside of the U.S. are in Switzerland, Ireland, the U.K., China, and Puerto Rico. We primarily own our manufacturing facilities in the U.S.; internationally, we occupy both owned and leased manufacturing facilities.

We maintain sales and administrative offices and warehouse and distribution facilities in more than 40 countries around the world. These local market facilities are primarily leased due to common businesses practices and to allow us to be more adaptable to changing needs in the market.

We distribute our products both through large, centralized warehouses and through smaller, market specific facilities, depending on the needs of the market. We maintain large, centralized warehouses in the U.S. and the Netherlands to be able to efficiently distribute our products to customers in the U.S. and EMEA.

We believe that all of the facilities and equipment are in good condition, well maintained and able to operate at present levels. We believe the current facilities, including manufacturing, warehousing, R&D and office space, provide sufficient capacity to meet ongoing demands.

Item 3. Legal Proceedings

Information pertaining to certain legal proceedings in which we are involved can be found in Note 20 to our consolidated financial statements included in Part II, Item 8 of this report and is incorporated herein by reference.

Item 4. Mine Safety Disclosures

Not Applicable.

PART II

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

Our common stock is traded on the New York Stock Exchange and the SIX Swiss Exchange under the symbol "ZBH." As of February 7, 2020, there were approximately 17,900 holders of record of our common stock. A substantially greater number of holders of our common stock are "street name" or beneficial holders, whose shares of record are held by banks, brokers and other financial institutions.

We expect to continue paying cash dividends on a quarterly basis; however, future dividends are subject to approval of the Board of Directors and may be adjusted as business needs or market conditions change.

The information required by this Item concerning equity compensation plans is incorporated herein by reference to Item 12 of this report.

Item 6. Selected Financial Data

The financial information for each of the past five years ended December 31 is set forth below (in millions, except per share amounts):

	2019	2018	2017	2016	2015 [1][2]
STATEMENT OF EARNINGS DATA					
Net sales	$ 7,982.2	$ 7,932.9	$ 7,803.3	$ 7,668.4	$ 5,997.8
Net earnings (loss) of Zimmer Biomet Holdings, Inc.	1,131.6	(379.2)	1,813.8	305.9	147.0
Earnings (loss) per common share					
Basic	$ 5.52	$ (1.86)	$ 8.98	$ 1.53	$ 0.78
Diluted	5.47	(1.86)	8.90	1.51	0.77
Dividends declared per share of common stock	$ 0.96	$ 0.96	$ 0.96	$ 0.96	$ 0.88
Average common shares outstanding					
Basic	205.1	203.5	201.9	200.0	187.4
Diluted	206.7	203.5	203.7	202.4	189.8
BALANCE SHEET DATA					
Total assets	$24,638.7	$24,126.8	$26,014.0	$26,684.4	$27,160.6
Long-term debt	6,721.4	8,413.7	8,917.5	10,665.8	11,497.4
Other long-term obligations	2,083.0	2,015.7	2,291.3	3,967.2	4,155.9
Stockholders' equity	12,392.8	11,276.1	11,735.5	9,669.9	9,889.4

[1] Effective January 1, 2018 we adopted Accounting Standards Update 2014-09 – Revenue from Contracts with Customers (Topic 606). We adopted this new standard using the retrospective method, which resulted in us restating the 2017 and 2016 periods. The 2015 period has not been restated.
[2] On June 24, 2015 we acquired LVB Acquisition, Inc. Accordingly, the results of this significant acquisition have only been reflected in 2015 starting on that date.

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

The following discussion and analysis should be read in conjunction with the consolidated financial statements and the corresponding notes included elsewhere in this Annual Report on Form 10-K. Certain percentages presented in this discussion and analysis are calculated from the underlying whole-dollar amounts and therefore may not recalculate from the rounded numbers used for disclosure purposes. Certain amounts in the 2018 and 2017 consolidated financial statements have been reclassified to conform to the 2019 presentation. The following discussion, analysis and comparisons generally focus on the operating results for the years ended December 31, 2019 and 2018. Discussion, analysis and comparisons of the years ended December 31, 2018 and 2017 that are not included in this Form 10-K can be found in "Management's Discussion and Analysis of Financial Condition and Results of Operations" in Part II, Item 7 of the Company's Annual Report on Form 10-K for the year ended December 31, 2018.

EXECUTIVE LEVEL OVERVIEW

2019 Financial Highlights

In 2019, our net sales increased by 0.6 percent compared to 2018. We estimate changes in volume/mix of our products and pricing had a positive effect of 2.2 percent on our 2019 sales while changes in foreign currency exchange rates had a negative effect of 1.6 percent. Notably, our sales growth was higher in the second half of the year compared to the first half of the year primarily due to various product launches in our Knees product category, which drove improved commercial execution. The improved second half performance was present in all of our product categories and geographic regions. Additionally, the negative impact of changes in foreign currency exchange rates was less in the second half of 2019 compared to the first half.

Our net earnings increased by more than $1.5 billion in 2019 from 2018. We had significant goodwill and intangible asset impairments and litigation-related charges in 2018, which contributed to a net loss that year. In 2019, expenses related to quality remediation, as well as acquisition and integration, declined due to the continued progress in completing those projects. Higher sales, lower interest expense and the recognition of a deferred tax benefit related to Switzerland tax reform resulted in the significant increase in earnings in 2019 compared to 2018.

2020 Outlook

We believe that the improved sales performance in the second half of 2019 will continue into 2020. We estimate sales growth in 2020 compared to 2019 will be in a range of 2.5 percent to 3.5 percent. We anticipate the impact from changes in foreign currency exchange rates will be minimal for 2020. We expect to be able to leverage the sales growth into higher operating profits. Additionally, we expect reductions in quality remediation costs, as well as other various project costs, as we complete these initiatives. We have recently initiated restructuring activities designed to reduce our operating costs in the long-term. These activities are expected to result in expenses of approximately $350 million to $400 million through the end of 2023, with slightly more than half of that expected to be incurred in 2020. Further, we expect interest expense, net, will continue to decline in 2020 due to lower average outstanding debt balances.

Our 2020 outlook does not consider any impacts from the recent outbreak of the coronavirus. While there could be a near-term effect on our operating results, it is difficult to assess or predict how material the impact will be and what long-term effects the outbreak may have.

RESULTS OF OPERATIONS

We analyze sales by three geographies, the Americas, EMEA and Asia Pacific, and by the following product categories: Knees, Hips, S.E.T., Dental, Spine & CMF and Other. This sales analysis differs from our reportable operating segments, which are based upon our senior management organizational structure and how we allocate resources towards achieving operating profit goals. We analyze sales by geography because the underlying market trends in any particular geography tend to be similar across product categories and because we primarily sell the same products in all geographies.

Net Sales by Geography

The following tables present net sales by geography and the components of the percentage changes (dollars in millions):

	Year Ended December 31,			Volume/		Foreign
	2019	2018	% Inc/(Dec)	Mix	Price	Exchange
Americas	$4,875.8	$4,837.2	0.8%	4.0%	(3.0)%	(0.2)%
EMEA	1,746.9	1,801.9	(3.1)	4.3	(2.1)	(5.3)
Asia Pacific	1,359.5	1,293.8	5.1	9.1	(2.2)	(1.8)
Total	$7,982.2	$7,932.9	0.6	4.9	(2.7)	(1.6)

	Year Ended December 31,			Volume/		Foreign
	2018	2017	% Inc/(Dec)	Mix	Price	Exchange
Americas	$4,837.2	$4,844.8	(0.2)%	2.3%	(2.4)%	(0.1)%
EMEA	1,801.9	1,745.2	3.2	1.7	(1.6)	3.1
Asia Pacific	1,293.8	1,213.3	6.6	9.2	(3.5)	0.9
Total	$7,932.9	$7,803.3	1.7	3.2	(2.4)	0.9

"Foreign Exchange" used in the tables in this report represents the effect of changes in foreign currency exchange rates on sales.

Net Sales by Product Category

The following tables present net sales by product category and the components of the percentage changes (dollars in millions):

	Year Ended December 31,			Volume/		Foreign
	2019	2018	% Inc/(Dec)	Mix	Price	Exchange
Knees	$2,810.1	$2,773.7	1.3%	6.2%	(3.0)%	(1.9)%
Hips	1,935.1	1,921.4	0.7	5.5	(3.0)	(1.8)
S.E.T.	1,795.7	1,751.8	2.5	5.4	(1.6)	(1.3)
Spine & CMF	747.3	763.9	(2.2)	1.4	(2.6)	(1.0)
Dental	414.0	411.2	0.7	3.2	(0.9)	(1.6)
Other	280.0	310.9	(9.9)	(2.1)	(6.5)	(1.3)
Total	$7,982.2	$7,932.9	0.6	4.9	(2.7)	(1.6)

	Year Ended December 31,			Volume/		Foreign
	2018	2017	% Inc/(Dec)	Mix	Price	Exchange
Knees	$2,773.7	$2,734.0	1.5%	3.6%	(2.9)%	0.8%
Hips	1,921.4	1,871.8	2.6	4.3	(2.8)	1.1
S.E.T.	1,751.8	1,701.8	2.9	3.9	(1.8)	0.8
Spine & CMF	763.9	757.9	0.8	2.1	(1.7)	0.4
Dental	411.2	418.6	(1.8)	(1.7)	(1.5)	1.4
Other	310.9	319.2	(2.6)	(1.7)	(1.5)	0.6
Total	$7,932.9	$7,803.3	1.7	3.2	(2.4)	0.9

The following table presents net sales by product category by geography for our Knees and Hips product categories, which represent our most significant product categories (dollars in millions):

	Year Ended December 31,				
	2019	2018	2017	2019 vs. 2018 % Inc/(Dec)	2018 vs. 2017 % Inc/(Dec)
Knees					
Americas	$1,676.6	$1,642.7	$1,656.5	2.1%	(0.8)%
EMEA	654.1	672.3	644.4	(2.7)	4.4
Asia Pacific	479.4	458.7	433.1	4.5	5.9
Total	$2,810.1	$2,773.7	$2,734.0	1.3	1.5
Hips					
Americas	$1,016.3	$ 996.3	$ 968.9	2.0%	2.8%
EMEA	499.8	519.9	518.4	(3.9)	0.3
Asia Pacific	419.0	405.2	384.5	3.4	5.4
Total	$1,935.1	$1,921.4	$1,871.8	0.7	2.6

Demand (Volume/Mix) Trends

Increased volume and changes in the mix of product sales had a positive effect of 4.9 percent on year-over-year sales during 2019. Volume/mix growth was driven by recent product introductions, particularly in our Knees product category, sales in key emerging markets and market growth. Market growth has generally been influenced by an aging global population, obesity, new technologies, advances in surgical techniques and more active lifestyles, among other factors.

Pricing Trends

Global selling prices had a negative effect of 2.7 percent on year-over-year sales during 2019. In the majority of countries in which we operate, we continue to experience pricing pressure from governmental healthcare cost containment efforts and from local hospitals and health systems.

Foreign Currency Exchange Rates

In 2019, changes in foreign currency exchange rates had a negative effect of 1.6 percent on year-over-year sales. If foreign currency exchange rates remain at levels consistent with recent rates, we estimate they will have a minimal effect on sales in 2020 for the full year. However, we estimate sales will be negatively affected by foreign currency exchange rates in the first half of the year, but that impact will be offset by positive effects in the second half of the year.

Sales by Product Category

Knees

Knee sales increased by 1.3 percent in 2019 compared to 2018. Various product launches resulted in improved volume/mix growth in the knee product category, which was partially offset by price declines and changes in foreign currency exchange rates. Knee sales growth was principally driven by increased demand for Persona® The Personalized Knee System, the Oxford® Partial Knee and the ROSA® Knee System.

Hips

Hip sales increased by 0.7 percent in 2019 compared to 2018. Volume/mix growth in this product category was partially offset by price declines and changes in foreign currency exchange rates. Hip sales growth was primarily attributable to increased utilization of our Taperloc® Complete Hip System and G7® Acetabular System.

S.E.T.

S.E.T. sales increased by 2.5 percent in 2019 compared to 2018 primarily due to supply stability, salesforce specialization and new product launches, partially offset by price declines and changes in foreign currency exchange rates.

Spine & CMF

Spine and CMF sales decreased by 2.2 percent in 2019 compared to 2018 primarily due to ongoing sales channel consolidation in our Spine division, price declines and changes in foreign currency exchange rates. Demand for our thoracic products continued to positively contribute to sales.

Dental

Dental sales increased by 0.7 percent in 2019 compared to 2018. Volume/mix growth in our Dental product category improved primarily due to investment of resources in priority areas, as well as other operational improvements.

The following table presents estimated* 2019 global market information (dollars in billions):

	Global Market Size	Global Market % Growth**	Zimmer Biomet Market Position
Knees	$ 8	Low-Single Digit	1
Hips	7	Low-Single Digit	1
S.E.T.	22	Mid-Single Digit	5
Spine & CMF	11	Low-Single Digit	5
Dental	5	Mid-Single Digit	4

* Estimates are not precise and are based on competitor annual filings, Wall Street equity research and Company estimates

** Excludes the effect of changes in foreign currency exchange rates on sales growth

Expenses as a Percent of Net Sales

	Year Ended December 31,				
	2019	2018	2017	2019 vs. 2018 Inc/(Dec)	2018 vs. 2017 Inc/(Dec)
Cost of products sold, excluding intangible asset amortization	28.2%	28.6%	27.3%	(0.4)%	1.3%
Intangible asset amortization	7.3	7.5	7.7	(0.2)	(0.2)
Research and development	5.6	4.9	4.7	0.7	0.2
Selling, general and administrative	41.9	42.6	39.8	(0.7)	2.8
Goodwill and intangible asset impairment	0.9	12.3	4.2	(11.4)	8.1
Quality remediation	1.0	1.9	2.3	(0.9)	(0.4)
Restructuring and other cost reduction initiatives	0.6	0.4	0.2	0.2	0.2
Acquisition, integration and related	0.2	1.3	3.4	(1.1)	(2.1)
Operating Profit	14.2	0.4	10.2	13.8	(9.8)

Cost of Products Sold and Intangible Asset Amortization

We calculate gross profit as net sales minus cost of products sold and intangible asset amortization. Our gross margin percentage is gross profit divided by net sales. The following table sets forth the factors that contributed to the gross margin changes in each of 2019 and 2018 compared to the prior year:

	Year Ended December 31,	
	2019	2018
Prior year gross margin	63.9%	64.9%
Lower average selling prices	(0.7)	(0.6)
Average cost per unit	(0.4)	0.8
Excess and obsolete inventory	0.1	(1.0)
Discontinued products inventory charges	–	(0.1)
Royalties	0.4	–
Impact of foreign currency hedges	0.8	(0.4)
Inventory step-up	–	0.4
U.S. medical device excise tax	0.2	(0.3)
Intangible asset amortization	0.2	0.2
Current year gross margin	64.5%	63.9%

The increase in gross margin percentage in 2019 compared to 2018 was primarily due to the effect of our hedging program, lower royalty expense, a refund related to U.S. medical device excise taxes and lower intangible asset amortization. We incurred hedge gains of $38.4 million in 2019 compared to hedge losses of $26.2 million in 2018. For derivatives which qualify as hedges of future cash flows, the effective portion of changes in fair value is temporarily recorded in other comprehensive income and then recognized in cost of products sold when the hedged items affect earnings. The refund of a portion of the U.S. medical device excise tax was the result of a change in the methodology we used to calculate the constructive sales price upon which the taxes were paid. On July 1, 2019 the IRS approved and agreed to our change in methodology. The reduction in royalty expense was partially the result of an agreement we entered into on April 1, 2019. Under the agreement, we paid $192.5 million to buy out certain licensing arrangements from an unrelated third party. This new agreement and the related payment replace the variable royalty payments that otherwise would have been due under the terms of previous licensing arrangements through 2029. The payment was recorded as an intangible asset and will be amortized through 2029. Intangible asset amortization expense declined in 2019 due to certain intangible assets from past acquisitions being fully amortized, partially offset by additional amortization from the agreement to buy out certain licensing arrangements we entered into on April 1, 2019. These favorable items were partially offset by lower average selling prices and higher manufacturing costs.

Operating Expenses

R&D expenses as a percentage of net sales increased in 2019 compared to 2018 primarily due to increased investment in our Knee product pipeline, costs associated with the EU MDR and patent licenses acquired for use in R&D activities that were expensed immediately.

Selling, general and administrative ("SG&A") expenses and SG&A expenses as a percentage of sales decreased in 2019 compared to 2018 primarily due to lower litigation-related charges. In 2018, we recognized a $168 million litigation charge for a patent infringement lawsuit. The lower litigation-related charges were partially offset by higher selling costs due to higher sales, investments in preparation for new product launches, and higher expenses from legal entity, distribution and manufacturing optimization, including distributor contract terminations.

In 2019, we recognized a $70.1 million in-process research and development ("IPR&D") intangible asset impairment on certain IPR&D projects that we terminated. In 2018, we recognized goodwill impairment charges of $975.9 million primarily related to our EMEA and Spine reporting units.

Our quality remediation expenses continued to decline in 2019 due to the natural regression of completing our remediation milestones. Similarly, acquisition, integration and related expenses declined mainly due to the completion of certain integration efforts.

In December 2019, our Board of Directors approved, and we initiated, a new global restructuring program with an overall objective of reducing costs to allow us to invest in higher priority growth opportunities. We recognized expenses of $50.0 million in 2019 primarily related to severance associated with this program as well as expenses incurred related to a supply chain optimization initiative. The 2018 cost reduction expenses only included expenses related to the supply chain optimization initiative.

Other Expense, net, Interest Expense, net, and Income Taxes

Our other expense, net, primarily relates to certain components of pension expense, investment gains and losses and remeasurement gains and losses related to monetary assets and liabilities denominated in a foreign currency other than an entity's functional currency, partially offset by the impact of foreign currency forward exchange contracts we entered into to mitigate any gain or loss. The decline in other expense, net in 2019 was driven by higher pension-related gains.

Interest expense, net, declined in 2019 compared to 2018 primarily due to continued debt repayments and gains related to our cross-currency interest rate swaps.

Our effective tax rate ("ETR") on earnings (loss) before income taxes was negative 24.9 percent (a tax benefit was recognized on earnings before income taxes) and negative 39.9 percent (a tax provision was recognized on a loss before income taxes) for the years ended December 31, 2019 and 2018, respectively. In 2019, we recognized an overall tax benefit in the year due to a $315.0 million benefit from Switzerland's Federal Act on Tax Reform and AHV Financing ("TRAF") in addition to the tax impact of certain restructuring transactions in Switzerland. The TRAF is effective January 1, 2020 and includes the abolishment of various favorable federal

and cantonal tax regimes. The TRAF provides transitional relief measures for companies that are losing the tax benefit of a ruling, including a "step-up" for amortizable goodwill, equal to the amount of future tax benefit they would have received under their existing ruling, subject to certain limitations.

In 2018, our negative ETR was primarily due to goodwill impairment that resulted in us having a net loss before income taxes with no associated tax benefit recognized for this charge. In 2018, we also recognized an additional $8.3 million of income tax provision as we completed our estimate of the effects of the Tax Cuts and Jobs Act of 2017 ("2017 Tax Act").

Absent discrete tax events, we expect our future ETR will be lower than the U.S. corporate income tax rate of 21.0 percent due to our mix of earnings between U.S. and foreign locations, which have lower corporate income tax rates. Our ETR in future periods could also potentially be impacted by: changes in our mix of pre-tax earnings; changes in tax rates, tax laws or their interpretation, including the European Union rules on state aid; the outcome of various federal, state and foreign audits; and the expiration of certain statutes of limitations. Currently, we cannot reasonably estimate the impact of these items on our financial results.

Segment Operating Profit

	Net Sales			Operating Profit			Operating Profit as a Percentage of Net Sales		
	Year Ended December 31,			Year Ended December 31,			Year Ended December 31,		
(dollars in millions)	2019	2018	2017	2019	2018	2017	2019	2018	2017
Americas	$3,978.1	$3,932.6	$3,928.9	$2,163.2	$2,084.4	$2,126.8	54.4%	53.0%	54.1%
EMEA	1,538.6	1,576.1	1,523.4	477.1	479.3	478.1	31.0	30.4	31.4
Asia Pacific	1,297.0	1,236.9	1,158.3	458.9	435.3	417.6	35.4	35.2	36.1

In the Americas, operating profit as a percentage of net sales increased in 2019 compared to 2018. The increase was primarily due to improved sales volume/mix and controlled spending. In EMEA, operating profit as a percentage of net sales increased in 2019 compared to 2018. The increase was primarily due to higher sales volume/mix and gains recognized related to our hedging program. In Asia Pacific, operating profit as a percentage of net sales increased in 2019 compared to 2018 primarily due to volume/mix net sales growth and gains recognized related to our hedging program.

Non-GAAP Operating Performance Measures

We use financial measures that differ from financial measures determined in accordance with U.S. Generally Accepted Accounting Principles ("GAAP") to evaluate our operating performance. These non-GAAP financial measures exclude, as applicable, the impact of inventory step-up; certain inventory and manufacturing-related charges including charges to discontinue certain product lines; intangible asset amortization; goodwill and intangible asset impairment; quality remediation expenses; restructuring and other cost reduction initiatives; acquisition, integration and related expenses; certain litigation gains and charges; expenses to comply with the EU MDR; other charges; any related effects on our income tax provision associated with these items; the effect of Switzerland tax reform; the effect of the 2017 Tax Act; other certain tax adjustments; and, with respect to earnings per share information, provide for the effect of dilutive shares assuming net earnings in a period of a reported net loss. We use these non-GAAP financial measures internally to evaluate the performance of the business. Additionally, we believe these non-GAAP measures provide meaningful incremental information to investors to consider when evaluating our performance. We believe these measures offer the ability to make period-to-period comparisons that are not impacted by certain items that can cause dramatic changes in reported income but that do not impact the fundamentals of our operations. The non-GAAP measures enable the evaluation of operating results and trend analysis by allowing a reader to better identify operating trends that may otherwise be masked or distorted by these types of items that are excluded from the non-GAAP measures. In addition, adjusted diluted earnings per share is used as a performance metric in our incentive compensation programs.

Our non-GAAP adjusted net earnings used for internal management purposes for the years ended December 31, 2019, 2018 and 2017 were $1,626.4 million, $1,565.4 million and $1,636.4 million, respectively, and our non-GAAP adjusted diluted earnings per share were $7.87, $7.64 and $8.03, respectively.

The following are reconciliations from our GAAP net earnings and diluted earnings per share to our non-GAAP adjusted net earnings and non-GAAP adjusted diluted

earnings per share used for internal management purposes (in millions, except per share amounts):

	Year ended December 31,		
	2019	2018	2017
Net Earnings (Loss) of Zimmer Biomet Holdings, Inc.	$1,131.6	$ (379.2)	$ 1,813.8
Inventory step-up and other inventory and manufacturing related charges[1]	53.9	32.5	70.8
Intangible asset amortization[2]	584.3	595.9	603.9
Goodwill and intangible asset impairment[3]	70.1	979.7	331.5
Quality remediation[4]	87.6	165.4	195.1
Restructuring and other cost reduction initiatives[5]	50.0	34.2	17.6
Acquisition, integration and related[6]	12.2	99.5	262.2
Litigation[7]	65.0	186.0	104.0
Litigation settlement gain[8]	(23.5)	–	–
European Union Medical Device Regulation[9]	30.9	3.7	–
Other charges[10]	119.2	82.8	43.8
Taxes on above items[11]	(226.2)	(239.6)	(421.5)
U.S. tax reform[12]	–	8.3	(1,272.4)
Switzerland tax reform[13]	(315.0)	–	–
Other certain tax adjustments[14]	(13.7)	(3.8)	(112.4)
Adjusted Net Earnings	$1,626.4	$1,565.4	$ 1,636.4
Diluted Earnings (Loss) per share	$ 5.47	$ (1.86)	$ 8.90
Inventory step-up and other inventory and manufacturing related charges[1]	0.26	0.16	0.35
Intangible asset amortization[2]	2.83	2.93	2.96
Goodwill and intangible asset impairment[3]	0.34	4.81	1.63
Quality remediation[4]	0.42	0.81	0.96
Restructuring and other cost reduction initiatives[5]	0.24	0.17	0.09
Acquisition, integration and related[6]	0.06	0.49	1.28
Litigation[7]	0.31	0.91	0.51
Litigation settlement gain[8]	(0.11)	–	–
European Union Medical Device Regulation[9]	0.15	0.02	–
Other charges[10]	0.58	0.41	0.22
Taxes on above items[11]	(1.09)	(1.18)	(2.07)
U.S. tax reform[12]	–	0.04	(6.25)
Switzerland tax reform[13]	(1.52)	–	–
Other certain tax adjustments[14]	(0.07)	(0.02)	(0.55)
Effect of dilutive shares assuming net earnings[15]	–	(0.05)	–
Adjusted Diluted EPS	$ 7.87	$ 7.64	$ 8.03

[1] Inventory step-up and other inventory and manufacturing-related charges relate to inventory step-up expense, excess and obsolete inventory charges on certain product lines we intend to discontinue and other inventory and manufacturing-related charges. The year ended December 31, 2019 included a $20.8 million charge incurred to terminate a raw material supply agreement. Inventory step-up expense represents the incremental expense of inventory sold recognized at its fair value after business combination accounting is applied versus the expense that would have been recognized if sold at its cost to manufacture. Since only the inventory that existed at the business combination date was stepped-up to fair value, we believe excluding the incremental expense provides investors useful information as to what our costs may have been if we had not been required to increase the inventory's book value to fair value. The excess and obsolete inventory charges on certain product lines are driven by acquisitions where there are competing product lines and we have plans to discontinue one of the competing product lines.

[2] We exclude intangible asset amortization from our non-GAAP financial measures because we internally assess our performance against our peers without this amortization. Due to various levels of acquisitions among our peers, intangible asset amortization can vary significantly from company to company.

[3] In 2019 and 2018, we recognized $70.1 and $3.8 million, respectively, of intangible asset impairments from merger-related IPR&D intangible assets. Also in 2018, we recognized a goodwill impairment charge of $975.9 million. The impairment was comprised of $401.2 million in our Spine reporting unit, $567.0 million in our EMEA reporting unit and $7.7 million in an insignificant reporting unit. In 2017, we recognized $18.8 million and $8.0 million of intangible asset impairment from merger-related IPR&D and trademark intangible assets, respectively. Also in 2017, we recognized goodwill impairment charges of $32.7 million and $272.0 million on our Office Based Technologies and Spine reporting units, respectively.

[4] We are addressing inspectional observations on Form 483 and a Warning Letter issued by the U.S. Food and Drug Administration ("FDA") following its previous inspections of our Warsaw North Campus facility, among other matters. This quality remediation has required us to devote significant financial resources and is for a discrete period of time. The majority of the expenses are related to consultants who are helping us to update previous documents and redesign certain processes.

[5] In December 2019, our Board of Directors approved, and we initiated, a new global restructuring program with an overall objective of reducing costs to allow us to invest in higher priority growth opportunities. In 2019, the expenses were primarily related to severance and our supply chain optimization initiative. The 2018 and 2017 expenses were related to our supply chain optimization initiative.

[6] The acquisition, integration and related gains and expenses we have excluded from our non-GAAP financial measures resulted from various acquisitions. The acquisition, integration and related gains and expenses include the following types of gains and expenses:

- Consulting and professional fees related to third-party integration consulting performed in a variety of areas, such as tax, compliance, logistics and human resources, and legal fees related to the consummation of mergers and acquisitions.
- Employee termination benefits related to terminating employees with overlapping responsibilities in various areas of our business.
- Dedicated project personnel expenses which include the salary, benefits, travel expenses and other costs directly associated with employees who are 100 percent dedicated to our integration of acquired businesses and employees who have been notified of termination, but are continuing to work on transferring their responsibilities.
- Contract termination expenses related to terminated contracts, primarily with sales agents and distribution agreements.
- Other various expenses to relocate facilities, integrate information technology, losses incurred on assets resulting from the applicable acquisition, and other various expenses.

[7] We are involved in routine patent litigation, product liability litigation, commercial litigation and other various litigation matters. We review litigation matters from both a qualitative and quantitative perspective to determine if excluding the losses or gains will provide our investors with useful incremental information. Litigation matters can vary in their characteristics, frequency and significance to our operating results. The litigation charges and gains excluded from our non-GAAP financial measures in the periods presented relate to product liability matters where we have received numerous claims on specific products, patent litigation and commercial litigation related to a common matter in multiple jurisdictions. In regards to the product liability matters, due to the complexities involved and claims filed in multiple districts, the expenses associated with these matters are significant to our operating results. Once the litigation matter has been excluded from our non-GAAP financial measures in a particular period, any additional expenses or gains from changes in estimates are also excluded, even if they are not significant, to ensure consistency in our non-GAAP financial measures from period-to-period.

[8] In the first quarter of 2019, we settled a patent infringement lawsuit out of court, and the other party agreed to pay us an upfront, lump-sum amount for a non-exclusive license to the patent.

[9] The EU MDR imposes significant additional premarket and postmarket requirements. The new regulations provide a transition period until May 2020 for currently-approved medical devices to meet the additional requirements. For certain devices, this transition period can be extended until May 2024. We are excluding from our non-GAAP financial measures the incremental costs incurred to establish initial compliance with the

regulations related to our currently-approved medical devices. The incremental costs primarily include third-party consulting necessary to supplement our internal resources.

(10) We have incurred other various expenses from specific events or projects that we consider highly variable or that have a significant impact to our operating results that we have excluded from our non-GAAP measures. These include costs related to legal entity, distribution and manufacturing optimization, including contract terminations, as well as our costs of complying with our Deferred Prosecution Agreement ("DPA") with the U.S. government related to certain Foreign Corrupt Practices Act matters involving Biomet and certain of its subsidiaries. Under the DPA, which has a three-year term, we are subject to oversight by an independent compliance monitor, which monitorship commenced in August 2017. The excluded costs include the fees paid to the independent compliance monitor and to external legal counsel assisting in the matter.

(11) Represents the tax effects on the previously specified items. The tax effect for the U.S. jurisdiction is calculated based on an effective rate considering federal and state taxes, as well as permanent items. For jurisdictions outside the U.S., the tax effect is calculated based upon the statutory rates where the items were incurred.

(12) The 2017 Tax Act resulted in a net favorable provisional adjustment due to the reduction of deferred tax liabilities for unremitted earnings and revaluation of deferred tax liabilities to a 21 percent rate, which was partially offset by provisional tax charges related to the toll charge provision of the 2017 Tax Act. In 2018, we finalized our estimates of the effects of the 2017 Tax Act based upon final guidance issued by U.S. tax authorities.

(13) We recognized a tax benefit related to TRAF in addition to an impact from certain restructuring transactions in Switzerland.

(14) Other certain tax adjustments relate to various discrete tax period adjustments, including changes in statutory tax rates, adjustments from internal restructuring transactions that provide us access to offshore funds in a tax efficient manner and resolutions of various tax matters.

(15) Diluted share count used in Adjusted Diluted EPS (in millions):

	Year ended December 31, 2018
Diluted shares	203.5
Dilutive shares assuming net earnings	1.5
Adjusted diluted shares	205.0

LIQUIDITY AND CAPITAL RESOURCES

Cash flows provided by operating activities were $1,585.8 million in 2019 compared to $1,747.4 million and $1,582.3 million in 2018 and 2017, respectively. The decrease in operating cash flows in 2019 compared to 2018 was primarily due to a payment of approximately $168 million on a patent infringement lawsuit. Additionally, in 2018 we expanded our sale of accounts receivable in certain countries which provided additional cash inflows, compared to 2019 when we sold fewer receivables at the end of the year which had a negative effect on operating cash flows.

Cash flows used in investing activities were $729.3 million in 2019 compared to $416.6 million and $510.8 million in 2018 and 2017, respectively. In 2019, we paid $197.6 million to buy out certain licensing arrangements from unrelated third parties. Instrument and property, plant and equipment additions reflected ongoing investments in our product portfolio and optimization of our manufacturing and logistics network, including investments in instruments in 2019 to support new product launches.

Cash flows used in financing activities were $779.9 million in 2019. Our primary use of available cash in 2019 was for debt repayment. We received net proceeds of $549.2 million from the issuance of additional Euro-denominated senior notes which we used to repay $500.0 million of senior notes that became due on November 30, 2019. In January 2019, we borrowed an additional $200.0 million under a U.S. term loan ("U.S. Term Loan C") and used those proceeds, along with cash on hand, to repay the remaining $225.0 million outstanding under the U.S. term loan ("U.S. Term Loan B") provided for under our 2016 credit agreement. During 2019 we also repaid the $735.0 million outstanding balance under U.S. Term Loan C, with the remainder of the proceeds from the Euro-denominated senior notes issuance and cash from operations. Overall, we had approximately $710 million of net principal repayments on our senior notes and term loans in 2019. In 2018, we received net proceeds of $749.5 million from the issuance of additional senior notes and borrowed $400.0 million from our $1.5 billion multicurrency revolving facility provided for under our 2016 credit agreement (the "2016 Multicurrency Revolving Facility") to repay $1,150.0 million of senior notes that became due on April 2, 2018. We subsequently repaid the $400.0 million of 2016 Multicurrency Revolving Facility borrowings in 2018. Also in 2018, we borrowed $675.0 million under U.S. Term Loan C and used the cash proceeds along with cash generated from operations throughout the year to repay an aggregate of $835.0 million on U.S. Term Loan A, $450.0 million on U.S. Term Loan B, and we subsequently repaid $140.0 million on U.S. Term Loan C. Overall, we had approximately $1,150 million of net principal repayments on our senior notes and term loans in 2018.

In February, May, August and December 2019, our Board of Directors declared cash dividends of $0.24 per share. We expect to continue paying cash dividends on a quarterly basis; however, future dividends are subject to approval of the Board of Directors and may be adjusted as business needs or market conditions change.

In February 2016, our Board of Directors authorized a $1.0 billion share repurchase program effective March 1, 2016, with no expiration date. As of December 31, 2019, all $1.0 billion remained authorized for repurchase under the program.

We will continue to exercise disciplined capital allocation designed to drive stockholder value creation. We intend to use available cash for debt repayment, reinvestment in the business and payment of dividends. If the right opportunities arise, we may also use available cash to pursue business development opportunities.

As discussed in Note 4 to our consolidated financial statements, in December 2019, our Board of Directors approved, and we initiated, a new global restructuring program with an objective of reducing costs to allow us to further invest in higher priority growth opportunities. The restructuring program is expected to result in total pre-tax restructuring charges of approximately $350 million to $400 million, with slightly more than half of that expected to be incurred in 2020. We expect to reduce gross annual pre-tax operating expenses by approximately $200 million to $300 million by the end of 2023 as program benefits are realized.

As discussed in Note 16 to our consolidated financial statements, the Internal Revenue Service ("IRS") has issued proposed adjustments for years 2005 through 2012 reallocating profits between certain of our U.S. and foreign subsidiaries. We have disputed these proposed adjustments and continue to pursue resolution with the IRS. Although the ultimate timing for resolution of the disputed tax issues is uncertain, future payments may be significant to our operating cash flows.

As discussed in Note 20 to our consolidated financial statements, as of December 31, 2019, we have an estimated liability of $59.9 million related to Durom Cup product liability claims and a liability of $50.1 million related to Biomet metal-on-metal hip implant claims on our consolidated balance sheet. We expect to continue paying these claims over the next few years.

At December 31, 2019, our outstanding debt consisted of senior notes and term loans as follows (dollars in millions):

Type	Principal	Currency	Interest Rate	Maturity Date
Notes	$1,500.0	U.S. Dollar	2.700%	April 1, 2020
Notes	450.0	U.S. Dollar	Floating	March 19, 2021
Notes	300.0	U.S. Dollar	3.375	November 30, 2021
Notes	750.0	U.S. Dollar	3.150	April 1, 2022
Term	106.9	Japanese Yen	0.635	September 27, 2022
Term	194.7	Japanese Yen	0.635	September 27, 2022
Notes	561.3	Euro	1.414	December 13, 2022
Notes	300.0	U.S. Dollar	3.700	March 19, 2023
Notes	2,000.0	U.S. Dollar	3.550	April 1, 2025
Notes	561.3	Euro	2.425	December 13, 2026
Notes	561.3	Euro	1.164	November 15, 2027
Notes	253.4	U.S. Dollar	4.250	August 15, 2035
Notes	317.8	U.S. Dollar	5.750	November 30, 2039
Notes	395.4	U.S. Dollar	4.450	August 15, 2045

We have a five-year unsecured multicurrency revolving facility of $1.5 billion (the "2019 Multicurrency Revolving Facility") that will mature on November 1, 2024. There were no outstanding borrowings under this facility as of December 31, 2019. The 2019 Multicurrency Revolving Facility replaced the 2016 Multicurrency Revolving Facility, effective November 1, 2019. We also had other available uncommitted credit facilities totaling $45.3 million as of December 31, 2019.

We have $1.5 billion principal amount of notes due April 1, 2020. We believe we can satisfy this debt obligation with cash generated from our operations, by issuing new debt, and/or by borrowing on our 2019 Multicurrency Revolving Facility. We believe that our earnings, balance sheet and cash flows will allow us to obtain additional capital, if necessary, to satisfy this debt obligation.

For additional information on our debt, see Note 12 to our consolidated financial statements.

We place our cash and cash equivalents in highly-rated financial institutions and limit the amount of credit exposure to any one entity. We invest only in high-quality financial instruments in accordance with our internal investment policy.

As of December 31, 2019, $373.4 million of our cash and cash equivalents were held in jurisdictions outside of the U.S. Of this amount, $102.1 million is denominated in U.S. Dollars and, therefore, bears no foreign currency translation risk. The balance of these assets is denominated in currencies of the various countries where we operate. In the future, we intend to repatriate at least $5.0 billion of unremitted earnings, of which the additional tax related to remitting earnings is deemed immaterial.

Management believes that cash flows from operations and available borrowings under the 2019 Multicurrency Revolving Facility are sufficient to meet our working capital, capital expenditure and debt service needs, as well as return cash to stockholders in the form of dividends and share repurchases. Should additional investment opportunities arise, we believe that our earnings, balance sheet and cash flows will allow us to obtain additional capital, if necessary.

CONTRACTUAL OBLIGATIONS

We have entered into contracts with various third parties in the normal course of business that will require future payments. The following table illustrates our contractual obligations and certain other commitments (in millions):

Contractual Obligations	Total	2020	2021 and 2022	2023 and 2024	2025 and Thereafter
Long-term debt	$ 8,252.1	$1,500.0	$2,362.9	$300.0	$4,089.2
Interest payments	1,602.8	173.0	306.0	279.4	844.4
Operating leases	307.3	70.5	99.4	63.3	74.1
Purchase obligations	599.6	319.8	203.3	76.1	0.4
Toll charge tax liability	234.9	–	12.4	136.6	85.9
Other long-term liabilities	227.2	–	146.6	19.3	61.3
Total contractual obligations	$11,223.9	$2,063.3	$3,130.6	$874.7	$5,155.3

$118.6 million of the other long-term liabilities on our balance sheet as of December 31, 2019 are liabilities related to defined benefit pension plans. Defined benefit plan liabilities are based upon the underfunded status of the respective plans; they are not based upon future contributions. Due to uncertainties regarding future plan asset performance, changes in interest rates and our intentions with respect to voluntary contributions, we are unable to reasonably estimate future contributions beyond 2020. Therefore, this table does not include any amounts related to future contributions to our plans. See Note 15 to our consolidated financial statements for further information on our defined benefit plans.

Under the 2017 Tax Act, we have a $234.9 million toll charge liability for the one-time deemed repatriation of unremitted foreign earnings. This amount was recorded in

non-current income tax liabilities on our consolidated balance sheet as of December 31, 2019. We have elected to pay the toll charge in installments over eight years.

Also included in long-term liabilities on our consolidated balance sheets are liabilities related to unrecognized tax benefits and corresponding interest and penalties thereon. Due to the uncertainties inherent in these liabilities, such as the ultimate timing and resolution of tax audits, we are unable to reasonably estimate the amount or period in which potential tax payments related to these positions will be made. Therefore, this table does not include any obligations related to unrecognized tax benefits. See Note 16 to our consolidated financial statements for further information on these tax-related accounts.

We have entered into various agreements that may result in future payments dependent upon various events such as the achievement of certain product R&D milestones, sales milestones, or, at our discretion, maintenance of exclusive rights to distribute a product. Since there is uncertainty on the timing or whether such payments will have to be made, we have not included them in this table. These payments could range from $0 to $60 million.

CRITICAL ACCOUNTING ESTIMATES

Our financial results are affected by the selection and application of accounting policies and methods. Significant accounting policies which require management's judgment are discussed below.

Excess Inventory and Instruments – We must determine as of each balance sheet date how much, if any, of our inventory may ultimately prove to be unsaleable or unsaleable at our carrying cost. Similarly, we must also determine if instruments on hand will be put to productive use or remain undeployed as a result of excess supply. Accordingly, inventory and instruments are written down to their net realizable value. To determine the appropriate net realizable value, we evaluate current stock levels in relation to historical and expected patterns of demand for all of our products and instrument systems and components. The basis for the determination is generally the same for all inventory and instrument items and categories except for work-in-process inventory, which is recorded at cost. Obsolete or discontinued items are generally destroyed and completely written off. Management evaluates the need for changes to the net realizable values of inventory and instruments based on market conditions, competitive offerings and other factors on a regular basis.

Income Taxes – Our income tax expense, deferred tax assets and liabilities and reserves for unrecognized tax benefits reflect management's best assessment of estimated future taxes to be paid. We are subject to income taxes in the U.S. and numerous foreign jurisdictions. Significant judgments and estimates are required in determining the consolidated income tax expense.

We estimate income tax expense and income tax liabilities and assets by taxable jurisdiction. Realization of deferred tax assets in each taxable jurisdiction is dependent on our ability to generate future taxable income sufficient to realize the benefits. We evaluate deferred tax assets on an ongoing basis and provide valuation allowances unless we determine it is "more likely than not" that the deferred tax benefit will be realized.

The calculation of our tax liabilities involves dealing with uncertainties in the application of complex tax laws and regulations in a multitude of jurisdictions across our global operations. We are subject to regulatory review or audit in virtually all of those jurisdictions and those reviews and audits may require extended periods of time to resolve. We record our income tax provisions based on our knowledge of all relevant facts and circumstances, including existing tax laws, our experience with previous settlement agreements, the status of current examinations and our understanding of how the tax authorities view certain relevant industry and commercial matters.

We recognize tax liabilities in accordance with the Financial Accounting Standards Board ("FASB") guidance on income taxes and we adjust these liabilities when our judgment changes as a result of the evaluation of new information not previously available. Due to the complexity of some of these uncertainties, the ultimate resolution may result in a payment that is materially different from our current estimate of the tax liabilities. These differences will be reflected as increases or decreases to income tax expense in the period in which they are determined.

Commitments and Contingencies – Accruals for product liability and other claims are established with the assistance of internal and external legal counsel based on current information and historical settlement information for claims, related legal fees and for claims incurred but not reported. We use an actuarial model to assist management in determining an appropriate level of accruals for product liability claims. Historical patterns of claim loss development over time are statistically analyzed to arrive at factors which are then applied to loss estimates in the actuarial model.

Goodwill and Intangible Assets – We evaluate the carrying value of goodwill and indefinite life intangible assets annually, or whenever events or circumstances indicate the carrying value may not be recoverable. We evaluate the carrying value of finite life intangible assets whenever events or circumstances indicate the carrying value may not be recoverable. Significant assumptions are required to estimate the fair value of goodwill and intangible assets, most notably estimated future cash flows generated by these assets and risk-adjusted discount rates. As such, these fair value measurements use significant unobservable inputs. Changes to these assumptions could require us to record impairment charges on these assets.

In our annual impairment test in the fourth quarter of 2019, we estimated the fair value of our EMEA and Dental reporting units only exceeded their carrying values by less than 5 percent. Fair value was determined using income and market approaches. Fair value under the income approach was determined by discounting to present value the estimated future cash flows of the reporting units. Significant assumptions are incorporated into the income approach, such

as estimated growth rates and risk-adjusted discount rates. Fair value under the market approach utilized the guideline public company methodology, which uses valuation indicators determined from other businesses that are similar to our EMEA and Dental reporting units. As of December 31, 2019, the remaining goodwill on the EMEA and Dental reporting units were $749.8 million and $397.7 million, respectively.

Future impairment in the EMEA and Dental reporting units could occur if the estimates used in the income and market approaches change. If our estimates of profitability in the reporting unit decline, the fair value estimate under the income approach will decline. Additionally, changes in the broader economic environment could cause changes to our estimated discount rates, foreign currency exchange rates used to translate cash flows and comparable company valuation indicators, which may impact our estimated fair values.

We have three other reporting units that have goodwill assigned to them. The fair value of each of these three reporting units is sufficiently in excess of its carrying value which leads us to believe only a significant, unforeseen event could cause impairment to any of these reporting units.

RECENT ACCOUNTING PRONOUNCEMENTS

See Note 2 to our consolidated financial statements for information on how recent accounting pronouncements have affected or may affect our financial position, results of operations or cash flows.

Item 7A. Quantitative and Qualitative Disclosures About Market Risk

MARKET RISK

We are exposed to certain market risks as part of our ongoing business operations, including risks from changes in foreign currency exchange rates, interest rates and commodity prices that could affect our financial condition, results of operations and cash flows. We manage our exposure to these and other market risks through regular operating and financing activities and through the use of derivative financial instruments. We use derivative financial instruments solely as risk management tools and not for speculative investment purposes.

FOREIGN CURRENCY EXCHANGE RISK

We operate on a global basis and are exposed to the risk that our financial condition, results of operations and cash flows could be adversely affected by changes in foreign currency exchange rates. We are primarily exposed to foreign currency exchange rate risk with respect to transactions and net assets denominated in Euros, Swiss Francs, Japanese Yen, British Pounds, Canadian Dollars, Australian Dollars, Korean Won, Swedish Krona, Czech Koruna, Thai Baht, Taiwan Dollars, South African Rand, Russian Rubles, Indian Rupees, Turkish Lira, Polish Zloty, Danish Krone, and Norwegian Krone. We manage the foreign currency exposure centrally, on a combined basis, which allows us to net exposures and to take advantage of any natural offsets. To reduce the uncertainty of foreign currency exchange rate movements on transactions denominated in foreign currencies, we enter into derivative financial instruments in the form of foreign currency exchange forward contracts with major financial institutions. These forward contracts are designed to hedge anticipated foreign currency transactions, primarily intercompany sale and purchase transactions, for periods consistent with commitments. Realized and unrealized gains and losses on these contracts that qualify as cash flow hedges are temporarily recorded in accumulated other comprehensive income, then recognized in cost of products sold when the hedged item affects net earnings.

For contracts outstanding at December 31, 2019, we had obligations to purchase U.S. Dollars and sell Euros, Japanese Yen, British Pounds, Canadian Dollars, Australian Dollars, Korean Won, Swedish Krona, Czech Koruna, Thai Baht, Taiwan Dollars, South African Rand, Russian Rubles, Indian Rupees, Turkish Lira, Polish Zloty, Danish Krone, and Norwegian Krone and purchase Swiss Francs and sell U.S. Dollars at set maturity dates ranging from January 2020 through June 2022. The notional amounts of outstanding forward contracts entered into with third parties to purchase U.S. Dollars at December 31, 2019 were $1,496.3 million. The notional amounts of outstanding forward contracts entered into with third parties to purchase Swiss Francs at December 31, 2019 were $276.0 million. The weighted average contract rates outstanding at December 31, 2019 were Euro:USD 1.21, USD:Swiss Franc 0.94, USD:Japanese Yen 104.34, British Pound:USD 1.37, USD:Canadian Dollar 1.30, Australian Dollar:USD 0.73, USD:Korean Won 1,138, USD:Swedish Krona 8.80, USD:Czech Koruna 22.11, USD:Thai Baht 31.17, USD:Taiwan Dollar 29.60, USD:South African Rand 15.40, USD:Russian Ruble 68.81, USD:Indian Ruppee 74.26, USD:Polish Zloty 3.72, USD:Danish Krone 6.15, and USD:Norwegian Krone 8.36.

We maintain written policies and procedures governing our risk management activities. Our policy requires that critical terms of hedging instruments be the same as hedged forecasted transactions. On this basis, with respect to cash flow hedges, changes in cash flows attributable to hedged transactions are generally expected to be offset by changes in the fair value of hedge instruments. As part of our risk management program, we also perform sensitivity analyses to assess potential changes in revenue, operating results, cash flows and financial position relating to hypothetical movements in currency exchange rates. A sensitivity analysis of changes in the fair value of foreign currency exchange forward contracts outstanding at December 31, 2019 indicated that, if the U.S. Dollar uniformly changed in value by 10 percent relative to the various currencies, with no change in the interest differentials, the fair value of those contracts would increase or decrease earnings before income taxes in periods through

June 2022, depending on the direction of the change, by the following average approximate amounts (in millions):

Currency	Average Amount
Euro	$43.5
Swiss Franc	28.5
Japanese Yen	54.0
British Pound	1.6
Canadian Dollar	14.3
Australian Dollar	13.3
Korean Won	2.6
Swedish Krona	2.4
Czech Koruna	1.7
Thai Baht	0.9
Taiwan Dollars	4.1
South African Rand	1.1
Russian Rubles	2.3
Indian Rupees	0.8
Polish Zloty	3.4
Danish Krone	3.0
Norwegian Krone	1.8

Any change in the fair value of foreign currency exchange forward contracts as a result of a fluctuation in a currency exchange rate is expected to be largely offset by a change in the value of the hedged transaction. Consequently, foreign currency exchange contracts would not subject us to material risk due to exchange rate movements because gains and losses on these contracts offset gains and losses on the assets, liabilities and transactions being hedged.

We had net assets, excluding goodwill and intangible assets, in legal entities with non-U.S. Dollar functional currencies of $1,193.5 million at December 31, 2019, primarily in Euros, Japanese Yen and Australian Dollars.

We enter into foreign currency forward exchange contracts with terms of one month to manage currency exposures for monetary assets and liabilities denominated in a currency other than an entity's functional currency. As a result, foreign currency remeasurement gains/losses recognized in earnings are generally offset with gains/losses on the foreign currency forward exchange contracts in the same reporting period.

For details about these and other financial instruments, including fair value methodologies, see Note 14 to our consolidated financial statements.

COMMODITY PRICE RISK

We purchase raw material commodities such as cobalt chrome, titanium, tantalum, polymer and sterile packaging. We enter into supply contracts generally with terms of 12 to 24 months, where available, on these commodities to alleviate the effect of market fluctuation in prices. As part of our risk management program, we perform sensitivity analyses related to potential commodity price changes. A 10 percent price change across all these commodities would not have a material effect on our consolidated financial position, results of operations or cash flows.

INTEREST RATE RISK

In the normal course of business, we are exposed to market risk from changes in interest rates that could affect our results of operations and financial condition. We manage our exposure to interest rate risks through our regular operations and financing activities.

We invest our cash and cash equivalents primarily in highly-rated corporate commercial paper and bank deposits. The primary investment objective is to ensure capital preservation. Currently, we do not use derivative financial instruments in our investment portfolio.

The majority of our debt is fixed-rate debt and therefore is not exposed to changes in interest rates. Based upon our overall interest rate exposure as of December 31, 2019, a change of 10 percent in interest rates, assuming the principal amount outstanding remains constant, would not have a material effect on interest expense, net. This analysis does not consider the effect of the change in the level of overall economic activity that could exist in such an environment.

CREDIT RISK

Financial instruments, which potentially subject us to concentrations of credit risk, are primarily cash and cash equivalents, derivative instruments and accounts receivable.

We place our cash and cash equivalents and enter into derivative transactions with highly-rated financial institutions and limit the amount of credit exposure to any one entity. We believe we do not have any significant credit risk on our cash and cash equivalents or derivative instruments.

Our concentrations of credit risks with respect to trade accounts receivable is limited due to the large number of customers and their dispersion across a number of geographic areas and by frequent monitoring of the creditworthiness of the customers to whom credit is granted in the normal course of business. Substantially all of our trade receivables are concentrated in the public and private hospital and healthcare industry in the U.S. and internationally or with distributors or dealers who operate in international markets and, accordingly, are exposed to their respective business, economic and country specific variables. Our ability to collect accounts receivable in some countries depends in part upon the financial stability of these hospital and healthcare sectors and the respective countries' national economic and healthcare systems. Most notably, in Europe healthcare is typically sponsored by the government. Since we sell products to public hospitals in those countries, we are indirectly exposed to government budget constraints. To the extent the respective governments' ability to fund their public hospital programs deteriorates, we may have to record significant bad debt expenses in the future.

While we are exposed to risks from the broader healthcare industry in Europe and around the world, there is no significant net exposure due to any individual customer. Exposure to credit risk is controlled through credit approvals, credit limits and monitoring procedures, and we believe that reserves for losses are adequate.

Item 8. **Financial Statements and Supplementary Data**

Zimmer Biomet Holdings, Inc.
Index to Consolidated Financial Statements

Report of Independent Registered Public Accounting Firm

To the Board of Directors and Stockholders of Zimmer Biomet Holdings, Inc.

Opinions on the Financial Statements and Internal Control over Financial Reporting

We have audited the accompanying consolidated balance sheets of Zimmer Biomet Holdings, Inc. and its subsidiaries (the "Company) as of December 31, 2019 and 2018, and the related consolidated statements of earnings, comprehensive income (loss), stockholders' equity and cash flows for each of the three years in the period ended December 31, 2019, including the related notes and schedule of valuation and qualifying accounts for each of the three years in the period ended December 31, 2019 appearing under Item 15(a)(2), (collectively referred to as the "consolidated financial statements"). We also have audited the Company's internal control over financial reporting as of December 31, 2019, based on criteria established in *Internal Control – Integrated Framework* (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO).

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of the Company as of December 31, 2019 and 2018, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2019 in conformity with 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, 2019, based on criteria established in *Internal Control—Integrated Framework* (2013) issued by the COSO.

Basis for Opinions

The Company's management is responsible for these consolidated 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 Annual Report on Internal Control over Financial Reporting appearing under Item 9A. Our responsibility is to express opinions on the Company's consolidated financial statements and on the Company's internal control over financial reporting based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud, and whether effective internal control over financial reporting was maintained in all material respects.

Our audits of the consolidated financial statements included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. 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.

Definition and Limitations of Internal Control over Financial Reporting

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (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.

Critical Audit Matters

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

Goodwill Impairment Assessment – EMEA and Dental Reporting Units

As described in Notes 2 and 10 to the consolidated financial statements, the Company's consolidated goodwill balance was $9,599.7 million as of December 31, 2019, and the goodwill associated with the EMEA reporting unit and the Dental reporting unit was $749.8 million and $397.7 million, respectively. Management conducts an impairment test in the fourth quarter of each year or whenever events or changes in circumstances indicate that the carrying value of the reporting unit's assets may not be recoverable. Potential impairment of a reporting unit is identified by comparing the reporting unit's estimated fair value to its carrying amount. The Company estimated the fair value of the Dental and EMEA reporting units based on income and market approaches. As disclosed by management, fair value under the income approach was determined by discounting to present value the estimated future cash flows of the reporting unit. Fair value under the market approach utilized the guideline public company methodology, which uses valuation indicators from other businesses that are similar to the EMEA and Dental reporting units. Significant assumptions are incorporated into the discounted cash flow analysis such as estimated growth rates and risk-adjusted discount rates.

The principal considerations for our determination that performing procedures relating to the goodwill impairment assessment of the EMEA and Dental reporting units is a critical audit matter are there was significant judgment by management when developing the fair value measurement of the reporting units. This in turn led to a high degree of auditor judgment, subjectivity, and effort in performing procedures and in evaluating management's discounted cash flow analysis and significant assumptions, including estimated growth rates and risk-adjusted discount rates. In addition, the audit effort involved the use of professionals with specialized skill and knowledge to assist in performing these procedures and evaluating the audit evidence obtained.

Addressing the matter involved performing procedures and evaluating audit evidence in connection with forming our overall opinion on the consolidated financial statements. These procedures included testing the effectiveness of controls relating to management's goodwill impairment assessment, including controls over the valuation of the Company's reporting units. These procedures also included, among others, (i) testing management's process for developing the fair value estimate, (ii) evaluating the appropriateness of management's fair value approaches, (iii) testing the completeness, accuracy and relevance of the underlying data used in the approaches, and (iv) evaluating significant assumptions used by management in the discounted cash flow analysis, including the revenue growth rates and the risk-adjusted discount rate. Evaluating management's assumptions related to revenue growth rates involved evaluating whether the assumptions used by management were reasonable considering the past performance of the reporting units, the consistency with external data from other sources, and whether these assumptions were consistent with evidence obtained in other areas of the audit. Professionals with specialized skill and knowledge were used to assist in the evaluation of the Company's discounted cash flow analysis and certain significant assumptions, including the risk-adjusted discount rate.

Tax Liabilities for Unrecognized Tax Benefits

As described in Notes 2 and 16 to the consolidated financial statements, the Company has recorded tax liabilities for unrecognized tax benefits of $741.8 million as of December 31, 2019. The calculation of the Company's estimated tax liabilities involves dealing with uncertainties in the application of complex tax laws and regulations in a multitude of jurisdictions across the Company's global operations. The Company's income tax filings are regularly under audit in multiple federal, state and foreign jurisdictions. Income tax audits may require an extended period of time to reach resolution and may result in significant income tax adjustments when interpretation of tax laws or allocation of company profits is disputed.

The principal considerations for our determination that performing procedures relating to tax liabilities for unrecognized tax benefits is a critical audit matter are that there was significant judgment by management when determining the tax liabilities, including a high degree of estimation uncertainty relative to the numerous and complex tax laws and regulations, frequency of income tax audits, and potential for significant adjustments as a result of such audits. This in turn led to a high degree of auditor judgment, subjectivity, and effort in performing procedures to evaluate the timely identification and accurate measurement of tax liabilities for unrecognized tax benefits. Also, the evaluation of audit evidence available to support the estimates is complex and required significant auditor judgment as the nature of the evidence is often highly subjective, and the audit effort involved the use of professionals with specialized skill and knowledge to assist in performing these procedures and evaluating the audit evidence obtained.

Addressing the matter involved performing procedures and evaluating audit evidence in connection with forming our overall opinion on the consolidated financial statements. These procedures included testing the effectiveness of controls relating to the identification, accurate measurement, and recognition of tax liabilities for unrecognized tax benefits, including controls addressing completeness of the tax liabilities. These procedures also included, among others, (i) testing certain information used in the calculation of tax liabilities for unrecognized tax benefits by jurisdiction on a sample basis, (ii) assessing the completeness of the Company's identification of tax liabilities for unrecognized tax benefits and possible outcomes for each unrecognized tax benefit, and (iii) evaluating the status and results of income tax audits with the relevant tax authorities. Professionals with specialized skill and knowledge were used to assist in the evaluation of the Company's interpretation and application of relevant tax laws and regulations in various jurisdictions and assessing the reasonableness of the Company's tax positions.

/s/ PricewaterhouseCoopers LLP
Chicago, Illinois
February 21, 2020

We have served as the Company's auditor since 2000.

CONSOLIDATED STATEMENTS OF EARNINGS

(in millions, except per share amounts)

	For the Years Ended December 31,		
	2019	2018	2017
Net Sales	$7,982.2	$7,932.9	$ 7,803.3
Cost of products sold, excluding intangible asset amortization	2,252.6	2,271.9	2,132.9
Intangible asset amortization	584.3	595.9	603.9
Research and development	449.3	391.7	369.9
Selling, general and administrative	3,343.8	3,379.3	3,104.7
Goodwill and intangible asset impairment	70.1	979.7	331.5
Quality remediation	82.4	146.9	181.3
Restructuring and other cost reduction initiatives	50.0	34.2	17.6
Acquisition, integration and related	12.2	99.5	262.2
Operating expenses	6,844.7	7,899.1	7,004.0
Operating Profit	1,137.5	33.8	799.3
Other expense, net	(4.8)	(15.6)	(9.4)
Interest expense, net	(226.9)	(289.3)	(325.3)
Earnings (loss) before income taxes	905.8	(271.1)	464.6
(Benefit) provision for income taxes	(225.7)	108.2	(1,348.8)
Net Earnings (Loss)	1,131.5	(379.3)	1,813.4
Less: Net loss attributable to noncontrolling interest	(0.1)	(0.1)	(0.4)
Net Earnings (Loss) of Zimmer Biomet Holdings, Inc.	$1,131.6	$ (379.2)	$ 1,813.8
Earnings (Loss) Per Common Share – Basic	$ 5.52	$ (1.86)	$ 8.98
Earnings (Loss) Per Common Share – Diluted	$ 5.47	$ (1.86)	$ 8.90
Weighted Average Common Shares Outstanding			
Basic	205.1	203.5	201.9
Diluted	206.7	203.5	203.7

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

CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME (LOSS)
(in millions)

	For the Years Ended December 31,		
	2019	2018	2017
Net Earnings (Loss)	$1,131.5	$(379.3)	$1,813.4
Other Comprehensive (Loss) Income:			
Foreign currency cumulative translation adjustments, net of tax	(1.5)	(135.4)	445.0
Unrealized cash flow hedge gains/(losses), net of tax	30.6	68.2	(95.0)
Reclassification adjustments on cash flow hedges, net of tax	(35.1)	23.6	(3.8)
Adjustments to prior service cost and unrecognized actuarial assumptions, net of tax	(48.5)	(17.7)	4.6
Total Other Comprehensive (Loss) Income	(54.5)	(61.3)	350.8
Comprehensive Income (Loss)	1,077.0	(440.6)	2,164.2
Comprehensive Loss Attributable to Noncontrolling Interest	(0.1)	(0.1)	(1.3)
Comprehensive Income (Loss) Attributable to Zimmer Biomet Holdings, Inc.	$1,077.1	$(440.5)	$2,165.5

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

CONSOLIDATED BALANCE SHEETS

(in millions, except share amounts)

	As of December 31,	
	2019	2018
ASSETS		
Current Assets:		
Cash and cash equivalents	$ 617.9	$ 542.8
Accounts receivable, less allowance for doubtful accounts	1,363.9	1,275.8
Inventories	2,385.0	2,256.5
Prepaid expenses and other current assets	357.1	352.3
Total Current Assets	4,723.9	4,427.4
Property, plant and equipment, net	2,077.4	2,015.4
Goodwill	9,599.7	9,594.4
Intangible assets, net	7,257.6	7,684.6
Other assets	980.1	405.0
Total Assets	$24,638.7	$24,126.8
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current Liabilities:		
Accounts payable	$ 400.9	$ 362.6
Income taxes payable	126.7	142.4
Other current liabilities	1,413.9	1,391.3
Current portion of long-term debt	1,500.0	525.0
Total Current Liabilities	3,441.5	2,421.3
Deferred income taxes, net	840.1	999.5
Long-term income tax payable	685.1	666.2
Other long-term liabilities	557.8	350.0
Long-term debt	6,721.4	8,413.7
Total Liabilities	12,245.9	12,850.7
Commitments and Contingencies (Note 20)		
Stockholders' Equity:		
Common stock, $0.01 par value, one billion shares authorized, 309.9 million (307.9 million in 2018) issued	3.1	3.1
Paid-in capital	8,920.1	8,686.1
Retained earnings	10,427.3	9,491.2
Accumulated other comprehensive loss	(241.9)	(187.4)
Treasury stock, 103.9 million shares (103.9 million shares in 2018)	(6,720.5)	(6,721.7)
Total Zimmer Biomet Holdings, Inc. stockholders' equity	12,388.1	11,271.3
Noncontrolling interest	4.7	4.8
Total Stockholders' Equity	12,392.8	11,276.1
Total Liabilities and Stockholders' Equity	$24,638.7	$24,126.8

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

CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY
(in millions)

	Zimmer Biomet Holdings, Inc. Stockholders								
	Common Shares		Paid-in	Retained	Accumulated Other Comprehensive	Treasury Shares		Noncontrolling	Total Stockholders'
	Number	Amount	Capital	Earnings	(Loss) Income	Number	Amount	Interest	Equity
Balance January 1, 2017	304.7	$3.1	$8,368.5	$ 8,467.1	$(434.0)	(104.1)	$(6,735.8)	$ 1.0	$ 9,669.9
Net earnings	–	–	–	1,813.8	–	–	–	(0.4)	1,813.4
Other comprehensive income	–	–	–	–	350.8	–	–	(0.9)	349.9
Cash dividends declared ($0.96 per share)	–	–	–	(194.1)	–	–	–	–	(194.1)
Retrospective adoption of new accounting standard	–	–	–	(77.8)	–	–	–	–	(77.8)
Stock compensation plans	1.8	–	146.4	13.8	–	0.2	14.0	–	174.2
Balance December 31, 2017	306.5	3.1	8,514.9	10,022.8	(83.2)	(103.9)	(6,721.8)	(0.3)	11,735.5
Net loss	–	–	–	(379.2)	–	–	–	(0.1)	(379.3)
Other comprehensive loss	–	–	–	–	(61.3)	–	–	–	(61.3)
Cash dividends declared ($0.96 per share)	–	–	–	(195.5)	–	–	–	–	(195.5)
Adoption of new accounting standard	–	–	–	42.9	(42.9)	–	–	–	–
Sale of shares in a subsidiary without loss of control	–	–	–	–	–	–	–	5.2	5.2
Stock compensation plans	1.4	–	171.2	0.2	–	–	0.1	–	171.5
Balance December 31, 2018	307.9	3.1	8,686.1	9,491.2	(187.4)	(103.9)	(6,721.7)	4.8	11,276.1
Net earnings	–	–	–	1,131.6	–	–	–	(0.1)	1,131.5
Other comprehensive loss	–	–	–	–	(54.5)	–	–	–	(54.5)
Cash dividends declared ($0.96 per share)	–	–	–	(197.2)	–	–	–	–	(197.2)
Stock compensation plans	2.0	–	234.0	1.7	–	–	1.2	–	236.9
Balance December 31, 2019	309.9	$3.1	$8,920.1	$10,427.3	$(241.9)	(103.9)	$(6,720.5)	$ 4.7	$12,392.8

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

CONSOLIDATED STATEMENTS OF CASH FLOWS
(in millions)

	For the Years Ended December 31,		
	2019	2018	2017
Cash flows provided by (used in) operating activities:			
Net earnings (loss)	$1,131.5	$ (379.3)	$ 1,813.4
Adjustments to reconcile net earnings to net cash provided by operating activities:			
Depreciation and amortization	1,006.1	1,040.5	1,062.7
Share-based compensation	84.3	65.5	53.7
Goodwill and intangible asset impairment	70.1	979.7	331.5
Inventory step-up	–	–	32.8
Deferred income tax benefit (provision)	(538.7)	13.4	(1,776.0)
Changes in operating assets and liabilities, net of acquired assets and liabilities			
Income taxes	111.4	(150.8)	150.2
Receivables	(93.8)	213.6	161.7
Inventories	(125.2)	(199.5)	(120.1)
Accounts payable and accrued liabilities	(42.0)	155.9	(133.3)
Other assets and liabilities	(17.9)	8.4	5.7
Net cash provided by operating activities	1,585.8	1,747.4	1,582.3
Cash flows provided by (used in) investing activities:			
Additions to instruments	(315.9)	(276.3)	(337.0)
Additions to other property, plant and equipment	(207.1)	(162.7)	(156.0)
Net investment hedge settlements	48.1	69.2	–
Acquisition of intellectual property rights	(197.6)	–	–
Business combination investments, net of acquired cash	(37.1)	(15.3)	(4.0)
Investments in other assets	(19.7)	(31.5)	(13.8)
Net cash used in investing activities	(729.3)	(416.6)	(510.8)
Cash flows provided by (used in) financing activities:			
Proceeds from senior notes	549.2	749.5	–
Proceeds from multicurrency revolving facility	–	400.0	400.0
Payments on multicurrency revolving facility	–	(400.0)	(400.0)
Redemption of senior notes	(500.0)	(1,150.0)	(500.0)
Proceeds from term loans	200.0	675.0	192.7
Payments on term loans	(960.0)	(1,425.0)	(940.0)
Net payments on other debt	(5.3)	(3.9)	(0.9)
Dividends paid to stockholders	(196.7)	(195.2)	(193.6)
Proceeds from employee stock compensation plans	158.2	107.9	145.5
Net cash flows from unremitted collections from factoring programs	(12.2)	(36.7)	103.5
Business combination contingent consideration payments	(2.9)	(19.8)	(9.1)
Other financing activities	(10.2)	(4.0)	(8.6)
Net cash used in financing activities	(779.9)	(1,302.2)	(1,210.5)
Effect of exchange rates on cash and cash equivalents	(1.5)	(10.2)	29.3
Increase (decrease) in cash and cash equivalents	75.1	18.4	(109.7)
Cash and cash equivalents, beginning of year	542.8	524.4	634.1
Cash and cash equivalents, end of period	$ 617.9	$ 542.8	$ 524.4

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

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

1. Business

We design, manufacture and market orthopedic reconstructive products; sports medicine, biologics, extremities and trauma products; office based technologies; spine, craniomaxillofacial and thoracic products; dental implants; and related surgical products. We collaborate with healthcare professionals around the globe to advance the pace of innovation. Our products and solutions help treat patients suffering from disorders of, or injuries to, bones, joints or supporting soft tissues. Together with healthcare professionals, we help millions of people live better lives.

The words "Zimmer Biomet," "we," "us," "our," "the Company" and similar words refer to Zimmer Biomet Holdings, Inc. and its subsidiaries. "Zimmer Biomet Holdings" refers to the parent company only. In 2015, we completed our merger with LVB Acquisition, Inc., the parent company of Biomet, Inc. ("Biomet") (which merger is sometimes referred to herein as the "Biomet merger").

2. Significant Accounting Policies

Basis of Presentation – The consolidated financial statements include the accounts of Zimmer Biomet Holdings and its subsidiaries in which it holds a controlling financial interest. All significant intercompany accounts and transactions are eliminated.

Use of Estimates – The consolidated financial statements are prepared in conformity with accounting principles generally accepted in the U.S. which require us to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

Foreign Currency Translation – The financial statements of our foreign subsidiaries are translated into U.S. Dollars using period-end exchange rates for assets and liabilities and average exchange rates for operating results. Unrealized translation gains and losses are included in accumulated other comprehensive loss (income) in stockholders' equity. When a transaction is denominated in a currency other than the subsidiary's functional currency, we recognize a transaction gain or loss when the transaction is settled.

Shipping and Handling – Amounts billed to customers for shipping and handling of products are reflected in net sales and are not significant. Expenses incurred related to shipping and handling of products are reflected in selling, general and administrative ("SG&A") expenses and were $292.7 million, $290.2 million and $263.6 million for the years ended December 31, 2019, 2018 and 2017, respectively.

Research and Development – We expense all research and development ("R&D") costs as incurred except when there is an alternative future use for the R&D. R&D costs include salaries, prototypes, depreciation of equipment used in R&D, consultant fees and service fees paid to collaborative partners. Where contingent milestone payments are due to third parties under R&D arrangements, we expense the milestone payment obligations when it is probable that the milestone results will be achieved.

Litigation – We record a liability for contingent losses, including future legal costs, settlements and judgments, when we consider it is probable that a liability has been incurred and the amount of the loss can be reasonably estimated.

Quality remediation – We use the financial statement line item "Quality remediation" to recognize expenses related to addressing inspectional observations on Form 483 and a warning letter issued by the FDA following its inspections of our Warsaw North Campus facility, among other matters. See Note 20 for additional information about the Form 483 and warning letter. The majority of these expenses are related to consultants who are helping us to update previous documents and redesign certain processes.

Restructuring and other cost reduction initiatives – A restructuring is defined as a program that is planned and controlled by management, and materially changes either the scope of a business undertaken by an entity, or the manner in which that business is conducted. Restructuring charges include (i) termination benefits related to employee terminations, (ii) contract termination costs and (iii) other related costs associated with exit or disposal activities.

In December 2019, our Board of Directors approved, and we initiated, a new global restructuring program with an objective of reducing costs to allow us to further invest in higher priority growth opportunities. We have reclassified $34.2 million and $17.6 million in the years ended December 31, 2018 and 2017, respectively, from the "Acquisition, integration and related" line item to the "Restructuring and other cost reduction initiatives" line item, which amounts were primarily attributable to project costs related to our supply chain optimization initiative.

Acquisition, integration and related – We use the financial statement line item, "Acquisition, integration and related" to recognize expenses resulting from the consummation of business mergers and acquisitions and the related integration of those businesses. Acquisition, integration and related gains and expenses are primarily composed of:

- Consulting and professional fees related to third-party integration consulting performed in a variety of areas, such as tax, compliance, logistics and human resources, and legal fees related to the consummation of mergers and acquisitions.
- Employee termination benefits related to terminating employees with overlapping responsibilities in various areas of our business.
- Dedicated project personnel expenses which include the salary, benefits, travel expenses and other costs directly associated with employees who are 100 percent dedicated to our integration of acquired businesses and employees who

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS *(Continued)*

have been notified of termination, but are continuing to work on transferring their responsibilities.
- Contract termination expenses related to terminated contracts, primarily with sales agents and distribution agreements.
- Other various expenses to relocate facilities, integrate information technology, losses incurred on assets resulting from the applicable acquisition, and other various expenses.

We have reclassified $34.2 million and $17.6 million in the years ended December 31, 2018 and 2017, respectively, from the "Acquisition, integration and related" line item to the "Restructuring and other cost reduction initiatives" line item, which amounts were primarily attributable to project costs related to our supply chain optimization initiative.

Cash and Cash Equivalents – We consider all highly liquid investments with an original maturity of three months or less to be cash equivalents. The carrying amounts reported in the balance sheet for cash and cash equivalents are valued at cost, which approximates their fair value.

Accounts Receivable – Accounts receivable consists of trade and other miscellaneous receivables. We grant credit to customers in the normal course of business and maintain an allowance for doubtful accounts for potential credit losses. We determine the allowance for doubtful accounts by geographic market and take into consideration historical credit experience, creditworthiness of the customer and other pertinent information. We make concerted efforts to collect all accounts receivable, but sometimes we have to write-off the account against the allowance when we determine the account is uncollectible. The allowance for doubtful accounts was $65.0 million and $65.7 million as of December 31, 2019 and 2018, respectively.

We also have receivables purchase arrangements with unrelated third parties to transfer portions of our trade accounts receivable balance. Funds received from the transfers are recorded as an increase to cash and a reduction to accounts receivable outstanding in our consolidated balance sheets. We report the cash flows attributable to the sale of receivables to third parties in cash flows from operating activities in our consolidated statements of cash flows. Net expenses resulting from the sales of receivables are recognized in SG&A expense. Net expenses include any resulting gains or losses from the sales of receivables, credit insurance and factoring fees. Any collections that we make that are unremitted to the third parties are recognized on our consolidated balance sheets under other current liabilities and in our consolidated statements of cash flows in financing activities.

Inventories – Inventories are stated at the lower of cost and net realizable value, with cost determined on a first-in first-out basis.

Property, Plant and Equipment – Property, plant and equipment is carried at cost less accumulated depreciation. Depreciation is computed using the straight-line method based on estimated useful lives of ten to forty years for buildings and improvements and three to eight years for machinery and equipment. Maintenance and repairs are expensed as incurred. We review property, plant and equipment for impairment whenever events or changes in circumstances indicate that the carrying value of an asset may not be recoverable. An impairment loss would be recognized when estimated future undiscounted cash flows relating to the asset are less than its carrying amount. An impairment loss is measured as the amount by which the carrying amount of an asset exceeds its fair value.

Software Costs – We capitalize certain computer software and software development costs incurred in connection with developing or obtaining computer software for internal use when both the preliminary project stage is completed and it is probable that the software will be used as intended. Capitalized software costs generally include external direct costs of materials and services utilized in developing or obtaining computer software and compensation and related benefits for employees who are directly associated with the software project. Capitalized software costs are included in property, plant and equipment on our balance sheet and amortized on a straight-line or weighted average estimated user basis when the software is ready for its intended use over the estimated useful lives of the software, which approximate three to fifteen years.

Instruments – Instruments are hand-held devices used by surgeons during total joint replacement and other surgical procedures. Instruments are recognized as long-lived assets and are included in property, plant and equipment. Undeployed instruments are carried at cost or realizable value. Instruments that have been deployed to be used in surgeries are carried at cost less accumulated depreciation. Depreciation is computed using the straight-line method based on average estimated useful lives, determined principally in reference to associated product life cycles, primarily five years. We review instruments for impairment whenever events or changes in circumstances indicate that the carrying value of an instrument may not be recoverable. Depreciation of instruments is recognized as SG&A expense.

Goodwill – Goodwill is not amortized but is subject to annual impairment tests. Goodwill has been assigned to reporting units. We perform annual impairment tests by either comparing a reporting unit's estimated fair value to its carrying amount or doing a qualitative assessment of a reporting unit's fair value from the last quantitative assessment to determine if there is potential impairment. We may do a qualitative assessment when the results of the previous quantitative test indicated the reporting unit's estimated fair value was significantly in excess of the carrying value of its net assets and we do not believe there have been significant changes in the reporting unit's operations that would significantly decrease its estimated fair value or significantly increase its net assets. If a quantitative assessment is performed, the fair value of the reporting unit and the fair value of goodwill are determined based upon a discounted cash flow analysis and/or

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS *(Continued)*

use of a market approach by looking at market values of comparable companies. Significant assumptions are incorporated into our discounted cash flow analyses such as estimated growth rates and risk-adjusted discount rates. We perform this test in the fourth quarter of the year or whenever events or changes in circumstances indicate that the carrying value of the reporting unit's assets may not be recoverable. If the fair value of the reporting unit is less than its carrying value, an impairment loss is recorded in the amount that the carrying value of the business unit exceeds the fair value. See Note 10 for more information regarding goodwill.

Intangible Assets – Intangible assets are initially measured at their fair value. We have determined the fair value of our intangible assets either by the fair value of the consideration exchanged for the intangible asset or the estimated after-tax discounted cash flows expected to be generated from the intangible asset. Intangible assets with an indefinite life, including certain trademarks and trade names and in-process research and development ("IPR&D") projects, are not amortized. Indefinite life intangible assets are assessed annually to determine whether events and circumstances continue to support an indefinite life. Intangible assets with a finite life, including technology, certain trademarks and trade names, customer-related intangibles, intellectual property rights and patents and licenses are amortized on a straight-line basis over their estimated useful life or contractual life, which may range from less than one year to twenty years. Intangible assets with a finite life are tested for impairment whenever events or circumstances indicate that the carrying amount may not be recoverable.

Intangible assets with an indefinite life are tested for impairment annually or whenever events or circumstances indicate that the carrying amount may not be recoverable. An impairment loss is recognized if the carrying amount exceeds the estimated fair value of the asset. The amount of the impairment loss to be recorded would be determined based upon the excess of the asset's carrying value over its fair value. The fair values of indefinite lived intangible assets are determined based upon a discounted cash flow analysis using the relief from royalty method or a qualitative assessment may be performed for any changes to the asset's fair value from the last quantitative assessment. The relief from royalty method estimates the cost savings associated with owning, rather than licensing, assets. Significant assumptions are incorporated into these discounted cash flow analyses such as estimated growth rates, royalty rates and risk-adjusted discount rates. We may do a qualitative assessment when the results of the previous quantitative test indicated that the asset's fair value was significantly in excess of its carrying value.

In determining the useful lives of intangible assets, we consider the expected use of the assets and the effects of obsolescence, demand, competition, anticipated technological advances, changes in surgical techniques, market influences and other economic factors. For technology-based intangible assets, we consider the expected life cycles of products, absent unforeseen technological advances, which incorporate the corresponding technology.

Trademarks and trade names that do not have a wasting characteristic (i.e., there are no legal, regulatory, contractual, competitive, economic or other factors which limit the useful life) are assigned an indefinite life. Trademarks and trade names that are related to products expected to be phased out are assigned lives consistent with the period in which the products bearing each brand are expected to be sold. For customer relationship intangible assets, we assign useful lives based upon historical levels of customer attrition. Intellectual property rights are assigned useful lives that approximate the contractual life of any related patent or the period for which we maintain exclusivity over the intellectual property.

Income Taxes – We account for income taxes under the asset and liability method, which requires the recognition of deferred tax assets and liabilities for the expected future tax consequences of events that have been included in the financial statements. Under this method, deferred tax assets and liabilities are determined based on the differences between the financial statements and tax basis of assets and liabilities using enacted tax rates in effect for the year in which the differences are expected to reverse. The effect of a change in tax rates on deferred tax assets and liabilities is recognized in income in the period the new tax rate is enacted.

We reduce our deferred tax assets by a valuation allowance if it is more likely than not that we will not realize some portion or all of the deferred tax assets. In making such determination, we consider all available positive and negative evidence, including future reversals of existing taxable temporary differences, projected future taxable income, tax planning strategies and recent financial operations. In the event we were to determine that we would be able to realize our deferred income tax assets in the future in excess of their net recorded amount, we would make an adjustment to the valuation allowance which would reduce the provision for income taxes.

We operate on a global basis and are subject to numerous and complex tax laws and regulations. Our income tax filings are regularly under audit in multiple federal, state and foreign jurisdictions. Income tax audits may require an extended period of time to reach resolution and may result in significant income tax adjustments when interpretation of tax laws or allocation of company profits is disputed. Because income tax adjustments in certain jurisdictions can be significant, we record accruals representing management's best estimate of the probable resolution of these matters. To the extent additional information becomes available, such accruals are adjusted to reflect the revised estimated probable outcome.

Derivative Financial Instruments – We measure all derivative instruments at fair value and report them on our consolidated balance sheet as assets or liabilities. We maintain written policies and procedures that permit, under appropriate circumstances and subject to proper authorization, the use of derivative financial instruments solely for risk management

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS *(Continued)*

purposes. The use of derivative financial instruments for trading or speculative purposes is prohibited by our policy. See Note 14 for more information regarding our derivative and hedging activities.

Accumulated Other Comprehensive (Loss) Income – Accumulated other comprehensive income (loss) ("AOCI") refers to revenues, expenses, gains and losses that under generally accepted accounting principles are included in comprehensive income but are excluded from net earnings as these amounts are recorded directly as an adjustment to stockholders' equity. Our AOCI is comprised of foreign currency translation adjustments, including unrealized gains and losses on net investments hedges, unrealized gains and losses on cash flow hedges and amortization of prior service costs and unrecognized gains and losses in actuarial assumptions.

Treasury Stock – We account for repurchases of common stock under the cost method and present treasury stock as a reduction of stockholders' equity. We reissue common stock held in treasury only for limited purposes.

Noncontrolling Interest – We have investments in other companies in which we have a controlling financial interest, but not 100 percent of the equity. Further information related to the noncontrolling interests of those investments have not been provided as it is not significant to our consolidated financial statements.

Accounting Pronouncements Recently Adopted

In February 2016, the Financial Accounting Standards Board ("FASB") issued Accounting Standard Update ("ASU") 2016-02 – Leases (Topic 842). This ASU requires lessees to recognize right-of-use assets and lease liabilities on the balance sheet. This ASU was effective for us as of January 1, 2019. This ASU required a modified retrospective transition method that could either be applied at the earliest comparative period in the financial statements or the period of adoption. We elected to use the period of adoption (January 1, 2019) transition method and therefore did not recast prior periods. This ASU allowed for certain practical expedients to make the adoption of the ASU less burdensome. We elected the practical expedients upon transition which permitted us to not reassess lease identification, classification, and initial direct costs under the new standard for leases that commenced prior to the effective date. We also elected not to recognize a right-of-use asset nor a lease liability for leases with an initial term of twelve months or less. Finally, we elected not to separate non-lease components from the leased components in the valuation of our right-of-use asset and lease liability for all asset classes.

On January 1, 2019, we recognized a right-of-use asset of $274.7 million in other assets and lease liabilities of $62.2 million and $221.2 million in other current liabilities and other long-term liabilities, respectively. No cumulative adjustment to retained earnings was required upon adoption. We do not have any significant finance leases. See Note 19 for additional information.

Accounting Pronouncements Not Yet Adopted

In June 2016, the FASB issued ASU 2016-13, Financial Instruments – Credit Losses (Topic 326). The new guidance describes the current expected credit loss ("CECL") model which requires an estimate of expected impairment on financial instruments over the lifetime of the assets at each reporting date. Financial instruments in scope of the guidance include financial assets measured at amortized cost. Current accounting guidance requires recognition of impairment when it is probable the loss has been incurred. Under the CECL model, lifetime expected credit losses are measured and recognized at each reporting date based on historical experience, current conditions and forecasted information. The standard is effective for interim and annual periods after December 15, 2019. Adoption of this standard requires a modified retrospective transition method, which will result in a cumulative-effect adjustment to retained earnings in the period of adoption. We will adopt this standard as of January 1, 2020. The standard will primarily impact our trade receivables. We are currently evaluating the impact the standard will have on our consolidated financial statements, but at this time we do not expect it to be significant.

There are no other recently issued accounting pronouncements that we have not yet adopted that are expected to have a material effect on our financial position, results of operations or cash flows.

3. Revenue Recognition

We recognize revenue when our performance obligations under the terms of a contract with our customer are satisfied. This happens when we transfer control of our products to the customer, which generally occurs upon implantation or when title passes upon shipment. Revenue is measured as the amount of consideration we expect to receive in exchange for transferring our product. Taxes collected from customers and remitted to governmental authorities are excluded from revenues.

We sell products through three principal channels: 1) direct to healthcare institutions, referred to as direct channel accounts; 2) through stocking distributors and healthcare dealers; and 3) directly to dental practices and dental laboratories. In direct channel accounts and with some healthcare dealers, inventory is generally consigned to sales agents or customers so that products are available when needed for surgical procedures. No revenue is recognized upon the placement of inventory into consignment, as we retain the ability to control the inventory. Upon implantation, we issue an invoice and revenue is recognized. Consignment sales represented approximately 80 percent of our net sales in 2019. Pricing for products is generally predetermined by contracts with customers, agents acting on behalf of customer groups or by government regulatory bodies, depending on the market.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS *(Continued)*

Price discounts under group purchasing contracts are generally linked to volume of implant purchases by customer healthcare institutions within a specified group. At negotiated thresholds within a contract buying period, price discounts may increase. Payment terms vary by customer, but are typically less than 90 days.

With sales to stocking distributors, some healthcare dealers, dental practices and dental laboratories, revenue is generally recognized when control of our product passes to the customer, which is typically upon shipment of the product. We estimate sales recognized in this manner represented approximately 20 percent of our net sales in 2019. These customers may purchase items in large quantities if incentives are offered or if there are new product offerings in a market, which could cause period-to-period differences in sales. It is our accounting policy to account for shipping and handling activities as a fulfillment cost rather than as an additional promised service. We have contracts with these customers or orders may be placed from available price lists. Payment terms vary by customer, but are typically less than 90 days.

We offer standard warranties to our customers that our products are not defective. These standard warranties are not considered separate performance obligations. In limited circumstances, we offer extended warranties that are separate performance obligations. We have very few contracts that have multiple performance obligations. Since we do not have significant multiple element arrangements and essentially all of our sales are recognized upon implantation of a product or when title passes, very little judgment is required to allocate the transaction price of a contract or determine when control has passed to a customer. Our costs to obtain contracts consist primarily of sales commissions to employees or third party agents that are earned when control of our product passes to the customer. Therefore, sales commissions are expensed as part of SG&A expenses at the same time revenue is recognized. Accordingly, we do not have significant contract assets, liabilities or future performance obligations.

We offer volume-based discounts, rebates, prompt pay discounts, right of return and other various incentives which we account for under the variable consideration model. If sales incentives may be earned by a customer for purchasing a specified amount of our product, we estimate whether such incentives will be achieved and recognize these incentives as a reduction in revenue in the same period the underlying revenue transaction is recognized. We primarily use the expected value method to estimate incentives. Under the expected value method, we consider the historical experience of similar programs as well as review sales trends on a customer-by-customer basis to estimate what levels of incentives will be earned. Occasionally, products are returned and, accordingly, we maintain an estimated refund liability based upon the expected value method that is recorded as a reduction in revenue.

We analyze sales by three geographies, the Americas; Europe, Middle East and Africa (“EMEA”); and Asia Pacific; and by the following product categories: Knees; Hips; Surgical, Sports Medicine, Biologics, Foot and Ankle, Extremities and Trauma (“S.E.T.”); Spine & Craniomaxillofacial and Thoracic (“CMF”); Dental; and Other. As discussed in Note 18, we have seven operating segments that are based upon geography and product categories. The geographic segments include sales of all product categories exclusive of the specific product category operating segments. The geographic operating segments are the Americas, EMEA and Asia Pacific. These three operating segments are our reporting segments. The product category operating segments are Spine, less Asia Pacific; Office Based Technologies; CMF; and Dental. The product operating segments do not constitute a reporting segment because they are, individually and on a combined basis, insignificant to our consolidated results.

Our sales analysis differs from our reporting operating segments because the underlying market trends in any particular geography tend to be similar across product categories, we primarily sell the same products in all geographies and the product category operating segments are not individually significant to our consolidated results.

Net sales by geography are as follows (in millions):

	For the Years Ended December 31,		
	2019	2018	2017
Americas	$4,875.8	$4,837.2	$4,844.8
EMEA	1,746.9	1,801.9	1,745.2
Asia Pacific	1,359.5	1,293.8	1,213.3
Total	$7,982.2	$7,932.9	$7,803.3

Net sales by product category are as follows (in millions):

	For the Years Ended December 31,		
	2019	2018	2017
Knees	$2,810.1	$2,773.7	$2,734.0
Hips	1,935.1	1,921.4	1,871.8
S.E.T	1,795.7	1,751.8	1,701.8
Spine & CMF	747.3	763.9	757.9
Dental	414.0	411.2	418.6
Other	280.0	310.9	319.2
Total	$7,982.2	$7,932.9	$7,803.3

4. Restructuring

In December 2019, our Board of Directors approved, and we initiated, a new global restructuring program (the “2019 Restructuring Plan”) with an objective of reducing costs to allow us to further invest in higher priority growth opportunities. The 2019 Restructuring Plan is expected to result in total pre-tax restructuring charges of approximately $350 million to $400 million and reduce gross annual pre-tax

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS *(Continued)*

operating expenses by approximately $200 million to $300 million by the end of 2023 as program benefits are realized. The pre-tax restructuring charges will consist of employee termination benefits; contract terminations for facilities and sales agents; and other charges, such as consulting fees, project management and relocation costs. The restructuring charges incurred in 2019 primarily relate to employee termination benefits, consulting and project management. The following table summarizes the liabilities recognized related to the 2019 Restructuring Plan (in millions):

	Employee Termination Benefits	Other	Total
Balance, December 31, 2018	$ –	$ –	$ –
Additions	23.2	13.1	36.3
Cash payments	–	(9.0)	(9.0)
Balance, December 31, 2019	$23.2	$ 4.1	$27.3

We do not include restructuring charges in the operating profit of our reportable segments.

In our consolidated statement of earnings, we report restructuring charges in our "Restructuring and other cost reduction initiatives" financial statement line item. We report the expenses for other cost reduction initiatives with restructuring expenses because these activities both have the goal of reducing costs across the organization. However, since the cost reduction initiative expenses are not considered restructuring, they have been excluded from the amounts presented in this note.

5. Share-Based Compensation

Our share-based payments primarily consist of stock options and restricted stock units ("RSUs"). Share-based compensation expense was as follows (in millions):

	For the Years Ended December 31,		
	2019	2018	2017
Total expense, pre-tax	$84.3	$65.5	$53.7
Tax benefit related to awards	21.8	14.6	12.5
Total expense, net of tax	$62.5	$50.9	$41.2

We had two equity compensation plans in effect at December 31, 2019: the 2009 Stock Incentive Plan ("2009 Plan") and the Stock Plan for Non-Employee Directors. We have reserved the maximum number of shares of common stock available for awards under the terms of each of these plans. We have registered 71.6 million shares of common stock under these plans. The 2009 Plan provides for the grant of nonqualified stock options and incentive stock options, long-term performance awards in the form of performance shares or units, restricted stock, RSUs and stock appreciation rights. The Compensation and Management Development Committee of the Board of Directors determines the grant date for annual grants under our equity compensation plans. The date for annual grants under the 2009 Plan to our executive officers is expected to occur in the first quarter of each year following the earnings announcements for the previous quarter and full year. The Stock Plan for Non-Employee Directors provides for awards of stock options, restricted stock and RSUs to non-employee directors. It has been our practice to issue shares of common stock upon exercise of stock options from previously unissued shares, except in limited circumstances where they are issued from treasury stock. The total number of awards which may be granted in a given year and/or over the life of the plan under each of our equity compensation plans is limited. At December 31, 2019, an aggregate of 7.8 million shares were available for future grants and awards under these plans.

Stock Options

Stock options granted to date under our plans vest over two or four years and have a maximum contractual life of 10 years. As established under our equity compensation plans, vesting may accelerate upon retirement after the first anniversary date of the award if certain criteria are met. We recognize expense related to stock options on a straight-line basis over the requisite service period, less awards expected to be forfeited using estimated forfeiture rates. Due to the accelerated retirement provisions, the requisite service period of our stock options range from one to four years. Stock options are granted with an exercise price equal to the market price of our common stock on the date of grant, except in limited circumstances where local law may dictate otherwise.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS *(Continued)*

A summary of stock option activity for the year ended December 31, 2019 is as follows (options in thousands):

	Stock Options	Weighted Average Exercise Price	Weighted Average Remaining Contractual Life	Intrinsic Value (in millions)
Outstanding at January 1, 2019	7,763	$100.29		
Options granted	1,488	123.76		
Options exercised	(1,633)	85.97		
Options forfeited	(303)	117.28		
Options expired	(30)	115.12		
Outstanding at December 31, 2019	7,285	$107.53	6.6	$307.1
Vested or expected to vest as of December 31, 2019	7,057	$107.10	6.6	$300.5
Exercisable at December 31, 2019	3,890	$ 97.15	5.1	$204.3

We use a Black-Scholes option-pricing model to determine the fair value of our stock options. Expected volatility was derived from a combination of historical volatility and implied volatility because the options that were actively traded around the grant date of our stock options did not have maturities of over one year. The expected term of the stock options has been derived from historical employee exercise behavior. The risk-free interest rate was determined using the implied yield currently available for zero-coupon U.S. government issues with a remaining term approximating the expected life of the options. The dividend yield was determined by using an estimated annual dividend and dividing it by the market price of our stock on the grant date.

The following table presents information regarding the weighted average fair value of stock options granted, the assumptions used to determine fair value, the intrinsic value of options exercised and the tax benefit of options exercised in the indicated year:

	For the Years Ended December 31,		
	2019	2018	2017
Dividend yield	0.8%	0.8%	0.8%
Volatility	22.1%	22.1%	21.6%
Risk-free interest rate	2.4%	2.7%	2.0%
Expected life (years)	5.5	5.2	5.3
Weighted average fair value of options granted	$28.68	$26.66	$26.09
Intrinsic value of options exercised (in millions)	$ 76.8	$ 46.6	$ 67.6
Tax benefit of options exercised (in millions)	$ 15.8	$ 6.8	$ 27.7

As of December 31, 2019, there was $48.6 million of unrecognized share-based payment expense related to nonvested stock options granted under our plans. That expense is expected to be recognized over a weighted average period of 2.5 years.

RSUs

We have awarded RSUs to certain of our employees. The terms of the awards have been from five months to four years. Some of the awards have only service conditions while some have performance and market conditions in addition to service conditions. Future service conditions may be waived if an employee retires after the first anniversary date of the award, but performance and market conditions continue to apply. Accordingly, the requisite service period used for share-based payment expense on our RSUs range from five months to four years.

A summary of nonvested RSU activity for the year ended December 31, 2019 is as follows (RSUs in thousands):

	RSUs	Weighted Average Grant Date Fair Value
Outstanding at January 1, 2019	1,347	$112.81
Granted	508	132.69
Vested	(210)	108.35
Forfeited	(417)	114.61
Outstanding at December 31, 2019	1,228	118.11

For the RSUs with service conditions only, the fair value of the awards was determined based upon the fair market value of our common stock on the date of grant. For the RSUs with market conditions, a Monte Carlo valuation technique was used to simulate the market conditions of the awards. The outcome of the simulation was used to determine the fair value of the awards.

We are required to estimate the number of RSUs that will vest and recognize share-based payment expense on a straight-line basis over the requisite service period. As of December 31, 2019, we estimate that approximately 777,336 outstanding RSUs will vest. If our estimate were to change in the future, the cumulative effect of the change in estimate will be recorded in that period. Based upon the number of RSUs

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS *(Continued)*

that we expect to vest, the unrecognized share-based payment expense as of December 31, 2019 was $47.8 million and is expected to be recognized over a weighted-average period of 2.1 years. The fair value of RSUs that vested during the years ended December 31, 2019, 2018 and 2017 based upon our stock price on the date of vesting was $26.3 million, $18.7 million, and $31.2 million, respectively.

6. Inventories

Inventories consisted of the following (in millions):

	As of December 31,	
	2019	2018
Finished goods	$1,875.4	$1,797.7
Work in progress	231.0	230.4
Raw materials	278.6	228.4
Inventories	$2,385.0	$2,256.5

Amounts charged to the consolidated statements of earnings for excess and obsolete inventory, including certain product lines we intend to discontinue, in the years ended December 31, 2019, 2018 and 2017 were $221.4 million, $226.1 million and $128.4 million, respectively.

7. Property, Plant and Equipment

Property, plant and equipment consisted of the following (in millions):

	As of December 31,	
	2019	2018
Land	$ 27.6	$ 28.0
Building and equipment	2,007.0	1,885.6
Capitalized software costs	482.4	425.8
Instruments	3,250.5	2,950.5
Construction in progress	149.3	147.2
	5,916.8	5,437.1
Accumulated depreciation	(3,839.4)	(3,421.7)
Property, plant and equipment, net	$ 2,077.4	$ 2,015.4

Depreciation expense was $421.8 million, $442.6 million and $454.1 million for the years ended December 31, 2019, 2018 and 2017, respectively.

We had $39.8 million and $49.3 million of property, plant and equipment included in accounts payable as of December 31, 2019 and 2018, respectively.

8. Transfers of Financial Assets

We have receivables purchase arrangements with unrelated third parties to liquidate portions of our trade accounts receivable balance. The receivables relate to products sold to customers and are short-term in nature. The factorings were treated as sales of our accounts receivable. Proceeds from the transfers reflect either the face value of the accounts receivable or the face value less factoring fees.

In the U.S. and Japan, our programs are executed on a revolving basis with a maximum funding limit as of December 31, 2019 of $450 million combined. We act as the collection agent on behalf of the third party, but have no significant retained interests or servicing liabilities related to the accounts receivable sold. In order to mitigate credit risk, we purchased credit insurance for the factored accounts receivable. As a result, our risk of loss is limited to the factored accounts receivable not covered by the insurance. Additionally, we have provided guarantees for the factored accounts receivable. The maximum exposures to loss associated with these arrangements were $21.8 million and $33.0 million as of December 31, 2019 and 2018, respectively.

In Europe, we sell to a third party and have no continuing involvement or significant risk with the factored accounts receivable.

Funds received from the transfers are recorded as an increase to cash and a reduction of accounts receivable outstanding in the consolidated balance sheets. We report the cash flows attributable to the sale of the receivables to third parties in cash flows from operating activities in our consolidated statements of cash flows. Net expenses resulting from the sales of receivables are recognized in SG&A expense. Net expenses included any resulting gains or losses from the sales of receivables, credit insurance and factoring fees.

For the years ended December 31, 2019, 2018 and 2017, we sold receivables having an aggregate face value of $3,116.2 million, $2,706.4 million and $1,456.9 million to third parties in exchange for cash proceeds of $3,113.9 million, $2,704.9 million and $1,455.6 million, respectively. Expenses recognized on these sales during the years ended December 31, 2019, 2018 and 2017 were not significant. For the years ended December 31, 2019, 2018 and 2017 under the U.S. and Japan programs, we collected $2,857.4 million, $2,273.5 million and $1,031.2 million, respectively, from our customers and remitted that amount to the third party, and we effectively repurchased $184.6 million, $208.9 million and $96.3 million, respectively, of previously sold accounts receivable from the third party due to the programs' revolving nature. At December 31, 2019 and 2018, we had collected $54.6 million and $66.8 million, respectively, that were unremitted to the third party, which are reflected in our consolidated balance sheets under other current liabilities. The initial collection of cash from customers and its remittance to the third party is reflected in net cash provided by/(used in) financing activities in our consolidated statements of cash flows.

At December 31, 2019 and 2018, the outstanding principal amount of receivables that has been derecognized under the U.S. and Japan revolving arrangements combined amounted to $270.2 million and $365.9 million, respectively.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS *(Continued)*

9. Fair Value Measurements of Assets and Liabilities

The following financial assets and liabilities are recorded at fair value on a recurring basis (in millions):

	As of December 31, 2019			
		Fair Value Measurements at Reporting Date Using:		
Description	Recorded Balance	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Assets				
Derivatives, current and long-term				
Foreign currency forward contracts	$39.1	$ –	$39.1	$ –
Interest rate swaps	60.5	–	60.5	–
Total Assets	$99.6	$ –	$99.6	$ –
Liabilities				
Derivatives, current and long-term				
Foreign currency forward contracts	$ 0.6	$ –	$ 0.6	$ –
Total Liabilities	$ 0.6	$ –	$ 0.6	$ –

	As of December 31, 2018			
		Fair Value Measurements at Reporting Date Using:		
Description	Recorded Balance	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Assets				
Derivatives, current and long-term				
Foreign currency forward contracts	$45.7	$ –	$45.7	$ –
Interest rate swaps	17.9	–	17.9	–
Total Assets	$63.6	$ –	$63.6	$ –
Liabilities				
Derivatives, current and long-term				
Foreign currency forward contracts	$ 0.5	$ –	$ 0.5	$ –
Interest rate swaps	2.5	–	2.5	–
Total Liabilities	$ 3.0	$ –	$ 3.0	$ –

We value our foreign currency forward contracts using a market approach based on foreign currency exchange rates obtained from active markets, and we perform ongoing assessments of counterparty credit risk.

We value our interest rate swaps using a market approach based on publicly available market yield curves, foreign currency exchange rates and the terms of our swaps, and we perform ongoing assessments of counterparty credit risk.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS *(Continued)*

10. Goodwill and Other Intangible Assets

The following table summarizes the changes in the carrying amount of goodwill (in millions):

	Americas	EMEA	Asia Pacific	Immaterial Product Category Operating Segments	Total
Balance at January 1, 2018					
Goodwill	$7,724.8	$1,379.8	$500.5	$ 1,741.0	$11,346.1
Accumulated impairment losses	–	–	–	(677.7)	(677.7)
	7,724.8	1,379.8	500.5	1,063.3	10,668.4
Currency translation	(12.4)	(57.6)	6.7	(34.8)	(98.1)
Impairment	–	(567.0)	–	(408.9)	(975.9)
Balance at December 31, 2018					
Goodwill	7,712.4	1,322.2	507.2	1,706.2	11,248.0
Accumulated impairment losses	–	(567.0)	–	(1,086.6)	(1,653.6)
	7,712.4	755.2	507.2	619.6	9,594.4
Other acquisitions	–	–	–	25.0	25.0
Currency translation	(12.6)	(5.4)	0.2	(1.9)	(19.7)
Balance at December 31, 2019					
Goodwill	7,699.8	1,316.8	507.4	1,729.3	11,253.3
Accumulated impairment losses	–	(567.0)	–	(1,086.6)	(1,653.6)
	$7,699.8	$ 749.8	$507.4	$ 642.7	$ 9,599.7

We have five reporting units with goodwill assigned to them. We perform our annual test of goodwill impairment in the fourth quarter of every year. In 2019, we performed a qualitative test on our Americas and Asia Pacific reporting units and concluded it was more likely than not the fair value of these reporting units exceeded their carrying value. We estimated the fair value of our EMEA, Dental and CMF reporting units using the income and market approaches. The estimated fair value of our EMEA and Dental reporting units only exceeded their carrying values by less than 5 percent. The estimated fair value of our CMF reporting unit exceeded its carrying value by more than 25 percent.

We will continue to monitor the fair value of our EMEA and Dental reporting units as well as our other three reporting units in our interim and annual reporting periods. If our estimated cash flows for these reporting units decrease, we may have to record impairment charges in the future. Factors that could result in our cash flows being lower than our current estimates include: 1) decreased revenues caused by unforeseen changes in the healthcare market, or our inability to generate new product revenue from our research and development activities, and 2) our inability to achieve the estimated operating margins in our forecasts due to unforeseen factors. Additionally, changes in the broader economic environment could cause changes to our estimated discount rates, foreign currency exchange rates used to translate cash flows and comparable company valuation indicators, which may impact our estimated fair values.

As indicated in Note 18, our operating segments may change in 2020 which, under the applicable accounting rules, could cause us to change our reporting units to which goodwill is assigned and/or could cause the assets and related cash flows assigned to a reporting unit to change. A change in reporting units may lead us to perform interim impairment tests on the new reporting units. We may have long-lived assets that currently have a carrying value that is greater than their fair value, but are not impaired because the impairment test for long-lived assets compares the carrying value to undiscounted cash flows. If the carrying value of assets that are reallocated to a new reporting unit is greater than their estimated fair value (as measured by their discounted cash flows), we may need to record an impairment charge with respect to that reporting unit.

During the year ended December 31, 2018, we recorded goodwill impairment charges related to our Spine reporting unit, our EMEA reporting unit and an insignificant reporting unit of $401.2 million, $567.0 million and $7.7 million, respectively. During the year ended December 31, 2017, we recorded goodwill impairment charges related to our Office Based Technologies and Spine reporting units of $32.7 million and $272.0 million, respectively.

For more information on how the fair values of these reporting units were determined in the prior periods and the factors that led to impairment, please see our Annual Reports on Form 10-K for the years ended December 31, 2018 and 2017.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS *(Continued)*

The components of identifiable intangible assets were as follows (in millions):

	Technology	Intellectual Property Rights	Trademarks and Trade Names	Customer Relationships	IPR&D	Other	Total
As of December 31, 2019:							
Intangible assets subject to amortization:							
Gross carrying amount	$ 3,634.0	$ 378.3	$ 659.9	$ 5,375.0	$ –	$165.4	$10,212.6
Accumulated amortization	(1,487.6)	(191.9)	(207.6)	(1,489.4)	–	(95.3)	(3,471.8)
Intangible assets not subject to amortization:							
Gross carrying amount	–	–	454.9	–	61.9	–	516.8
Total identifiable intangible assets	$ 2,146.4	$ 186.4	$ 907.2	$ 3,885.6	$ 61.9	$ 70.1	$ 7,257.6
As of December 31, 2018:							
Intangible assets subject to amortization:							
Gross carrying amount	$ 3,638.5	$ 180.7	$ 664.2	$ 5,384.4	$ –	$128.3	$ 9,996.1
Accumulated amortization	(1,282.7)	(177.6)	(169.3)	(1,194.5)	–	(80.0)	(2,904.1)
Intangible assets not subject to amortization:							
Gross carrying amount	–	–	457.1	–	135.5	–	592.6
Total identifiable intangible assets	$ 2,355.8	$ 3.1	$ 952.0	$ 4,189.9	$135.5	$ 48.3	$ 7,684.6

In 2019, we entered into an agreement and paid $192.5 million to buy out certain licensing arrangements from an unrelated third party. This new agreement and the related payment replaced the variable royalty payments that otherwise would have been due under the terms of previous licensing arrangements through 2029. Under the new agreement, we maintain the rights to the counterparty's intellectual property provided under the previous licensing arrangements. The $192.5 million payment was recognized as an intangible asset and will be amortized through 2029, which represents the useful life of the intellectual property.

We recognized intangible asset impairment charges of $70.1 million, $3.8 million and $26.8 million in the years ended December 31, 2019, 2018 and 2017, respectively, in "Goodwill and intangible asset impairment" on our consolidated statements of earnings. The impairment charges were primarily related to the abandonment of IPR&D projects that were recognized as part of the Biomet merger purchase accounting.

Estimated annual amortization expense based upon intangible assets recognized as of December 31, 2019 for the years ending December 31, 2020 through 2024 is (in millions):

For the Years Ending December 31,	
2020	$576.9
2021	562.8
2022	556.3
2023	551.6
2024	543.4

11. Other Current Liabilities

Other current liabilities consisted of the following (in millions):

	As of December 31, 2019	2018
Other current liabilities:		
License and service agreements	$ 179.3	$ 181.8
Salaries, wages and benefits	314.1	260.3
Litigation and product liability	142.4	278.6
Accrued liabilities	778.1	670.6
Total other current liabilities	$1,413.9	$1,391.3

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS *(Continued)*

12. Debt

Our debt consisted of the following (in millions):

	As of December 31,	
	2019	2018
Current portion of long-term debt		
4.625% Senior Notes due 2019	$ –	$ 500.0
2.700% Senior Notes due 2020	1,500.0	–
U.S. Term Loan B	–	25.0
Total short-term debt	$1,500.0	$ 525.0
Long-term debt		
2.700% Senior Notes due 2020	$ –	$1,500.0
Floating Rate Notes due 2021	450.0	450.0
3.375% Senior Notes due 2021	300.0	300.0
3.150% Senior Notes due 2022	750.0	750.0
3.700% Senior Notes due 2023	300.0	300.0
3.550% Senior Notes due 2025	2,000.0	2,000.0
4.250% Senior Notes due 2035	253.4	253.4
5.750% Senior Notes due 2039	317.8	317.8
4.450% Senior Notes due 2045	395.4	395.4
1.414% Euro Notes due 2022	561.3	571.6
2.425% Euro Notes due 2026	561.3	571.6
1.164% Euro Notes due 2027	561.3	–
U.S. Term Loan B	–	200.0
U.S. Term Loan C	–	535.0
Japan Term Loan A	106.9	105.3
Japan Term Loan B	194.7	191.7
Debt discount and issuance costs	(37.1)	(42.7)
Adjustment related to interest rate swaps	6.4	14.6
Total long-term debt	$6,721.4	$8,413.7

At December 31, 2019, our total current and non-current debt of $8.2 billion consisted of $8.0 billion aggregate principal amount of senior notes, which included $1.7 billion of Euro-denominated senior notes ("Euro notes"), an 11.7 billion Japanese Yen term loan agreement ("Japan Term Loan A") and a 21.3 billion Japanese Yen term loan agreement ("Japan Term Loan B") that each will mature on September 27, 2022, and other debt and fair value adjustments totaling $6.4 million, partially offset by debt discount and issuance costs of $37.1 million.

On November 15, 2019, we completed the offering of €500 million aggregate principal amount of our 1.164% Euro notes due November 15, 2027. Interest is payable on the 1.164% Euro notes on November 15 of each year until maturity. We received net proceeds of approximately $549.2 million from this offering, which were primarily used to repay the $500 million principal amount 4.625% Senior Notes due 2019 at maturity, and the remainder of which were used to repay a portion of a U.S. term loan ("U.S. Term Loan C").

On November 1, 2019, we entered into a revolving credit agreement (the "2019 Credit Agreement"), which contains a five-year unsecured multicurrency revolving facility of $1.5 billion (the "2019 Multicurrency Revolving Facility"), which replaced the previous $1.5 billion multicurrency revolving credit facility (the "2016 Multicurrency Revolving Facility") and a U.S. term loan ("U.S. Term Loan B") under our credit agreement executed in September 2016 (as amended, the "2016 Credit Agreement"). As of the date we entered into the 2019 Credit Agreement, there were no borrowings outstanding under the 2016 Multicurrency Revolving Facility or U.S. Term Loan B. The 2019 Credit Agreement will mature on November 1, 2024, with two one-year extensions exercisable at our discretion and subject to required lender consent. As of December 31, 2019, there were no outstanding borrowings under the 2019 Multicurrency Revolving Facility.

On December 14, 2018, we entered into a credit agreement (the "2018 Credit Agreement") that provides for U.S. Term Loan C, which is a two-year unsecured multi-draw term loan facility for the Company in the principal amount of $900.0 million, with a maturity date of December 14, 2020, and borrowed $675.0 million under that facility. In January 2019, we borrowed an additional $200.0 million under U.S. Term Loan C and used those proceeds, along with cash on hand, to repay the remaining $225.0 million outstanding under U.S. Term Loan B issued under the 2016 Credit Agreement. Under the applicable accounting rules, since $200.0 million of U.S. Term Loan B was refinanced on a long-term basis before the issuance of our consolidated financial statements, we classified the refinanced portion of U.S. Term Loan B as long-term as of December 31, 2018.

We have repaid $735.0 million and $140.0 million in principal under U.S. Term Loan C during the years ended December 31, 2019 and 2018, respectively, primarily with cash from operations. As of December 31, 2019, we had no borrowings outstanding under U.S. Term Loan C, and since there are no more advances available under the 2018 Credit Agreement, the 2018 Credit Agreement and U.S. Term Loan C have terminated by their terms.

On March 19, 2018, we completed the offering of $450.0 million aggregate principal amount of our floating rate senior notes due March 19, 2021 and $300.0 million aggregate principal amount of our 3.700% senior notes due March 19, 2023. Interest on the floating rate senior notes is equal to three-month LIBOR plus 0.750% and is payable quarterly, commencing on June 19, 2018, until maturity. Interest is payable on the 3.700% senior notes semi-annually, commencing on September 19, 2018, until maturity. We received net proceeds of $749.5 million from this offering.

On September 22, 2017, we entered into a term loan agreement for the Japan Term Loan B, and an amended and restated term loan agreement, which amended and restated the Japan Term Loan A loan agreement dated as of May 24, 2012, as amended as of October 31, 2014. As described above, the term loans under both of these agreements will mature on September 27, 2022. Each of these term loans bears interest at a fixed rate of 0.635 percent per annum.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS *(Continued)*

Borrowings under the 2019 Credit Agreement generally bear interest at floating rates. We pay a facility fee on the aggregate amount of the 2019 Multicurrency Revolving Facility. The 2019 Credit Agreement contains customary affirmative and negative covenants and events of default for unsecured financing arrangements, including among other things limitations on consolidations, mergers, and sales of assets. We were in compliance with all covenants under the 2019 Credit Agreement as of December 31, 2019.

We may, at our option, redeem our senior notes, in whole or in part, at any time upon payment of the principal, any applicable make-whole premium, and accrued and unpaid interest to the date of redemption, except that the Floating Rate Notes due 2021 do not have any applicable make-whole premium. In addition, we may redeem, at our option, the 3.375% Senior Notes due 2021, the 3.150% Senior Notes due 2022, the 1.414% Euro notes due 2022, the 3.700% Senior Notes due 2023, the 3.550% Senior Notes due 2025, the 2.425% Euro notes due 2026, the 1.164% Euro notes due 2027, the 4.250% Senior Notes due 2035 and the 4.450% Senior Notes due 2045 without any make-whole premium at specified dates ranging from one month to six months in advance of the scheduled maturity date.

The estimated fair value of our senior notes as of December 31, 2019, based on quoted prices for the specific securities from transactions in over-the-counter markets (Level 2), was $8,261.2 million. The estimated fair value of Japan Term Loan A and Japan Term Loan B, in the aggregate, as of December 31, 2019, based upon publicly available market yield curves and the terms of the debt (Level 2), was $300.1 million.

We entered into interest rate swap agreements which we designated as fair value hedges of underlying fixed-rate obligations on our senior notes due 2019 and 2021. These fair value hedges were settled in 2016. In 2016, we entered into various variable-to-fixed interest rate swap agreements that were accounted for as cash flow hedges of U.S. Term Loan B. These interest rate swaps were terminated concurrently with the repayment of the remaining balance of U.S. Term Loan B in 2019. In 2018 and 2019, we entered into cross-currency interest rate swaps that we designated as net investment hedges. The excluded component of these net investment hedges is recorded in interest expense, net. See Note 14 for additional information regarding our interest rate swap agreements.

We also have available uncommitted credit facilities totaling $45.3 million as of December 31, 2019.

At December 31, 2019 and 2018, the weighted average interest rate for our borrowings was 2.9 percent and 3.1 percent, respectively. We paid $226.9 million, $282.8 million, and $317.5 million in interest during 2019, 2018, and 2017, respectively.

13. Accumulated Other Comprehensive Income

AOCI refers to certain gains and losses that under GAAP are included in comprehensive income but are excluded from net earnings as these amounts are initially recorded as an adjustment to stockholders' equity. Amounts in AOCI may be reclassified to net earnings upon the occurrence of certain events.

Our AOCI is comprised of foreign currency translation adjustments, unrealized gains and losses on cash flow hedges, and amortization of prior service costs and unrecognized gains and losses in actuarial assumptions on our defined benefit plans. Foreign currency translation adjustments are reclassified to net earnings upon sale or upon a complete or substantially complete liquidation of an investment in a foreign entity. Unrealized gains and losses on cash flow hedges are reclassified to net earnings when the hedged item affects net earnings. Amounts related to defined benefit plans that are in AOCI are reclassified over the service periods of employees in the plan. See Note 15 for more information on our defined benefit plans.

The following table shows the changes in the components of AOCI, net of tax (in millions):

	Foreign Currency Translation	Cash Flow Hedges	Defined Benefit Plan Items	Total AOCI
Balance December 31, 2018	$(31.3)	$ 20.9	$(177.0)	$(187.4)
AOCI before reclassifications	(1.5)	30.6	(53.5)	(24.4)
Reclassifications to statements of earnings	–	(35.1)	5.0	(30.1)
Balance December 31, 2019	$(32.8)	$ 16.4	$(225.5)	$(241.9)

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS *(Continued)*

The following table shows the reclassification adjustments from AOCI (in millions):

	Amount of Gain / (Loss) Reclassified from AOCI			
	For the Years Ended December 31,			
Component of AOCI	2019	2018	2017	Location on Statements of Earnings
Cash flow hedges				
Foreign exchange forward contracts	$ 38.4	$(26.2)	$ 5.1	Cost of products sold
Interest rate swaps	2.8	–	–	Interest expense, net
Forward starting interest rate swaps	(0.6)	(0.6)	(0.5)	Interest expense, net
	40.6	(26.8)	4.6	Total before tax
	5.5	(3.2)	0.8	(Benefit) provision for income taxes
	$ 35.1	$(23.6)	$ 3.8	Net of tax
Defined benefit plans				
Prior service cost	$ 7.3	$ 9.9	$ 10.3	Other expense, net
Curtailment gain	7.2	–	–	Other expense, net
Unrecognized actuarial loss	(21.8)	(26.2)	(22.1)	Other expense, net
	(7.3)	(16.3)	(11.8)	Total before tax
	(2.3)	(4.3)	(4.5)	(Benefit) provision for income taxes
	$ (5.0)	$(12.0)	$ (7.3)	Net of tax
Total reclassifications	$ 30.1	$(35.6)	$ (3.5)	Net of tax

The following table shows the tax effects on each component of AOCI recognized in our consolidated statements of comprehensive income (loss) (in millions):

	For the Years Ended December 31,								
	Before Tax			Tax			Net of Tax		
	2019	2018	2017	2019	2018	2017	2019	2018	2017
Foreign currency cumulative translation adjustments	$ 12.1	$(148.7)	$ 396.8	$13.6	$(13.3)	$(48.2)	$ (1.5)	$(135.4)	$445.0
Unrealized cash flow hedge gains (losses)	34.6	81.1	(116.0)	4.0	12.9	(21.0)	30.6	68.2	(95.0)
Reclassification adjustments on cash flow hedges	(40.6)	26.8	(4.6)	(5.5)	3.2	(0.8)	(35.1)	23.6	(3.8)
Adjustments to prior service cost and unrecognized actuarial assumptions	(56.4)	(22.7)	6.6	(7.9)	(5.0)	2.0	(48.5)	(17.7)	4.6
Total Other Comprehensive (Loss) Income	$(50.3)	$ (63.5)	$ 282.8	$ 4.2	$ (2.2)	$(68.0)	$(54.5)	$ (61.3)	$350.8

14. Derivative Instruments and Hedging Activities

We are exposed to certain market risks relating to our ongoing business operations, including foreign currency exchange rate risk, commodity price risk, interest rate risk and credit risk. We manage our exposure to these and other market risks through regular operating and financing activities. Currently, the only risks that we manage through the use of derivative instruments are interest rate risk and foreign currency exchange rate risk.

Interest Rate Risk

Derivatives Designated as Fair Value Hedges

In prior years, we entered into various fixed-to-variable interest rate swap agreements that were accounted for as fair value hedges of a portion of our 4.625% Senior Notes due in 2019 and all of our 3.375% Senior Notes due 2021. In August 2016, we received cash for these interest rate swap assets by terminating the hedging instruments with the counterparties. The 4.625% Senior Notes were repaid at maturity in 2019. The remaining unamortized balance related to the 3.375% Senior Notes as of December 31, 2019 was $6.4 million, which will be recognized using the effective interest rate method over the remaining maturity period of the 3.375% Senior Notes. As of December 31, 2019 and 2018, the following amounts were recorded on our consolidated balance sheets related to cumulative basis adjustments for fair value hedges (in millions):

	Carrying Amount of the Hedged Liabilities		Cumulative Amount of Fair Value Hedging Adjustment Included in the Carrying Amount of the Hedged Liabilities	
Balance Sheet Line Item	December 31, 2019	December 31, 2018	December 31, 2019	December 31, 2018
Long-term debt	$306.2	$564.4	$6.4	$14.6

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS *(Continued)*

Derivatives Designated as Cash Flow Hedges

In 2014, we entered into forward starting interest rate swaps that were designated as cash flow hedges of our thirty-year tranche of senior notes (the 4.450% Senior Notes due 2045) we expected to issue in 2015. The forward starting interest rate swaps mitigated the risk of changes in interest rates prior to the completion of the notes offering. The interest rate swaps were settled, and the remaining loss to be recognized at December 31, 2019 was $26.5 million, which will be recognized using the effective interest rate method over the remaining maturity period of the hedged notes.

In September 2016, we entered into various variable-to-fixed interest rate swap agreements with a notional amount of $375 million that were accounted for as cash flow hedges of U.S. Term Loan B. The interest rate swaps minimized the exposure to changes in the LIBOR interest rates while the variable-rate debt was outstanding. In the first quarter of 2019, we terminated these interest rate swaps concurrently with the repayment of the remaining balance of U.S Term Loan B, and we recognized proceeds and interest income of $2.8 million related to the termination.

Foreign Currency Exchange Rate Risk

We operate on a global basis and are exposed to the risk that our financial condition, results of operations and cash flows could be adversely affected by changes in foreign currency exchange rates. To reduce the potential effects of foreign currency exchange rate movements on net earnings, we enter into derivative financial instruments in the form of foreign currency exchange forward contracts with major financial institutions. We also designated our Euro notes and other foreign currency exchange forward contracts as net investment hedges of investments in foreign subsidiaries. We are primarily exposed to foreign currency exchange rate risk with respect to transactions and net assets denominated in Euros, Swiss Francs, Japanese Yen, British Pounds, Canadian Dollars, Australian Dollars, Korean Won, Swedish Krona, Czech Koruna, Thai Baht, Taiwan Dollars, South African Rand, Russian Rubles, Indian Rupees, Turkish Lira, Polish Zloty, Danish Krone, and Norwegian Krone. We do not use derivative financial instruments for trading or speculative purposes.

Derivatives Designated as Net Investment Hedges

We are exposed to the impact of foreign exchange rate fluctuations in the investments in our wholly-owned foreign subsidiaries that are denominated in currencies other than the U.S. Dollar. In order to mitigate the volatility in foreign exchange rates, we issued Euro notes in December 2016 and November 2019, as discussed in Note 12, and designated 100 percent of the Euro notes to hedge our net investment in certain wholly-owned foreign subsidiaries that have a functional currency of Euro. All changes in the fair value of the hedging instrument designated as a net investment hedge are recorded as a component of AOCI in our consolidated balance sheets.

At December 31, 2019, we had receive-fixed-rate, pay-fixed-rate cross-currency interest rate swaps with notional amounts outstanding of Euro 1,450 million, Japanese Yen 7 billion and Swiss Franc 50 million. These transactions further hedge our net investment in certain wholly-owned foreign subsidiaries that have a functional currency of Euro, Japanese Yen and Swiss Franc. All changes in the fair value of a derivative instrument designated as a net investment hedge are recorded as a component of AOCI in the consolidated balance sheets. The portion of this change related to the excluded component will be amortized into earnings over the life of the derivative while the remainder will be recorded in AOCI until the hedged net investment is sold or substantially eliminated. We recognize the excluded component in interest expense, net on our consolidated statements of earnings. The net cash received related to the receive-fixed-rate, pay-fixed-rate component of the cross-currency interest rate swaps is reflected in investing cash flows in our consolidated statements of cash flows.

Derivatives Designated as Cash Flow Hedges

Our revenues are generated in various currencies throughout the world. However, a significant amount of our inventory is produced in U.S. Dollars. Therefore, movements in foreign currency exchange rates may have different proportional effects on our revenues compared to our cost of products sold. To minimize the effects of foreign currency exchange rate movements on cash flows, we hedge intercompany sales of inventory expected to occur within the next 30 months with foreign currency exchange forward contracts. We designate these derivative instruments as cash flow hedges.

We perform quarterly assessments of hedge effectiveness by verifying and documenting the critical terms of the hedge instrument and confirming that forecasted transactions have not changed significantly. We also assess on a quarterly basis whether there have been adverse developments regarding the risk of a counterparty default. For derivatives which qualify as hedges of future cash flows, the gains and losses are temporarily recorded in AOCI and then recognized in cost of products sold when the hedged item affects net earnings. On our consolidated statements of cash flows, the settlements of these cash flow hedges are recognized in operating cash flows.

For foreign currency exchange forward contracts outstanding at December 31, 2019, we had obligations to purchase U.S. Dollars and sell Euros, Japanese Yen, British Pounds, Canadian Dollars, Australian Dollars, Korean Won, Swedish Krona, Czech Koruna, Thai Baht, Taiwan Dollars, South African Rand, Russian Rubles, Indian Rupees, Polish Zloty, Danish Krone, and Norwegian Krone and obligations to purchase Swiss Francs and sell U.S. Dollars. These derivatives mature at dates ranging from January 2020 through June 2022.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS *(Continued)*

As of December 31, 2019, the notional amounts of outstanding forward contracts entered into with third parties to purchase U.S. Dollars were $1,496.3 million. As of December 31, 2019, the notional amounts of outstanding forward contracts entered into with third parties to purchase Swiss Francs were $276.0 million.

Derivatives Not Designated as Hedging Instruments

We enter into foreign currency forward exchange contracts with terms of one month to manage currency exposures for monetary assets and liabilities denominated in a currency other than an entity's functional currency. As a result, any foreign currency re-measurement gains/losses recognized in earnings are generally offset with gains/losses on the foreign currency forward exchange contracts in the same reporting period. The net amount of these offsetting gains/losses is recorded in other expense, net. These contracts are settled on the last day of each reporting period. Therefore, there is no outstanding balance related to these contracts recorded on the balance sheet as of the end of the reporting period. The notional amounts of these contracts are typically in a range of $1.5 billion to $2.0 billion per quarter.

Income Statement Presentation

Derivatives Designated as Cash Flow Hedges

Derivative instruments designated as cash flow hedges had the following effects, before taxes, on AOCI and net earnings on our consolidated statements of earnings, consolidated statements of comprehensive income (loss) and consolidated balance sheets (in millions):

	Amount of Gain / (Loss) Recognized in AOCI				Amount of Gain / (Loss) Reclassified from AOCI		
	Years Ended December 31,				Years Ended December 31,		
Derivative Instrument	2019	2018	2017	Location on Statement of Earnings	2019	2018	2017
Foreign exchange forward contracts	$34.6	$82.8	$(116.5)	Cost of products sold	$38.4	$(26.2)	$ 5.1
Interest rate swaps	–	(1.7)	0.5	Interest expense, net	2.8	–	–
Forward starting interest rate swaps	–	–	–	Interest expense, net	(0.6)	(0.6)	(0.5)
	$34.6	$81.1	$(116.0)		$40.6	$(26.8)	$ 4.6

The fair value of outstanding derivative instruments designated as cash flow hedges and recorded on the consolidated balance sheet at December 31, 2019, together with settled derivatives where the hedged item has not yet affected earnings, was a net unrealized gain of $17.4 million, or $16.4 million after taxes, which is deferred in AOCI. A gain of $38.4 million, or $33.1 million after taxes, is expected to be reclassified to earnings in cost of products sold and a loss of $0.6 million, or $0.5 million after taxes, is expected to be reclassified to earnings in interest expense, net over the next twelve months.

The following table presents the effects of fair value, cash flow and net investment hedge accounting on our consolidated statements of earnings (in millions):

	Location and Amount of Gain/(Loss) Recognized in Income on Fair Value, Cash Flow and Net Investment Hedging Relationships Years Ended December 31,					
	2019		2018		2017	
	Cost of Products Sold	Interest Expense, Net	Cost of Products Sold	Interest Expense, Net	Cost of Products Sold	Interest Expense, Net
Total amounts of income and expense line items presented in the statements of earnings in which the effects of fair value, cash flow and net investment hedges are recorded	$2,252.6	$(226.9)	$2,271.9	$(289.3)	$2,132.9	$(325.3)
The effects of fair value, cash flow and net investment hedging:						
Gain on fair value hedging relationships						
Discontinued interest rate swaps	–	8.2	–	8.5	–	8.3
Gain (loss) on cash flow hedging relationships						
Forward starting interest rate swaps	–	(0.6)	–	(0.6)	–	(0.5)
Interest rate swaps	–	2.8	–	–	–	–
Foreign exchange forward contracts	38.4	–	(26.2)	–	5.1	–
Gain on net investment hedging relationships						
Cross-currency interest rate swaps	–	52.2	–	25.5	–	–

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS *(Continued)*

Derivatives Not Designated as Hedging Instruments

The following gains/(losses) from these derivative instruments were recognized on our consolidated statements of earnings (in millions):

		Years Ended December 31,		
Derivative Instrument	Location on Statements of Earnings	2019	2018	2017
Foreign exchange forward contracts	Other expense, net	$(11.0)	$24.7	$(62.3)

These gains/(losses) do not reflect losses of $3.4 million and $41.2 million in 2019 and 2018, respectively, and gains of $45.5 million in 2017 recognized in other expense, net as a result of foreign currency re-measurement of monetary assets and liabilities denominated in a currency other than an entity's functional currency.

Balance Sheet Presentation

As of December 31, 2019 and 2018, all derivative instruments designated as fair value hedges and cash flow hedges are recorded at fair value on our consolidated balance sheets. On our consolidated balance sheets, we recognize individual forward contracts with the same counterparty on a net asset/liability basis if we have a master netting agreement with the counterparty. Under these master netting agreements, we are able to settle derivative instrument assets and liabilities with the same counterparty in a single transaction, instead of settling each derivative instrument separately. We have master netting agreements with all of our counterparties.

The fair value of derivative instruments on a gross basis is as follows (in millions):

	As of December 31, 2019		As of December 31, 2018	
	Balance Sheet Location	Fair Value	Balance Sheet Location	Fair Value
Asset Derivatives				
Foreign exchange forward contracts	Other current assets	$ 41.8	Other current assets	$37.9
Foreign exchange forward contracts	Other assets	9.8	Other assets	20.9
Interest rate swaps	Other assets	–	Other assets	2.8
Cross-currency interest rate swaps	Other assets	60.5	Other assets	15.1
Total asset derivatives		$112.1		$76.7
Liability Derivatives				
Foreign exchange forward contracts	Other current liabilities	$ 7.9	Other current liabilities	$ 9.9
Foreign exchange forward contracts	Other long-term liabilities	5.2	Other long-term liabilities	3.7
Cross-currency interest rate swaps	Other long-term liabilities	–	Other long-term liabilities	2.5
Total liability derivatives		$ 13.1		$16.1

The table below presents the effects of our master netting agreements on our consolidated balance sheets (in millions):

		As of December 31, 2019			As of December 31, 2018		
Description	Location	Gross Amount	Offset	Net Amount in Balance Sheet	Gross Amount	Offset	Net Amount in Balance Sheet
Asset Derivatives							
Cash flow hedges	Other current assets	$41.8	$7.9	$33.9	$37.9	$9.6	$28.3
Cash flow hedges	Other assets	9.8	4.6	5.2	20.9	3.5	17.4
Liability Derivatives							
Cash flow hedges	Other current liabilities	7.9	7.9	–	9.9	9.6	0.3
Cash flow hedges	Other long-term liabilities	5.2	4.6	0.6	3.7	3.5	0.2

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS *(Continued)*

The following net investment hedge gains (losses) were recognized on our consolidated statements of comprehensive income (loss) (in millions):

	Amount of Gain / (Loss) Recognized in AOCI		
	Years Ended December 31,		
Derivative Instrument	2019	2018	2017
Euro Notes	$10.7	$ 57.6	$(146.0)
Cross-currency interest rate swaps	47.9	62.8	–
	$58.6	$120.4	$(146.0)

15. Retirement Benefit Plans

We have defined benefit pension plans covering certain U.S. and Puerto Rico employees. Plan benefits are primarily based on years of credited service and the participant's average eligible compensation. The U.S. and Puerto Rico plans are frozen; meaning there are no new participants that can join the plan and participants in the plan do not accrue additional years of service or compensation. In addition to the U.S. and Puerto Rico defined benefit pension plans, we sponsor various foreign pension arrangements, including retirement and termination benefit plans required by local law or coordinated with government sponsored plans.

We use a December 31 measurement date for our benefit plans.

Defined Benefit Plans

The components of net pension expense for our defined benefit retirement plans were as follows (in millions):

	For the Years Ended December 31,					
	U.S. and Puerto Rico			Foreign		
	2019	2018	2017	2019	2018	2017
Service cost	$ 7.1	$ 8.0	$ 8.7	$ 19.0	$ 20.0	$ 17.7
Interest cost	16.2	14.2	14.0	9.0	8.1	8.4
Expected return on plan assets	(32.4)	(32.9)	(32.4)	(13.4)	(14.0)	(12.2)
Curtailment gain	(7.2)	–	–	–	–	–
Settlements	0.8	1.2	0.4	–	0.2	1.1
Amortization of prior service cost	(3.4)	(5.7)	(5.9)	(3.9)	(4.2)	(4.4)
Amortization of unrecognized actuarial loss	19.3	23.7	17.9	2.5	2.5	4.2
Net periodic benefit cost	$ 0.4	$ 8.5	$ 2.7	$ 13.2	$ 12.6	$ 14.8

In our consolidated statements of earnings, service cost is reported in the same location as other compensation costs arising from services rendered by the pertinent employees while the other components of net pension expense are reported in other expense, net.

The weighted average actuarial assumptions used to determine net pension expense for our defined benefit retirement plans were as follows:

	For the Years Ended December 31,					
	U.S. and Puerto Rico			Foreign		
	2019	2018	2017	2019	2018	2017
Discount rate	4.38%	3.79%	4.33%	1.44%	1.18%	1.38%
Rate of compensation increase	3.29%	3.29%	3.29%	2.50%	2.09%	2.20%
Expected long-term rate of return on plan assets	7.75%	7.75%	7.75%	2.14%	2.19%	2.30%

The expected long-term rate of return on plan assets is based on the historical and estimated future rates of return on the different asset classes held in the plans. The expected long-term rate of return is the weighted average of the target asset allocation of each individual asset class. We believe that historical asset results approximate expected market returns applicable to the funding of a long-term benefit obligation.

Discount rates were determined for each of our defined benefit retirement plans at their measurement date to reflect the yield of a portfolio of high quality bonds matched against the timing and amounts of projected future benefit payments.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS *(Continued)*

Changes in projected benefit obligations and plan assets were (in millions):

	For the Years Ended December 31,			
	U.S. and Puerto Rico		Foreign	
	2019	2018	2019	2018
Projected benefit obligation – beginning of year	$396.0	$420.7	$631.1	$623.6
Service cost	7.1	8.0	19.0	20.0
Interest cost	16.2	14.2	9.0	8.1
Plan amendments	3.6	–	–	2.2
Employee contributions	–	–	20.6	18.1
Benefits paid	(16.9)	(20.3)	(36.5)	(36.9)
Actuarial loss (gain)	68.2	(21.1)	77.8	6.0
Expenses paid	–	–	(0.3)	(0.3)
Settlement	(2.2)	(5.5)	–	–
Translation gain (loss)	–	–	19.7	(9.7)
Projected benefit obligation – end of year	$472.0	$396.0	$740.4	$631.1

	For the Years Ended December 31,			
	U.S. and Puerto Rico		Foreign	
	2019	2018	2019	2018
Plan assets at fair market value – beginning of year	$388.5	$433.6	$585.8	$574.9
Actual return on plan assets	73.5	(25.7)	57.8	7.5
Employer contributions	2.0	6.4	20.1	31.7
Employee contributions	–	–	20.6	18.1
Settlements	(2.2)	(5.5)	–	–
Benefits paid	(16.9)	(20.3)	(36.5)	(36.9)
Expenses paid	–	–	(0.3)	(0.3)
Translation gain (loss)	–	–	17.7	(9.2)
Plan assets at fair market value – end of year	$444.9	$388.5	$665.2	$585.8
Funded status	$(27.1)	$ (7.5)	$(75.2)	$(45.3)

	For the Years Ended December 31,			
	U.S. and Puerto Rico		Foreign	
	2019	2018	2019	2018
Amounts recognized in consolidated balance sheet:				
Prepaid pension	$ –	$ –	$ 17.6	$ 15.3
Short-term accrued benefit liability	(0.2)	(0.2)	(1.1)	(0.8)
Long-term accrued benefit liability	(26.9)	(7.3)	(91.7)	(59.8)
Net amount recognized	$(27.1)	$(7.5)	$(75.2)	$(45.3)

We estimate the following amounts recorded as part of AOCI will be recognized as part of our net pension expense during 2020 (in millions):

	U.S. and Puerto Rico	Foreign
Unrecognized prior service cost	$0.3	$(4.2)
Unrecognized actuarial loss	6.7	4.0
	$7.0	$(0.2)

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS *(Continued)*

The weighted average actuarial assumptions used to determine the projected benefit obligation for our defined benefit retirement plans were as follows:

	For the Years Ended December 31,					
	U.S. and Puerto Rico			Foreign		
	2019	2018	2017	2019	2018	2017
Discount rate	3.40%	4.38%	3.78%	0.74%	1.41%	1.27%
Rate of compensation increase	3.29%	3.29%	3.29%	2.45%	2.13%	2.19%

Plans with projected benefit obligations in excess of plan assets were as follows (in millions):

	As of December 31,			
	U.S. and Puerto Rico		Foreign	
	2019	2018	2019	2018
Projected benefit obligation	$472.0	$396.0	$698.2	$451.4
Plan assets at fair market value	444.9	388.5	619.1	394.4

Total accumulated benefit obligations and plans with accumulated benefit obligations in excess of plan assets were as follows (in millions):

	As of December 31,			
	U.S. and Puerto Rico		Foreign	
	2019	2018	2019	2018
Total accumulated benefit obligations	$472.0	$392.0	$721.5	$618.0
Plans with accumulated benefit obligations in excess of plan assets:				
Accumulated benefit obligation	472.0	47.1	674.0	434.8
Plan assets at fair market value	444.9	41.6	612.9	388.8

The benefits expected to be paid out in each of the next five years and for the five years combined thereafter are as follows (in millions):

For the Years Ending December 31,	U.S. and Puerto Rico	Foreign
2020	$ 20.2	$ 27.5
2021	21.5	29.7
2022	22.4	28.3
2023	23.4	29.5
2024	23.8	29.6
2025-2029	126.1	158.9

The U.S. and Puerto Rico defined benefit retirement plans' overall investment strategy is to balance total returns by emphasizing long-term growth of capital while mitigating risk. We have established target ranges of assets held by the plans of 30 to 65 percent for equity securities, 30 to 50 percent for debt securities and 0 to 15 percent in non-traditional investments. The plans strive to have sufficiently diversified assets so that adverse or unexpected results from one asset class will not have an unduly detrimental impact on the entire portfolio. We regularly review the investments in the plans and we may rebalance them from time-to-time based upon the target asset allocation of the plans.

For the U.S. and Puerto Rico plans, we maintain an investment policy statement that guides the investment allocation in the plans. The investment policy statement describes the target asset allocation positions described above. Our benefits committee, along with our investment advisor, monitor compliance with and administer the investment policy statement and the plans' assets and oversee the general investment strategy and objectives of the plans. Our benefits committee generally meets quarterly to review performance.

The investment strategies of foreign based plans vary according to the plan provisions and local laws. The majority of the assets in foreign based plans are located in Switzerland-based plans. These assets are held in trusts and are commingled with the assets of other Swiss companies with representatives of all the companies making the investment decisions. The overall strategy is to maximize total returns while avoiding risk. The trustees of the assets have established target ranges of assets held by the plans of 30 to 50 percent in debt securities, 20 to 37 percent in equity securities, 15 to 24 percent in real estate, 3 to 15 percent in cash funds and 0 to 12 percent in other funds.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS *(Continued)*

The fair value of our U.S. and Puerto Rico pension plan assets by asset category was as follows (in millions):

	As of December 31, 2019			
		Fair Value Measurements at Reporting Date Using:		
Asset Category	Total	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Cash and cash equivalents	$ 4.7	$4.7	$ –	$ –
Equity securities	282.5	–	282.5	–
Intermediate fixed income securities	157.7	–	157.7	–
Total	$444.9	$4.7	$440.2	$ –

	As of December 31, 2018			
		Fair Value Measurements at Reporting Date Using:		
Asset Category	Total	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Cash and cash equivalents	$ 3.1	$3.1	$ –	$ –
Equity securities	231.7	–	231.7	–
Intermediate fixed income securities	153.7	–	153.7	–
Total	$388.5	$3.1	$385.4	$ –

The fair value of our foreign pension plan assets was as follows (in millions):

	As of December 31, 2019			
		Fair Value Measurements at Reporting Date Using:		
Asset Category	Total	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Cash and cash equivalents	$ 31.8	$ 31.8	$ –	$ –
Equity securities	140.9	116.0	24.9	–
Fixed income securities	245.2	–	245.2	–
Other types of investments	123.6	–	123.6	–
Real estate	123.7	–	–	123.7
Total	$665.2	$147.8	$393.7	$123.7

	As of December 31, 2018			
		Fair Value Measurements at Reporting Date Using:		
Asset Category	Total	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Cash and cash equivalents	$ 14.6	$ 14.6	$ –	$ –
Equity securities	138.6	109.3	29.3	–
Fixed income securities	226.9	–	226.9	–
Other types of investments	96.8	–	96.8	–
Real estate	108.9	–	–	108.9
Total	$585.8	$123.9	$353.0	$108.9

As of December 31, 2019 and 2018, our defined benefit pension plans' assets did not hold any direct investment in Zimmer Biomet Holdings common stock.

Equity securities are valued using a market approach, based on quoted prices for the specific security from transactions in active exchange markets (Level 1), or in some cases where we are invested in mutual or collective funds, based upon the net asset value per unit of the fund which is determined from quoted market prices of the underlying securities in the fund's portfolio (Level 2). Fixed income securities are valued using a market approach, based upon quoted prices for the specific security or from institutional bid evaluations. Real estate is valued by discounting to present value the cash flows expected to be generated by the specific properties.

The following table provides a reconciliation of the beginning and ending balances of our foreign pension plan assets measured at fair value that used significant unobservable inputs (Level 3) (in millions):

	December 31, 2019
Beginning Balance	$108.9
Gain on assets sold	0.2
Change in fair value of assets	6.9
Net purchases and sales	4.8
Translation gain	2.9
Ending Balance	$123.7

We expect that we will have minimal legally required funding requirements in 2020 for the qualified U.S. and Puerto Rico defined benefit retirement plans, and we do not expect to voluntarily contribute to these plans during 2020. Contributions to foreign defined benefit plans are estimated to be $19.6 million in 2020. We do not expect the assets in any of our plans to be returned to us in the next year.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS *(Continued)*

Defined Contribution Plans

We also sponsor defined contribution plans for substantially all of the U.S. and Puerto Rico employees and certain employees in other countries.

The benefits offered under these plans are reflective of local customs and practices in the countries concerned. We expensed $52.6 million, $48.9 million and $47.9 million related to these plans for the years ended December 31, 2019, 2018 and 2017, respectively.

16. Income Taxes

A public referendum held in Switzerland passed the Federal Act on Tax Reform and AHV Financing ("TRAF"), effective January 1, 2020 and includes the abolishment of various favorable federal and cantonal tax regimes. Swiss Tax Reform provides transitional relief measures for companies that are losing the tax benefit of a ruling, including a "step-up" for amortizable goodwill, equal to the amount of future tax benefit they would have received under their existing ruling, subject to certain limitations. Certain provisions of the TRAF were enacted in the third quarter of 2019, resulting in us recognizing a provisional net tax benefit of $263.8 million. In the fourth quarter of 2019, we recognized an additional $51.2 million related to TRAF as well as the tax impact of certain restructuring transactions in Switzerland.

The 2017 Tax Act was enacted on December 22, 2017 and contained several key provisions including, among other things:

- a one-time tax on the mandatory deemed repatriation of post-1986 untaxed foreign earnings and profits ("E&P"), referred to as the toll charge;
- a reduction in the corporate income tax rate from 35 percent to 21 percent for tax years beginning after December 31, 2017;
- the introduction of a new U.S. tax on certain off-shore earnings referred to as global intangible low-taxed income ("GILTI") at an effective tax rate of 10.5 percent for tax years beginning after December 31, 2017 (increasing to 13.125 percent for tax years beginning after December 31, 2025), with a partial offset by foreign tax credits; and
- the introduction of a territorial tax system beginning in 2018 by providing a 100 percent dividend received deduction on certain qualified dividends from foreign subsidiaries.

In March 2018, the FASB issued ASU 2018-05, "Income Taxes – Amendments to SEC Paragraphs Pursuant to SEC Staff Accounting Bulletin No. 118." The guidance provided for a provisional one-year measurement period for entities to finalize their accounting for certain tax effects related to the 2017 Tax Act. In 2017, we recorded a $1,272.4 million income tax benefit related to provisional amounts for which the accounting had not been finalized. In 2018, we completed our calculation of the post-1986 E&P and related foreign taxes of our foreign subsidiaries, as well as the classification of the E&P as cash or non-cash and the finalization of all provisional items. Based on the completed calculations related to the effects of the 2017 Tax Act, and consideration of proposed regulations and other guidance issued during 2018, we recorded additional income tax expense of $8.3 million. The additional $8.3 million of tax expense consists of an adjustment to the toll charge or transition tax provision of $11.3 million and a benefit of $3.0 million related to the remeasurement of our deferred tax assets and liabilities.

The 2017 Tax Act created a provision known as GILTI that imposes a U.S. tax on certain earnings of foreign subsidiaries that are subject to foreign tax below a certain threshold. The Company has made an accounting policy election to reflect GILTI taxes, if any, as a current income tax expense in the period incurred.

The components of earnings (loss) before income taxes consisted of the following (in millions):

	For the Years Ended December 31,		
	2019	2018	2017
United States operations	$ (125.9)	$(382.8)	$(114.0)
Foreign operations	1,031.7	111.7	578.6
Total	$ 905.8	$(271.1)	$ 464.6

The (benefit)/provision for income taxes and the income taxes paid consisted of the following (in millions):

Current:			
Federal	$ 65.5	$(46.2)	$ 438.5
State	9.8	24.4	2.4
Foreign	237.7	116.6	(13.7)
	313.0	94.8	427.2
Deferred:			
Federal	(90.2)	37.9	(1,728.5)
State	(4.2)	(8.8)	(95.5)
Foreign	(444.3)	(15.7)	48.0
	(538.7)	13.4	(1,776.0)
(Benefit) provision for income taxes	$(225.7)	$108.2	$(1,348.8)
Net income taxes paid	$ 192.5	$237.1	$ 266.9

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS *(Continued)*

A reconciliation of the U.S. statutory income tax rate to our effective tax rate is as follows:

	For the Years Ended December 31,		
	2019	2018	2017
U.S. statutory income tax rate	21.0%	21.0%	35.0%
State taxes, net of federal deduction	0.8	(2.5)	1.8
Tax impact of foreign operations, including U.S. taxes on international income and foreign tax credits	(10.2)	54.3	(32.0)
Change in valuation allowance	1.5	(4.9)	0.8
Non-deductible expenses	0.4	1.7	2.7
Goodwill impairment	–	(75.2)	22.5
Tax rate change	0.6	(12.2)	(24.0)
Tax benefit relating to foreign derived intangible income and U.S. manufacturer's deduction	(4.5)	(0.2)	(1.7)
R&D tax credit	(1.2)	6.0	(1.2)
Share-based compensation	(0.4)	0.1	(2.6)
Net uncertain tax positions, including interest and penalties	1.9	(25.5)	(17.0)
U.S. tax reform	0.1	(3.1)	(273.8)
Switzerland tax reform and certain restructuring transactions	(34.8)	–	–
Other	(0.1)	0.6	(0.8)
Effective income tax rate	(24.9)%	(39.9)%	(290.3)%

Our operations in Puerto Rico benefit from various tax incentive grants. These grants expire between fiscal years 2026 and 2029.

Deferred income taxes reflect the net tax effects of temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for income tax purposes. Valuation allowances are recorded to reduce deferred income tax assets when it is more likely than not that an income tax benefit will not be realized.

The components of deferred taxes consisted of the following (in millions):

	As of December 31,	
	2019	2018
Deferred tax assets:		
Inventory	$ 295.6	$ 271.5
Net operating loss carryover	514.4	374.3
Tax credit carryover	33.8	29.2
Capital loss carryover	8.3	7.9
Product liability and litigation	40.4	92.6
Accrued liabilities	45.5	35.3
Share-based compensation	28.6	27.3
Accounts receivable	24.6	15.2
Other	79.0	48.8
Total deferred tax assets	1,070.2	902.1
Less: Valuation allowances	(546.1)	(390.9)
Total deferred tax assets after valuation allowances	524.1	511.2
Deferred tax liabilities:		
Fixed assets	$ 77.6	$ 94.4
Intangible assets	772.3	1,301.3
Other	42.9	14.1
Total deferred tax liabilities	892.8	1,409.8
Total net deferred income taxes	$ (368.7)	$ (898.6)

Net operating loss carryovers are available to reduce future federal, state and foreign taxable earnings. At December 31, 2019, $391.6 million of these net operating loss carryovers expire within a period of 1 to 20 years and $122.8 million of these net operating loss carryovers have an indefinite life. Valuation allowances for net operating loss carryovers have been established in the amount of $493.4 million and $348.9 million at December 31, 2019 and 2018, respectively.

Deferred tax assets related to tax credit carryovers are available to offset future federal and state tax liabilities. At December 31, 2019, $33.8 million of these tax credit carryovers generally expire within a period of 1 to 16 years. Valuation allowances for certain tax credit carryovers have been established in the amount of $32.3 million and $25.2 million at December 31, 2019 and 2018, respectively.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS *(Continued)*

Deferred tax assets related to capital loss carryovers are also available to reduce future federal and foreign capital gains. At December 31, 2019, $1.8 million of these capital loss carryovers expire within a period of 1 year to 3 years and $6.5 million of these capital loss carryovers have an indefinite life. Valuation allowances for certain capital loss carryovers have been established in the amount of $8.3 million and $7.9 million at December 31, 2019 and 2018, respectively. The remaining valuation allowances booked against deferred tax assets of $12.1 million and $8.9 million at December 31, 2019 and 2018, respectively, relate primarily to accrued liabilities and intangible assets that management believes, more likely than not, will not be realized.

We intend to repatriate at least $5.0 billion of unremitted earnings, of which the additional tax related to remitting earnings is deemed immaterial as a portion of these earnings has already been taxed as toll tax or GILTI and is not subject to further U.S. federal tax. Portions of the additional tax would also be offset by allowable foreign tax credits. Of the $5.0 billion amount, we have an estimated $2.2 billion of cash and intercompany notes available to repatriate and the remainder is invested in the operations of our foreign entities. The remaining amounts earned overseas are expected to be permanently reinvested outside of the United States. If the Company decides at a later date to repatriate these earnings to the U.S., the Company would be required to provide for the net tax effects on these amounts. The Company estimates that the total tax effect of this repatriation would not be significant under current enacted tax laws and regulations and at current currency exchange rates.

The following is a tabular reconciliation of the total amounts of unrecognized tax benefits (in millions):

	For the Years Ended December 31,		
	2019	2018	2017
Balance at January 1	$685.5	$626.8	$ 649.3
Increases related to business combinations	–	4.5	70.2
Increases related to prior periods	24.7	34.6	172.8
Decreases related to prior periods	(35.6)	(14.4)	(262.2)
Increases related to current period	133.2	41.9	24.8
Decreases related to settlements with taxing authorities	(60.2)	(3.8)	(21.7)
Decreases related to lapse of statute of limitations	(5.8)	(4.1)	(6.4)
Balance at December 31	$741.8	$685.5	$ 626.8
Amounts impacting effective tax rate, if recognized balance at December 31	$599.2	$549.1	$ 499.6

We recognize accrued interest and penalties related to unrecognized tax benefits as income tax expense. During 2019, we accrued interest and penalties of $15.0 million, and as of December 31, 2019, had a recognized liability for interest and penalties of $109.2 million, which does not include any increase related to business combinations.

During 2018, we accrued interest and penalties of $18.5 million, and as of December 31, 2018, had a recognized liability for interest and penalties of $94.2 million, which does not include any increases related to business combinations. During 2017, we released interest and penalties of $38.3 million, and as of December 31, 2017, had a recognized liability for interest and penalties of $75.7 million, which included $3.0 million of increase related to the Biomet merger.

We operate on a global basis and are subject to numerous and complex tax laws and regulations. Additionally, tax laws have and continue to undergo rapid changes in both application and interpretation by various countries, including state aid interpretations and the Organization for Economic Cooperation and Development led initiatives. Our income tax filings are subject to examinations by taxing authorities throughout the world. Income tax audits may require an extended period of time to reach resolution and may result in significant income tax adjustments when interpretation of tax laws or allocation of company profits is disputed. Although ultimate timing is uncertain, the net amount of tax liability for unrecognized tax benefits may change within the next twelve months due to changes in audit status, expiration of statutes of limitations, settlements of tax assessments and other events. Management's best estimate of such change is within the range of a $290 million decrease to a $30 million increase.

Our U.S. Federal income tax returns have been audited by the IRS through 2012 and are currently under audit by the IRS for years 2013-2015. The IRS has proposed adjustments for years 2005-2012, primarily related to reallocating profits between certain of our U.S. and foreign subsidiaries. We have disputed these adjustments and intend to continue to vigorously defend our positions as we pursue resolution through petitions with the U.S. Tax Court for years 2005-2009 and the administrative process with the IRS Independent Office of Appeals for years 2010-2012.

State income tax returns are generally subject to examination for a period of 3 to 5 years after filing of the respective return. The state impact of any federal changes generally remains subject to examination by various states for a period of up to one year after formal notification to the states. We have various state income tax return positions in the process of examination, administrative appeals or litigation.

In other major jurisdictions, open years are generally 2011 or later.

17. Capital Stock and Earnings per Share

We are authorized to issue 250.0 million shares of preferred stock, none of which were issued or outstanding as of December 31, 2019.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS *(Continued)*

The numerator for both basic and diluted earnings per share is net earnings available to common stockholders. The denominator for basic earnings per share is the weighted average number of common shares outstanding during the period. The denominator for diluted earnings per share is weighted average shares outstanding adjusted for the effect of dilutive stock options and other equity awards. The following is a reconciliation of weighted average shares for the basic and diluted share computations (in millions):

	For the Years Ended December 31,		
	2019	2018	2017
Weighted average shares outstanding for basic net earnings per share	205.1	203.5	201.9
Effect of dilutive stock options and other equity awards	1.6	–	1.8
Weighted average shares outstanding for diluted net earnings per share	206.7	203.5	203.7

For the years ended December 31, 2019 and 2017, an average of 0.9 million and 1.0 million options, respectively, to purchase shares of common stock were not included in the computation of diluted earnings per share as the exercise prices of these options were greater than the average market price of the common stock. Since we incurred a net loss in the year ended December 31, 2018, no dilutive stock options or other equity awards were included as diluted shares.

18. Segment Data

We design, manufacture and market orthopedic reconstructive products; sports medicine, biologics, extremities and trauma products; spine, craniomaxillofacial and thoracic products ("CMF"); office based technologies; dental implants; and related surgical products. Our chief operating decision maker ("CODM") allocates resources to achieve our operating profit goals through seven operating segments. Our operating segments are comprised of both geographic and product category business units. The geographic operating segments are the Americas, which is comprised principally of the U.S. and includes other North, Central and South American markets; EMEA, which is comprised principally of Europe and includes the Middle East and African markets; and Asia Pacific, which is comprised primarily of Japan, China and Australia and includes other Asian and Pacific markets. The product category operating segments are Spine, Office Based Technologies, CMF and Dental. The geographic operating segments include results from all of our product categories except those in the product category operating segments. The Office Based Technologies, CMF and Dental product category operating segments reflect those respective product category results from all regions, whereas the Spine product category operating segment includes all spine product results excluding those from Asia Pacific.

As it relates to the geographic operating segments, our CODM evaluates performance based upon segment operating profit exclusive of operating expenses pertaining to inventory step-up and other inventory and manufacturing-related charges, intangible asset amortization, goodwill and intangible asset impairment, quality remediation, restructuring and other cost reduction initiatives, acquisition, integration and related, litigation, litigation settlement gain, certain EU Medical Device Regulation expenses, other charges, and global operations and corporate functions. Global operations and corporate functions include research, development engineering, medical education, brand management, corporate legal, finance and human resource functions, manufacturing operations and logistics and share-based payment expense. As it relates to each product category operating segment, research, development engineering, medical education, brand management and other various costs that are specific to the product category operating segment's operations are reflected in its operating profit results. Due to these additional costs included in the product category operating segments, profitability metrics among the geographic operating segments and product category operating segments are not comparable. Intercompany transactions have been eliminated from segment operating profit.

Our CODM does not review asset information by operating segment. Instead, our CODM reviews cash flow and other financial ratios by operating segment.

These seven operating segments are the basis for our reportable segment information provided below. The four product category operating segments are individually insignificant to our consolidated results and therefore do not constitute a reporting segment either individually or combined. For presentation purposes, these product category operating segments have been aggregated. Certain insignificant prior period reportable segment financial information has been reclassified to conform to the current presentation.

As discussed in Note 4, in 2019 we initiated a restructuring program. As of December 31, 2019, our operating segments have not changed. However, it is likely in 2020 there will be changes in either our operating segments or the composition of operating profit in our current operating segments. We cannot determine at this time what the impact of those changes may be.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS *(Continued)*

Net sales and other information by segment is as follows (in millions):

	Americas	EMEA	Asia Pacific	Immaterial Product Category Operating Segments	Global Operations and Corporate Functions	Total
For the Year Ended December 31, 2019						
Net sales	$3,978.1	$1,538.6	$1,297.0	$1,168.5	$ –	$7,982.2
Depreciation and amortization	109.3	71.0	65.2	45.5	715.1	1,006.1
Segment operating profit	2,163.2	477.1	458.9	208.2	(1,124.1)	2,183.3
Inventory and manufacturing-related charges						(53.9)
Intangible asset amortization						(584.3)
Intangible asset impairment						(70.1)
Quality remediation						(82.4)
Restructuring and other cost reduction initiatives						(50.0)
Acquisition, integration and related						(12.2)
Litigation						(65.0)
Litigation settlement gain						23.5
European Union Medical Device Regulation						(30.9)
Other charges						(120.5)
Operating profit						1,137.5
For the Year Ended December 31, 2018						
Net sales	$3,932.6	$1,576.1	$1,236.9	$1,187.3	$ –	$7,932.9
Depreciation and amortization	120.4	70.3	66.6	45.0	738.2	1,040.5
Segment operating profit	2,084.4	479.3	435.3	206.6	(995.3)	2,210.3
Inventory and manufacturing-related charges						(32.5)
Intangible asset amortization						(595.9)
Goodwill and intangible asset impairment						(979.7)
Quality remediation						(165.4)
Restructuring and other cost reduction initiatives						(34.2)
Acquisition, integration and related						(99.5)
Litigation						(186.0)
European Union Medical Device Regulation						(3.7)
Other charges						(79.6)
Operating profit						33.8
For the Year Ended December 31, 2017						
Net sales	$3,928.9	$1,523.4	$1,158.3	$1,192.7	$ –	$7,803.3
Depreciation and amortization	127.6	71.7	60.2	45.7	757.5	1,062.7
Segment operating profit	2,126.8	478.1	417.6	262.9	(859.8)	2,425.6
Inventory step-up and other inventory and manufacturing-related charges						(70.8)
Intangible asset amortization						(603.9)
Goodwill and intangible asset impairment						(331.5)
Quality remediation						(195.1)
Restructuring and other cost reduction initiatives						(17.6)
Acquisition, integration and related						(262.2)
Litigation						(104.0)
Other charges						(41.2)
Operating profit						799.3

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS *(Continued)*

We conduct business in the following countries that hold 10 percent or more of our total consolidated Property, plant and equipment, net (in millions):

	As of December 31,	
	2019	2018
United States	$1,295.0	$1,235.1
Other countries	782.4	780.3
Property, plant and equipment, net	$2,077.4	$2,015.4

U.S. sales were $4,592.1 million, $4,560.0 million, and $4,582.2 million for the years ended December 31, 2019, 2018 and 2017, respectively. Sales within any other individual country were less than 10 percent of our consolidated sales in each of those years. Sales are attributable to a country based upon the customer's country of domicile.

19. Leases

We own most of our manufacturing facilities, but lease various office space, vehicles and other less significant assets throughout the world. Our contracts contain a lease if they convey a right to control the use of an identified asset, either explicitly or implicitly, in exchange for consideration. Our lease contracts are a necessary part of our business, but we do not believe they are significant to our overall operations. We do not have any significant finance leases. Additionally, we do not have significant leases: where we are considered a lessor; where we sublease our assets; with an initial term of twelve months or less; with related parties; with residual value guarantees; that impose restrictions or covenants on us; or that have not yet commenced, but create significant rights and obligations against us.

Our real estate leases generally have terms of between 5 to 10 years and contain lease extension options that can vary from month-to-month extensions to up to 5 year extensions. We include extension options in our lease term if we are reasonably certain to exercise that option. In determining whether an extension is reasonably certain, we consider the uniqueness of the property for our needs, the availability of similar properties, whether the extension period payments remain the same or may change due to market rates or fixed price increases in the contract, and other economic factors. Our vehicle leases generally have terms of between 3 to 5 years and contain lease extension options on a month-to-month basis. Our vehicle leases are generally not reasonably certain to be extended.

Under GAAP, we are required to discount our lease liabilities to present value using the rate implicit in the lease, or our incremental borrowing rate for a similar term as the lease term if the implicit rate is not readily available. We generally do not have adequate information to know the implicit rate in a lease and therefore use our incremental borrowing rate. Under GAAP, the incremental borrowing rate must be on a collateralized basis, but our debt arrangements are unsecured. We have determined our incremental borrowing rate by using our credit rating to estimate our unsecured borrowing rate and applying reasonable assumptions to reduce the unsecured rate for a risk adjustment effect from collateral.

We adopted ASU 2016-02 – Leases (Topic 842) effective January 1, 2019. Since we adopted the new standard using the period of adoption transition method (see Note 2 for additional information regarding the new standard), we are not required to present 2018 and 2017 comparative disclosures under the new standard. However, we are required to present the required annual disclosures under the previous GAAP lease accounting standard.

Information on our leases is as follows ($ in millions):

	For the Years Ended December 31,		
	2019	2018	2017
Lease cost	$76.0	$72.2	$87.2
Cash paid for leases recognized in operating cash flows	$73.6		
Right-of-use assets obtained in exchange for new lease liabilities	$55.0		

	As of December 31, 2019
Right-of-use assets recognized in Other assets	$ 266.7
Lease liabilities recognized in Other current liabilities	$ 64.2
Lease liabilities recognized in Other long-term liabilities	$ 215.5
Weighted-average remaining lease term	6.3 years
Weighted-average discount rate	2.7%

Our variable lease costs are not significant.

Our future minimum lease payments as of December 31, 2019 were (in millions):

For the Years Ending December 31,	
2020	$ 70.5
2021	57.4
2022	42.0
2023	34.3
2024	29.0
Thereafter	74.1
Total	307.3
Less imputed interest	27.6
Total	$279.7

20. Commitments and Contingencies

On a quarterly and annual basis, we review relevant information with respect to loss contingencies and update our accruals, disclosures and estimates of reasonably possible losses or ranges of loss based on such reviews. We establish liabilities for loss contingencies when it is probable that a loss

has been incurred and the amount of the loss can be reasonably estimated. For matters where a loss is believed to be reasonably possible, but not probable, no accrual has been made.

Litigation

Durom Cup-related claims: On July 22, 2008, we temporarily suspended marketing and distribution of the Durom Cup in the U.S. Subsequently, a number of product liability lawsuits were filed against us in various U.S. and foreign jurisdictions. The plaintiffs seek damages for personal injury, and they generally allege that the Durom Cup contains defects that result in complications and premature revision of the device. We have settled the majority of these claims and others are still pending. The majority of the pending U.S. lawsuits are currently in a federal Multidistrict Litigation ("MDL") in the District of New Jersey (*In Re: Zimmer Durom Hip Cup Products Liability Litigation*). Litigation activity in the MDL is stayed pending finalization of the U.S. Durom Cup Settlement Program, an extrajudicial program created to resolve actions and claims of eligible U.S. plaintiffs and claimants. Other lawsuits are pending in various domestic and foreign jurisdictions, and additional claims may be asserted in the future. The majority of claims outside the U.S. are pending in Germany, Netherlands and Italy.

Since 2008, we have recognized net expense of $443.0 million for Durom Cup-related claims. In the years ended December 31, 2019 and 2018, we lowered our estimate of the number of Durom Cup-related claims we expect to settle and, as a result, we recognized gains of $9.5 million and $37.2 million, respectively, in selling, general and administrative expense. We recognized $10.3 million in expense for Durom Cup-related claims in 2017.

Our estimate as of December 31, 2019 of the remaining liability for all Durom Cup-related claims is $59.9 million. We expect to pay the majority of the Durom Cup-related claims within the next few years.

Our understanding of clinical outcomes with the Durom Cup and other large diameter hip cups continues to evolve. We rely on significant estimates in determining the provisions for Durom Cup-related claims, including our estimate of the number of claims that we will receive and the average amount we will pay per claim. The actual number of claims and the actual amount we pay per claim may differ from our estimates. Among other factors, since our understanding of the clinical outcomes is still evolving, we cannot reasonably estimate the possible loss or range of loss that may result from Durom Cup-related claims in excess of the losses we have accrued. Although we are vigorously defending these lawsuits, their ultimate resolution is uncertain.

Zimmer M/L Taper, M/L Taper with Kinectiv Technology, and Versys Femoral Head-related claims: We are a defendant in a number of product liability lawsuits relating to our M/L Taper and M/L Taper with Kinectiv Technology hip stems, and Versys Femoral Head implants. The plaintiffs seek damages for personal injury, alleging that defects in the products lead to corrosion at the head/stem junction resulting in, among other things, pain, inflammation and revision surgery. The majority of the cases are consolidated in an MDL created on October 3, 2018 in the U.S. District Court for the Southern District of New York (*In Re: Zimmer M/L Taper Hip Prosthesis or M/L Taper Hip Prosthesis with Kinectiv Technology and Versys Femoral Head Products Liability Litigation*). Other related cases are pending in various state and federal courts. Additional lawsuits are likely to be filed. Although we are vigorously defending these lawsuits, their ultimate resolution is uncertain.

Biomet metal-on-metal hip implant claims: Biomet is a defendant in a number of product liability lawsuits relating to metal-on-metal hip implants, most of which involve the M2a-Magnum hip system. Cases are currently consolidated in an MDL in the U.S. District Court for the Northern District of Indiana *(In Re: Biomet M2a Magnum Hip Implant Product Liability Litigation)* and in various state, federal and foreign courts, with the majority of domestic state court cases pending in Indiana and Florida.

On February 3, 2014, Biomet announced the settlement of the MDL. Lawsuits filed in the MDL by April 15, 2014 were eligible to participate in the settlement. Those claims that did not settle via the MDL settlement program have re-commenced litigation in the MDL under a new case management plan, or are in the process of being remanded to their originating jurisdictions. The settlement does not affect certain other claims relating to Biomet's metal-on-metal hip products that are pending in various state and foreign courts, or other claims that may be filed in the future. Our estimate as of December 31, 2019 of the remaining liability for all Biomet metal-on-metal hip implant claims is $50.1 million. Although we are vigorously defending these lawsuits, their ultimate resolution is uncertain.

Heraeus trade secret misappropriation lawsuits: In December 2008, Heraeus Kulzer GmbH (together with its affiliates, "Heraeus") initiated legal proceedings in Germany against Biomet, Inc., Biomet Europe BV, certain other entities and certain employees alleging that the defendants misappropriated Heraeus trade secrets when developing Biomet Europe's Refobacin and Biomet Bone Cement line of cements ("European Cements"). The lawsuit sought to preclude the defendants from producing, marketing and offering for sale their then-current line of European Cements and to compensate Heraeus for any damages incurred.

Germany: On June 5, 2014, the German appeals court in Frankfurt (i) enjoined Biomet, Inc., Biomet Europe BV and Biomet Deutschland GmbH from manufacturing, selling or offering the European Cements to the extent they contain certain raw materials in particular specifications; (ii) held the defendants jointly and severally liable to Heraeus for any damages from the sale of European Cements since 2005; and (iii) ruled that no further review may be sought (the "Frankfurt Decision"). The Heraeus and Biomet parties both

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS *(Continued)*

sought appeal against the Frankfurt Decision. In a decision dated June 16, 2016, the German Supreme Court dismissed the parties' appeals without reaching the merits, rendering that decision final.

In December 2016, Heraeus filed papers to restart proceedings against Biomet Orthopaedics Switzerland GmbH, seeking to require that entity to relinquish its CE certificates for the European Cements. In January 2017, Heraeus notified Biomet it had filed a claim for damages in the amount of €121.9 million for sales in Germany, which it first increased to €125.9 million and with a filing in June 2019 further increased to €146.7 million plus statutory interest. As of December 31, 2019, these two proceedings remained pending in front of the Darmstadt court. In September 2017, Heraeus filed an enforcement action in the Darmstadt court against Biomet Europe, requesting that a fine be imposed against Biomet Europe for failure to disclose the amount of the European Cements which Biomet Orthopaedics Switzerland had ordered to be manufactured in Germany (e.g., for the Chinese market). In June 2018, the Darmstadt court dismissed Heraeus' request. Heraeus appealed the decision. Also in September 2017, Heraeus filed suit against Zimmer Biomet Deutschland in the court of first instance in Freiberg concerning the sale of the European Cements with certain changed raw materials. Heraeus seeks an injunction on the basis that the continued use of the product names for the European Cements is misleading for customers and thus an act of unfair competition. On June 29, 2018, the court in Freiberg, Germany dismissed Heraeus' request for an injunction prohibiting the marketing of the European Cements under their current names on the grounds that the same request had already been decided upon by the Frankfurt Decision which became final and binding. Heraeus has appealed this decision to the Court of Appeals in Karlsruhe, Germany. The appeals hearing occurred in December 2019.

United States: On September 8, 2014, Heraeus filed a complaint against a Biomet supplier, Esschem, Inc. ("Esschem"), in the U.S. District Court for the Eastern District of Pennsylvania. The lawsuit contained allegations that focused on two copolymer compounds that Esschem sold to Biomet, which Biomet incorporated into certain bone cement products that compete with Heraeus' bone cement products. The complaint alleged that Biomet helped Esschem to develop these copolymers, using Heraeus trade secrets that Biomet allegedly misappropriated. The complaint asserted a claim under the Pennsylvania Uniform Trade Secrets Act, as well as other various common law tort claims, all based upon the same trade secret misappropriation theory. Heraeus sought to enjoin Esschem from supplying the copolymers to any third party and actual damages. The complaint also sought punitive damages, costs and attorneys' fees. Although Biomet was not a party to this lawsuit, Biomet agreed, at Esschem's request and subject to certain limitations, to indemnify Esschem for any liability, damages and legal costs related to this matter. On November 3, 2014, the court entered an order denying Heraeus' motion for a temporary restraining order. On June 30, 2016, the court entered an order denying Heraeus' request to give preclusive effect to the factual findings in the Frankfurt Decision. On June 6, 2017, the court entered an order denying Heraeus' motion to add Biomet as a party to the lawsuit. On January 26, 2018, the court entered an order granting Esschem's motion for summary judgment and dismissed all of Heraeus' claims with prejudice. On February 21, 2018, Heraeus filed a notice of appeal to the U.S. Court of Appeals for the Third Circuit, which heard oral argument on the appeal on October 23, 2018. On June 21, 2019, the Third Circuit partially reversed the decision of the U.S. District Court for the Eastern District of Pennsylvania granting Esschem summary judgment and remanded the case back to the lower court. On July 5, 2019, Esschem filed a petition in the Third Circuit for rehearing *en banc* and a motion in the alternative to certify a question of state law to the Supreme Court of Pennsylvania, which was denied on August 1, 2019.

On December 7, 2017, Heraeus filed a complaint against Zimmer Biomet Holdings, Inc. and Biomet, Inc. in the U.S. District Court for the Eastern District of Pennsylvania alleging a single claim of trade secret misappropriation under the Pennsylvania Uniform Trade Secrets Act based on the same factual allegations as the Esschem litigation. On March 5, 2018, Heraeus filed an amended complaint adding a second claim of trade secret misappropriation under Pennsylvania common law. Heraeus seeks to enjoin the Zimmer Biomet parties from future use of the allegedly misappropriated trade secrets and recovery of unspecified damages for alleged past use. On April 18, 2018, the Zimmer Biomet parties filed a motion to dismiss both claims. On March 8, 2019, the court stayed the case pending the Third Circuit's decision in the Esschem case described above. In September 2019, the Zimmer Biomet parties filed a motion to stay the proceedings pending (1) the court's decision on Esschem's motion for summary judgment in the Esschem case described above and (2) the outcome of the U.S. International Trade Commission complaint filed by Heraeus asserting similar claims, described below under "Regulatory Matters, Government Investigations and Other Matters." The Zimmer Biomet parties' motion remained pending as of December 31, 2019.

Other European Countries: Heraeus continues to pursue other related legal proceedings in Europe seeking various forms of relief, including injunctive relief and damages, against Biomet-related entities relating to the European Cements. On October 2, 2018, the Belgian Court of Appeal of Mons issued a judgment in favor of Heraeus relating to its request for past damages caused by the alleged misappropriation of its trade secrets, and an injunction preventing future sales of certain European Cements in Belgium (the "Belgian Decision"). We appealed this judgment to the Belgian Supreme Court. The Belgian Supreme Court dismissed our appeal in October 2019 and this decision is final. Heraeus filed a suit in Belgium concerning the continued sale of the European Cements with certain changed materials. Like its suit in Germany, Heraeus

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS *(Continued)*

seeks an injunction on the basis that the continued use of the product names for the European Cements is misleading for customers and thus an act of unfair competition. On May 7, 2019, the Liège Commercial Court issued a judgment that Zimmer Biomet failed to inform its hospital and surgeon customers of the changes made to the composition of the cement with certain changed materials and ordered, as a sole remedy, that Zimmer Biomet send letters to those customers, which we have done. We and Heraeus have each filed an appeal to the judgment.

On February 13, 2019, a Norwegian court of first instance issued a judgment in favor of Heraeus on its claim for misappropriation of trade secrets. The court awarded damages of 19,500,000 NOK, or approximately $2.3 million, plus attorneys' fees, and issued an injunction, which is not final and thus not currently being enforced, preventing Zimmer Biomet Norway from marketing in Norway bone cements identified with the current product names and bone cements making use of the trade secrets which were acknowledged in the Frankfurt Decision. We have appealed the Norwegian judgment to the court of second instance.

On October 29, 2019, an Italian court of first instance issued a judgment in favor of Heraeus on its claim of misappropriation of trade secrets, but did not yet order an award of damages. We intend to appeal the decision.

Heraeus is pursuing damages and injunctive relief in France in an effort to prevent us from manufacturing, marketing and selling the European Cements (the "France Litigation"). The European Cements are manufactured at our facility in Valence, France. On December 11, 2018, a hearing was held in the France Litigation before the commercial court in Romans-sur-Isère. On May 23, 2019, the commercial court ruled in our favor. On July 12, 2019, Hereaus filed an appeal to the court of second instance in Grenoble, France. Although we are vigorously defending the France Litigation, the ultimate outcome is uncertain. An adverse ruling in the France Litigation could have a material adverse effect on our business, financial condition and results of operations.

We have accrued an estimated loss relating to the collective trade secret litigation, including estimated legal costs to defend. Damages relating to the Frankfurt Decision are subject to separate proceedings, and the Belgian court appointed an expert to determine the amount of damages related to the Belgian Decision. Thus, it is reasonably possible that our estimate of the loss we may incur may change in the future. Although we are vigorously defending these lawsuits, their ultimate resolution is uncertain.

Stryker patent infringement lawsuit: On December 10, 2010, Stryker Corporation and related entities ("Stryker") filed suit against us in the U.S. District Court for the Western District of Michigan, alleging that certain of our Pulsavac® Plus Wound Debridement Products infringe three U.S. patents assigned to Stryker. The case was tried beginning on January 15, 2013, and on February 5, 2013, the jury found that we infringed certain claims of the subject patents. The jury awarded $70.0 million in monetary damages for lost profits. The jury also found that we willfully infringed the subject patents. We filed multiple post-trial motions, including a motion seeking a new trial. On August 7, 2013, the trial court issued a ruling denying all of our motions and awarded treble damages and attorneys' fees to Stryker. We filed a notice of appeal to the Court of Appeals for the Federal Circuit to seek reversal of both the jury's verdict and the trial court's rulings on our post-trial motions. Oral argument before the Court of Appeals for the Federal Circuit took place on September 8, 2014. On December 19, 2014, the Federal Circuit issued a decision affirming the $70.0 million lost profits award but reversed the willfulness finding, vacating the treble damages award and vacating and remanding the attorneys' fees award. We accrued an estimated loss of $70.0 million related to this matter in the three month period ended December 31, 2014. On January 20, 2015, Stryker filed a motion with the Federal Circuit for a rehearing *en banc*. On March 23, 2015, the Federal Circuit denied Stryker's petition. Stryker subsequently filed a petition for certiorari to the U.S. Supreme Court. In July 2015, we paid the final lost profits award of $90.3 million, which includes the original $70.0 million plus pre- and post-judgment interest and damages for sales that occurred post-trial but prior to our entry into a license agreement with Stryker. On October 19, 2015, the U.S. Supreme Court granted Stryker's petition for certiorari. Oral argument took place on February 23, 2016. On June 13, 2016, the U.S. Supreme Court issued its decision, vacating the judgment of the Federal Circuit and remanding the case for further proceedings related to the willfulness issue. On September 12, 2016, the Federal Circuit issued an opinion affirming the jury's willfulness finding and vacating and remanding the trial court's award of treble damages, its finding that this was an exceptional case and its award of attorneys' fees. The case was remanded back to the trial court. Oral argument on Stryker's renewed consolidated motion for enhanced damages and attorneys' fees took place on June 28, 2017. On July 12, 2017, the trial court issued an order reaffirming its award of treble damages, its finding that this was an exceptional case and its award of attorneys' fees. On July 24, 2017, we appealed the ruling to the Federal Circuit and obtained a supersedeas bond staying enforcement of the judgment pending appeal. Oral argument before the Federal Circuit took place on December 3, 2018 and the Federal Circuit affirmed the trial court's ruling in full on December 10, 2018. We accrued an estimated loss of approximately $168.0 million related to the award of treble damages and attorneys' fees in the three-month period ended December 31, 2018. On January 23, 2019, we filed a petition with the Federal Circuit for a rehearing *en banc.* On March 19, 2019, the petition for rehearing *en banc* was denied. In late March 2019, we paid the outstanding judgment of approximately $168.0 million. On June 17, 2019, we filed a petition for certiorari seeking U.S. Supreme Court review of the Federal

Circuit's decision. On October 7, 2019, the U.S. Supreme Court denied certiorari.

Putative Securities Class Action: On December 2, 2016, a complaint was filed in the U.S. District Court for the Northern District of Indiana (*Shah v. Zimmer Biomet Holdings, Inc. et al.)*, naming us, one of our officers and two of our now former officers as defendants. On June 28, 2017, the plaintiffs filed a corrected amended complaint, naming as defendants, in addition to those previously named, current and former members of our Board of Directors, one additional officer, and the underwriters in connection with secondary offerings of our common stock by certain selling stockholders in 2016. On October 6, 2017, the plaintiffs voluntarily dismissed the underwriters without prejudice. On October 8, 2017, the plaintiffs filed a second amended complaint, naming as defendants, in addition to those current and former officers and Board members previously named, certain former stockholders of ours who sold shares of our common stock in secondary public offerings in 2016. We and our current and former officers and Board members named as defendants are sometimes hereinafter referred to as the "Zimmer Biomet Defendant group". The former stockholders of ours who sold shares of our common stock in secondary public offerings in 2016 are sometimes hereinafter referred to as the "Private Equity Fund Defendant group". The second amended complaint relates to a putative class action on behalf of persons who purchased our common stock between June 7, 2016 and November 7, 2016. The second amended complaint generally alleges that the defendants violated federal securities laws by making materially false and/or misleading statements and/or omissions about our compliance with U.S. Food and Drug Administration ("FDA") regulations and our ability to continue to accelerate our organic revenue growth rate in the second half of 2016. The defendants filed their respective motions to dismiss on December 20, 2017, plaintiffs filed their omnibus response to the motions to dismiss on March 13, 2018 and the defendants filed their respective reply briefs on May 18, 2018. On September 27, 2018, the court denied the Zimmer Biomet Defendant group's motion to dismiss in its entirety. The court granted the Private Equity Fund Defendant group's motion to dismiss, without prejudice. On October 9, 2018, the Zimmer Biomet Defendant group filed a motion (i) to amend the court's order on the motion to certify two issues for interlocutory appeal, and (ii) to stay proceedings pending appeal. On February 21, 2019, that motion was denied. On April 11, 2019, the plaintiffs moved for class certification. On June 20, 2019, the Zimmer Biomet Defendant group filed its response. The plaintiffs' motion remained pending as of February 18, 2020. The plaintiffs seek unspecified damages and interest, attorneys' fees, costs, and other relief. Although we believe this lawsuit is without merit, during a mediation in December 2019, plaintiffs and defendants, along with Zimmer Biomet's insurers, reached a settlement in principle to resolve the claims. We have made an accrual for the proposed settlement that we expect to be fully covered by our insurers.

Shareholder Derivative Actions: On June 14, 2019 and July 29, 2019, two shareholder derivative actions, *Green v. Begley et al.* and *Detectives Endowment Association Annuity Fund v. Begley et al.*, were filed in the Court of Chancery in the State of Delaware. On October 2, 2019 and October 11, 2019, two additional shareholder derivative actions, *Karp v. Begley et al.* and *DiGaudio v. Begley et al.*, were filed in the U.S. District Court for the District of Delaware. The plaintiff in each action seeks to maintain the action purportedly on our behalf against certain of our current and former directors and officers (the "individual defendants") and certain former stockholders of ours who sold shares of our common stock in various secondary public offerings in 2016 (the "private equity fund defendants"). The plaintiff in each action alleges, among other things, breaches of fiduciary duties against the individual defendants and insider trading against two individual defendants and the private equity fund defendants, based on substantially the same factual allegations as the putative federal securities class action referenced above (*Shah v. Zimmer Biomet Holdings, Inc. et al.)*. The plaintiffs do not seek damages from us, but instead request damages on our behalf from the defendants of an unspecified amount. The plaintiffs also seek attorneys' fees, costs and other relief.

Regulatory Matters, Government Investigations and Other Matters

U.S. International Trade Commission Investigation: On March 5, 2019, Heraeus filed a complaint with the U.S. International Trade Commission ("ITC") against us and certain of our subsidiaries. The complaint alleges that Biomet misappropriated Heraeus' trade secrets in the formulation and manufacture of two bone cement products now sold by Zimmer Biomet, both of which are imported from our Valence, France facility. Heraeus requested that the ITC institute an investigation and, after the investigation, issue a limited exclusion order and cease and desist orders. On April 5, 2019, the ITC ordered an investigation be instituted into whether we have committed an "unfair act" in the importation, sale for importation, or sale after importation of certain bone cement products, and the investigation is ongoing. An evidentiary hearing in front of an administrative law judge at the ITC was held in January 2020 and an initial determination is expected to issue by May 2020. We cannot currently predict the outcome of this investigation. An adverse outcome in this ITC proceeding could have a material adverse effect on our business, financial condition and results of operations.

FDA warning letters: In August 2018, we received a warning letter from the FDA related to observed non-conformities with current good manufacturing practice requirements of the FDA's Quality System Regulation (21 CFR Part 820) ("QSR") at our legacy Biomet manufacturing facility in Warsaw, Indiana (this facility is sometimes referred to in this report as the "Warsaw North Campus"). In September 2012, we received a warning letter from the FDA citing concerns relating to certain processes pertaining to products manufactured at our Ponce, Puerto Rico manufacturing

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS *(Continued)*

facility. We have provided detailed responses to the FDA as to our corrective actions and will continue to work expeditiously to address the issues identified by the FDA during inspections in Warsaw and Ponce. As of December 31, 2019, the Warsaw and Ponce warning letters remained pending. Until the violations cited in the pending warning letters are corrected, we may be subject to additional regulatory action by the FDA, as described more fully below. Additionally, requests for Certificates to Foreign Governments related to products manufactured at certain of our facilities may not be granted and premarket approval applications for Class III devices to which the QSR deviations at these facilities are reasonably related will not be approved until the violations have been corrected. In addition to responding to the warning letters described above, we are in the process of addressing various FDA Form 483 inspectional observations at certain of our manufacturing facilities, including new observations issued by the FDA following an inspection of the Warsaw North Campus in January 2020. The ultimate outcome of these matters is presently uncertain. Among other available regulatory actions, the FDA may impose operating restrictions, including a ceasing of operations, at one or more facilities, enjoining and restraining certain violations of applicable law pertaining to products, seizure of products and assessing civil or criminal penalties against our officers, employees or us. The FDA could also issue a corporate warning letter or a recidivist warning letter or negotiate the entry of a consent decree of permanent injunction with us. The FDA may also recommend prosecution by the U.S. Department of Justice ("DOJ"). Any adverse regulatory action, depending on its magnitude, may restrict us from effectively manufacturing, marketing and selling our products and could have a material adverse effect on our business, financial condition and results of operations.

Deferred Prosecution Agreement ("DPA") relating to U.S. Foreign Corrupt Practices Act ("FCPA") matters: On January 12, 2017, we resolved previously-disclosed FCPA matters involving Biomet and certain of its subsidiaries. As part of the settlement, (i) Biomet resolved matters with the U.S. Securities and Exchange Commission (the "SEC") through an administrative cease-and-desist order (the "Order"); (ii) we entered into a DPA with the DOJ; and (iii) JERDS Luxembourg Holding S.à r.l. ("JERDS"), the direct parent company of Biomet 3i Mexico SA de CV and an indirect, wholly-owned subsidiary of Biomet, entered into a plea agreement (the "Plea Agreement") with the DOJ. The conduct underlying these resolutions occurred prior to our acquisition of Biomet.

Pursuant to the terms of the Order, Biomet resolved claims with the SEC related to violations of the books and records, internal controls and anti-bribery provisions of the FCPA by disgorging profits to the U.S. government in an aggregate amount of approximately $6.5 million, inclusive of pre-judgment interest, and paying a civil penalty in the amount of $6.5 million (collectively, the "Civil Settlement Payments"). We also agreed to pay a criminal penalty of approximately $17.5 million (together with the Civil Settlement Payments, the "Settlement Payments") to the U.S. government pursuant to the terms of the DPA. We made the Settlement Payments in January 2017 and, as previously disclosed, had accrued, as of June 24, 2015, the closing date of the Biomet merger, an amount sufficient to cover this matter.

Under the DPA, which has a term of three years, the DOJ agreed to defer criminal prosecution of us in connection with the charged violation of the internal controls provision of the FCPA as long as we comply with the terms of the DPA. In addition, we are subject to oversight by an independent compliance monitor, who was appointed effective as of August 7, 2017. The monitorship may remain in place until August 7, 2020. If we remain in compliance with the DPA during its term, the charges against us will be dismissed with prejudice. The term of the DPA and monitorship may be extended for up to one additional year at the DOJ's discretion. In addition, under its Plea Agreement with the DOJ, JERDS pleaded guilty on January 13, 2017 to aiding and abetting a violation of the books and records provision of the FCPA. In light of the DPA we entered into, JERDS paid only a nominal assessment and no criminal penalty.

If we do not comply with the terms of the DPA, we could be subject to prosecution for violating the internal controls provisions of the FCPA and the conduct of Biomet and its subsidiaries described in the DPA, which conduct pre-dated our acquisition of Biomet, as well as any new or continuing violations. We could also be subject to exclusion by the Office of Inspector General of the Department of Health and Human Services ("OIG") from participation in federal healthcare programs, including Medicaid and Medicare. Any of these events could have a material adverse effect on our business, financial condition, results of operations and cash flows.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS *(Continued)*

21. Quarterly Financial Information (Unaudited)

(in millions, except per share data)

	2019 Quarter Ended				2018 Quarter Ended			
	Mar	Jun	Sep	Dec	Mar	Jun	Sep	Dec
Net sales	$1,975.5	$1,988.6	$1,892.4	$2,125.7	$2,017.6	$2,007.6	$1,836.7	$2,071.0
Gross profit	1,278.7	1,260.4	1,210.1	1,396.1	1,291.0	1,274.4	1,160.1	1,339.6
Net earnings (loss) of Zimmer Biomet Holdings, Inc.	246.1	133.7	431.1	320.7	174.7	185.0	162.2	(901.1)
Earnings (loss) per common share								
Basic	1.20	0.65	2.10	1.56	0.86	0.91	0.80	(4.42)
Diluted	1.20	0.65	2.08	1.54	0.85	0.90	0.79	(4.42)

In the three month period ended December 31, 2019, we recognized a $51.2 million tax benefit related to TRAF as well as the tax impact of certain restructuring transactions in Switzerland.

In the three month period ended December 31, 2018, we recorded goodwill impairment charges of $975.9 million.

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

None.

Item 9A. Controls and Procedures

Evaluation of Disclosure Controls and Procedures

We maintain disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act) that are designed to provide reasonable assurance that information required to be disclosed in the reports that we file or submit under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the Securities and Exchange Commission's rules and forms, and that such information is accumulated and communicated to our management, including our Chief Executive Officer and Chief Financial Officer, as appropriate to allow timely decisions regarding required disclosures. Because of inherent limitations, disclosure controls and procedures, no matter how well designed and operated, can provide only reasonable, and not absolute, assurance that the objectives of disclosure controls and procedures are met.

Our management, with the participation of our Chief Executive Officer and Chief Financial Officer, evaluated the effectiveness of our disclosure controls and procedures as of the end of the period covered by this report. Based on that evaluation, our Chief Executive Officer and Chief Financial Officer concluded that as of December 31, 2019, the end of the period covered by this report, our disclosure controls and procedures were effective at a reasonable assurance level.

Management's Annual Report on Internal Control over Financial Reporting

The management of Zimmer Biomet Holdings, Inc. is responsible for establishing and maintaining adequate internal control over financial reporting. Internal control over financial reporting is defined in Rules 13a-15(f) and 15d-15(f) promulgated under the Exchange Act, as a process designed by, or under the supervision of, the Company's principal executive and principal financial officers, or persons performing similar functions, and effected by the Company's board of directors, management and other personnel, 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 and includes those policies and procedures that:

- Pertain to the maintenance of records that in reasonable detail accurately and fairly reflect the transactions and dispositions of the assets of the Company;
- Provide reasonable assurance that transactions are recorded as necessary to permit preparation of 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
- 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.

The Company's management assessed the effectiveness of the Company's internal control over financial reporting as of December 31, 2019. In making this assessment, the Company's management used the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission (COSO) in *Internal Control-Integrated Framework* (2013).

Based on their assessment, management has concluded that, as of December 31, 2019, the Company's internal control over financial reporting is effective based on those criteria.

The Company's independent registered public accounting firm, PricewaterhouseCoopers LLP, has audited the effectiveness of the Company's internal control over financial reporting as of December 31, 2019, as stated in its report which appears in Item 8 of this Annual Report on Form 10-K.

Changes in Internal Control Over Financial Reporting

There were no changes in our internal control over financial reporting that occurred during the quarter ended December 31, 2019 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting. As previously reported, on January 1, 2019 we adopted ASU 2016-02 – Leases (Topic 842). This ASU requires lessees to recognize right-of-use assets and lease liabilities on the balance sheet. As a result, we added additional internal controls to comply with the new standard in the first quarter of 2019.

Item 9B. Other Information

During the fourth quarter of 2019, the Audit Committee of our Board of Directors approved the engagement of PricewaterhouseCoopers LLP, our independent registered public accounting firm, to perform certain non-audit services. This disclosure is made pursuant to Section 10A(i)(2) of the Exchange Act.

PART III

Item 10. Directors, Executive Officers and Corporate Governance

Information required by this item is incorporated by reference from our definitive Proxy Statement for the annual meeting of stockholders to be held on May 8, 2020 (the "2020 Proxy Statement").

We have adopted the Zimmer Biomet Code of Ethics for Chief Executive Officer and Senior Financial Officers (the "finance code of ethics"), a code of ethics that applies to our Chief Executive Officer, Chief Financial Officer, Chief Accounting Officer and Corporate Controller, and other finance organization senior employees. The finance code of ethics is publicly available in the Investor Relations section of our website, which may be accessed from our homepage at www.zimmerbiomet.com or directly at https://investor.zimmerbiomet.com. If we make any substantive amendments to the finance code of ethics or grant any waiver, including any implicit waiver, from a provision of the code to our Chief Executive Officer, Chief Financial Officer, or Chief Accounting Officer and Corporate Controller, we will disclose the nature of that amendment in the Investor Relations section of our website.

Item 11. Executive Compensation

Information required by this item is incorporated by reference from our 2020 Proxy Statement.

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

Information required by this item is incorporated by reference from our 2020 Proxy Statement.

Item 13. Certain Relationships and Related Transactions and Director Independence

Information required by this item is incorporated by reference from our 2020 Proxy Statement.

Item 14. Principal Accountant Fees and Services

Information required by this item is incorporated by reference from our 2020 Proxy Statement.

PART IV

Item 15. Exhibits and Financial Statement Schedules

(a) 1. Financial Statements

The following consolidated financial statements of Zimmer Biomet Holdings, Inc. and its subsidiaries are set forth in Part II, Item 8.

Report of Independent Registered Public Accounting Firm

Consolidated Statements of Earnings for the Years Ended December 31, 2019, 2018 and 2017

Consolidated Statements of Comprehensive Income (Loss) for the Years Ended December 31, 2019, 2018 and 2017

Consolidated Balance Sheets as of December 31, 2019 and 2018

Consolidated Statements of Stockholders' Equity for the Years Ended December 31, 2019, 2018 and 2017

Consolidated Statements of Cash Flows for the Years Ended December 31, 2019, 2018 and 2017

Notes to Consolidated Financial Statements

2. Financial Statement Schedule

Schedule II. Valuation and Qualifying Accounts (in millions):

Description	Balance at Beginning of Period	Additions Charged (Credited) to Expense	Deductions / Other Additions to Reserve	Effects of Foreign Currency	Acquired Allowances	Balance at End of Period
Allowance for Doubtful Accounts:						
Year Ended December 31, 2017	$ 51.6	$13.6	$ (5.1)	$ 0.1	$ –	$ 60.2
Year Ended December 31, 2018	60.2	10.7	(3.6)	(1.6)	–	65.7
Year Ended December 31, 2019	65.7	5.5	(5.3)	(0.9)	–	65.0
Deferred Tax Asset Valuation Allowances:						
Year Ended December 31, 2017	$ 88.3	$41.3	$(10.3)	$ 2.8	$18.5	$140.6
Year Ended December 31, 2018	140.6	48.2	206.2[1]	(4.1)	–	390.9
Year Ended December 31, 2019	390.9	(6.6)	165.7[1]	(3.9)	–	546.1

(1) Primarily relate to amounts generated by tax rate changes or current year activity which have offsetting changes to the associated attribute and therefore there is no resulting impact on tax expense in the consolidated financial statements.

Other financial statement schedules are omitted because they are not applicable or the required information is shown in the financial statements or the notes thereto.

3. Exhibits

INDEX TO EXHIBITS

Exhibit No	Description
3.1	Restated Certificate of Incorporation of Zimmer Biomet Holdings, Inc., dated June 24, 2015 (incorporated by reference to Exhibit 3.2 to the Registrant's Current Report on Form 8-K filed June 26, 2015)
3.2	Restated By-Laws of Zimmer Biomet Holdings, Inc. dated October 11, 2019 (incorporated by reference to Exhibit 3.1 to the Registrant's Current Report on Form 8-K filed October 11, 2019)
4.1	Description of Securities Registered under Section 12 of the Securities Exchange Act of 1934
4.2	Specimen Common Stock Certificate (incorporated by reference to Exhibit 4.1 to the Registrant's Quarterly Report on Form 10-Q filed August 5, 2019)
4.3	Indenture dated as of November 17, 2009 between Zimmer Holdings, Inc. (now known as Zimmer Biomet Holdings, Inc.) and Wells Fargo Bank, National Association, as Trustee (incorporated by reference to Exhibit 4.1 to the Registrant's Current Report on Form 8-K filed December 13, 2016)
4.4	First Supplemental Indenture to the Indenture dated as of November 17, 2009 between Zimmer Holdings, Inc. and Wells Fargo Bank, National Association, as Trustee (incorporated by reference to Exhibit 4.2 to the Registrant's Current Report on Form 8-K filed November 17, 2009)
4.5	Form of 5.750% Note due 2039 (incorporated by reference to Exhibit 4.4 above)
4.6	Second Supplemental Indenture dated as of November 10, 2011, to the Indenture dated as of November 17, 2009 between Zimmer Holdings, Inc. and Wells Fargo Bank, National Association, as Trustee (incorporated by reference to Exhibit 4.1 to the Registrant's Current Report on Form 8-K filed November 10, 2011)
4.7	Form of 3.375% Note due 2021 (incorporated by reference to Exhibit 4.6 above)
4.8	Third Supplemental Indenture, dated as of March 19, 2015, to the Indenture dated as of November 17, 2009 between Zimmer Holdings, Inc. and Wells Fargo Bank, National Association, as Trustee (incorporated by reference to Exhibit 4.1 to the Registrant's Current Report on Form 8-K filed March 19, 2015)
4.9	Form of 2.700% Notes due 2020 (incorporated by reference to Exhibit 4.8 above)
4.10	Form of 3.150% Notes due 2022 (incorporated by reference to Exhibit 4.8 above)
4.11	Form of 3.550% Notes due 2025 (incorporated by reference to Exhibit 4.8 above)
4.12	Form of 4.250% Notes due 2035 (incorporated by reference to Exhibit 4.8 above)
4.13	Form of 4.450% Notes due 2045 (incorporated by reference to Exhibit 4.8 above)
4.14	Fourth Supplemental Indenture, dated as of December 13, 2016, between Zimmer Biomet Holdings, Inc. and Wells Fargo Bank, National Association, as Trustee (incorporated by reference to Exhibit 4.2 to the Registrant's Current Report on Form 8-K filed December 13, 2016)
4.15	Form of 1.414% Notes due 2022 (incorporated by reference to Exhibit 4.14 above)
4.16	Form of 2.425% Notes due 2026 (incorporated by reference to Exhibit 4.14 above)
4.17	Agency Agreement, dated as of December 13, 2016, by and among Zimmer Biomet Holdings, Inc., as issuer, Elavon Financial Services DAC, UK Branch, as paying agent, Elavon Financial Services DAC, as registrar and transfer agent, and Wells Fargo Bank, National Association, as Trustee (incorporated by reference to Exhibit 4.3 to the Registrant's Current Report on Form 8-K filed December 13, 2016)
4.18	Amendment No. 1, dated as of January 4, 2017, to the Agency Agreement dated as of December 13, 2016, by and among Zimmer Biomet Holdings, Inc., as issuer, Elavon Financial Services DAC, UK Branch, as paying agent, Elavon Financial Services DAC, as original registrar and original transfer agent, U.S. Bank National Association, as successor registrar and successor transfer agent, and Wells Fargo Bank, National Association, as Trustee (incorporated by reference to Exhibit 4.4 to the Registrant's Registration Statement on Form 8-A filed January 4, 2017)
4.19	Fifth Supplemental Indenture, dated as of March 19, 2018, between Zimmer Biomet Holdings, Inc. and Wells Fargo Bank, National Association, as Trustee (incorporated by reference to Exhibit 4.2 to the Registrant's Current Report on Form 8-K filed March 19, 2018)
4.20	Form of Floating Rate Notes due 2021 (incorporated by reference to Exhibit 4.19 above)
4.21	Form of 3.700% Notes due 2023 (incorporated by reference to Exhibit 4.19 above)
4.22	Sixth Supplemental Indenture, dated as of November 15, 2019, between Zimmer Biomet Holdings, Inc. and Wells Fargo Bank, National Association, as Trustee (incorporated by reference to Exhibit 4.2 to the Registrant's Current Report on Form 8-K filed November 15, 2019)

Exhibit No	Description
4.23	Form of 1.164% Notes due 2027 (incorporated by reference to Exhibit 4.22 above)
4.24	Agency Agreement, dated as of November 15, 2019, by and between Zimmer Biomet Holdings, Inc., as issuer, Elavon Financial Services DAC, UK Branch, as paying agent, U.S. Bank National Association, as transfer agent and registrar, and Wells Fargo Bank, National Association, as trustee (incorporated by reference to Exhibit 4.3 to the Registrant's Current Report on Form 8-K filed on November 15, 2019)
10.1*	Zimmer Biomet Holdings, Inc. Executive Performance Incentive Plan, as amended May 7, 2013 and further amended as of June 24, 2015 (incorporated by reference to Exhibit 10.4 to the Registrant's Quarterly Report on Form 10-Q filed November 9, 2015)
10.2*	Amendment to Zimmer Biomet Holdings, Inc. Executive Performance Incentive Plan (incorporated by reference to Exhibit 10.1 to the Registrant's Current Report on Form 8-K filed January 7, 2016)
10.3*	Zimmer Biomet Deferred Compensation Plan (incorporated by reference to Exhibit 10.3 to the Registrant's Current Report on Form 8-K filed January 7, 2016)
10.4*	Restated Zimmer Biomet Holdings, Inc. Long Term Disability Income Plan for Highly Compensated Employees (incorporated by reference to Exhibit 10.4 to the Registrant's Current Report on Form 8-K filed January 7, 2016)
10.5*	Restated Benefit Equalization Plan of Zimmer Holdings, Inc. and Its Subsidiary or Affiliated Corporations Participating in the Zimmer Holdings, Inc. Savings and Investment Program (incorporated by reference to Exhibit 10.16 to the Registrant's Annual Report on Form 10-K filed February 27, 2009)
10.6*	First Amendment to the Restated Benefit Equalization Plan of Zimmer Holdings, Inc. and its Subsidiary or Affiliated Corporations Participating in the Zimmer Holdings, Inc. Savings and Investment Program (incorporated by reference to Exhibit 10.2 to the Registrant's Current Report on Form 8-K filed January 7, 2016)
10.7*	Offer Letter, dated as of December 18, 2017, by and between Zimmer Biomet Holdings, Inc. and Bryan C. Hanson (incorporated by reference to Exhibit 10.1 to the Registrant's Current Report on Form 8-K filed December 21, 2017)
10.8*	Change in Control Severance Agreement with Bryan C. Hanson (incorporated by reference to Exhibit 10.2 to the Registrant's Current Report on Form 8-K filed December 21, 2017)
10.9*	Chief Executive Officer Confidentiality, Intellectual Property, Non-Competition and Non-Solicitation Agreement with Bryan C. Hanson (incorporated by reference to Exhibit 10.3 to the Registrant's Current Report on Form 8-K filed December 21, 2017)
10.10*	Offer Letter by and between Zimmer Biomet Holdings, Inc. and Ivan Tornos dated as of October 11, 2018 (incorporated by reference to Exhibit 10.10 to the Registrant's Annual Report on Form 10-K filed February 26, 2019)
10.11*	Form of Change in Control Severance Agreement with Suketu Upadhyay, Ivan Tornos and Carrie Nichol (incorporated by reference to Exhibit 10.11 to the Registrant's Annual Report on Form 10-K filed February 26, 2019)
10.12*	Form of Confidentiality, Non-Competition and Non-Solicitation Agreement with Suketu Upadhyay, Ivan Tornos and Carrie Nichol (incorporated by reference to Exhibit 10.12 to the Registrant's Annual Report on Form 10-K filed February 26, 2019)
10.13*	Swiss Employment Agreement by and between Zimmer GmbH and Didier Deltort dated as of June 28, 2018 (incorporated by reference to Exhibit 10.1 to the Quarterly Report on Form 10-Q filed November 1, 2018)
10.14*	Offer Letter by and between Zimmer Biomet Holdings, Inc. and Didier Deltort dated as of June 28, 2018 (incorporated by reference to Exhibit 10.2 to the Quarterly Report on Form 10-Q filed November 1, 2018)
10.15*	Change in Control Severance Agreement by and between Zimmer GmbH and Didier Deltort dated as of October 9, 2018 (incorporated by reference to Exhibit 10.4 to the Quarterly Report on Form 10-Q filed November 1, 2018)
10.16*	Confidentiality, Non-Competition and Non-Solicitation Agreement by and between Zimmer GmbH and Didier Deltort dated as of June 28, 2018 (incorporated by reference to Exhibit 10.3 to the Quarterly Report on Form 10-Q filed November 1, 2018)
10.17*	Form of Change in Control Severance Agreement with Daniel P. Florin (incorporated by reference to Exhibit 10.1 to the Registrant's Quarterly Report on Form 10-Q filed August 10, 2015)
10.18*	Change in Control Severance Agreement with Sang Yi (incorporated by reference to Exhibit 10.1 to the Registrant's Quarterly Report on Form 10-Q filed November 9, 2015)
10.19*	Form of Change in Control Severance Agreement with Chad F. Phipps (incorporated by reference to Exhibit 10.13 to the Registrant's Annual Report on Form 10-K filed February 27, 2009)
10.20*	Offer Letter between Zimmer Biomet Holdings, Inc. and Suketu Upadhyay dated June 13, 2019 (incorporated by reference to Exhibit 10.1 to the Registrant's Current Report on Form 8-K filed June 19, 2019)

Exhibit No	Description
10.21*	Form of Confidentiality, Non-Competition and Non-Solicitation Agreement with Daniel P. Florin (incorporated by reference to Exhibit 10.5 to the Registrant's Quarterly Report on Form 10-Q filed November 6, 2017)
10.22*	Confidentiality, Non-Competition and Non-Solicitation Agreement with Sang Yi (incorporated by reference to Exhibit 10.2 to the Registrant's Quarterly Report on Form 10-Q filed November 9, 2015)
10.23*	Form of Confidentiality, Non-Competition and Non-Solicitation Agreement with Chad F. Phipps (incorporated by reference to Exhibit 10.3 to the Registrant's Current Report on Form 8-K filed June 26, 2015)
10.24*	Restated Zimmer Biomet Holdings, Inc. Executive Severance Plan (incorporated by reference to Exhibit 10.1 to the Registrant's Quarterly Report on Form 10-Q filed August 6, 2018)
10.25*	Zimmer Biomet Holdings, Inc. Amended Stock Plan for Non-Employee Directors, as amended May 5, 2015 and further amended as of June 24, 2015 (incorporated by reference to Exhibit 10.5 to the Registrant's Quarterly Report on Form 10-Q filed November 9, 2015)
10.26*	Form of Nonqualified Stock Option Award Letter under the Zimmer Biomet Holdings, Inc. Stock Plan for Non-Employee Directors (incorporated by reference to Exhibit 10.2 to the Registrant's Current Report on Form 8-K filed April 5, 2005)
10.27*	Form of Restricted Stock Unit Award Letter under the Zimmer Biomet Holdings, Inc. Stock Plan for Non-Employee Directors (incorporated by reference to Exhibit 10.23 to the Registrant's Annual Report on Form 10-K filed February 29, 2016)
10.28*	Amended and Restated Zimmer Biomet Holdings, Inc. Deferred Compensation Plan for Non-Employee Directors, as amended May 5, 2015 and further amended as of June 24, 2015 (incorporated by reference to Exhibit 10.6 to the Registrant's Quarterly Report on Form 10-Q filed November 9, 2015)
10.29*	Form of Indemnification Agreement with Non-Employee Directors and Officers (incorporated by reference to Exhibit 10.1 to the Registrant's Current Report on Form 8-K filed July 31, 2008)
10.30*	Zimmer Biomet Holdings, Inc. Executive Physical Sub Plan (incorporated by reference to Exhibit 10.47 to the Registrant's Annual Report on Form 10-K filed February 26, 2019)
10.31*	Zimmer Biomet Holdings, Inc. 2009 Stock Incentive Plan (As Amended on May 3, 2016) (incorporated by reference to Exhibit 10.1 to the Registrant's Current Report on Form 8-K filed May 9, 2016)
10.32*	Form of Nonqualified Stock Option Award Agreement (four-year vesting) under the Zimmer Biomet Holdings, Inc. 2009 Stock Incentive Plan
10.33*	Form of Nonqualified Stock Option Award Agreement (two-year vesting) under the Zimmer Biomet Holdings, Inc. 2009 Stock Incentive Plan (incorporated by reference to Exhibit 10.37 to the Registrant's Annual Report on Form 10-K filed February 27, 2018)
10.34*	Form of Performance-Based Restricted Stock Unit Award Agreement under the Zimmer Biomet Holdings, Inc. 2009 Stock Incentive Plan (incorporated by reference to Exhibit 10.31 to the Registrant's Annual Report on Form 10-K filed February 29, 2016)
10.35*	Form of Performance-Based Restricted Stock Unit Award Agreement (2018) under the Zimmer Biomet Holdings, Inc. 2009 Stock Incentive Plan (incorporated by reference to Exhibit 10.1 to the Registrant's Quarterly Report on Form 10-Q filed May 8, 2018)
10.36*	Form of Performance-Based Restricted Stock Unit Award Agreement (2019) under the Zimmer Biomet Holdings, Inc. 2009 Stock Incentive Plan (incorporated by reference to Exhibit 10.36 to the Registrant's Annual Report on Form 10-K filed February 26, 2019)
10.37*	Form of Performance-Based Restricted Stock Unit Award Agreement (2020) under the Zimmer Biomet Holdings, Inc. 2009 Stock Incentive Plan
10.38*	Form of Restricted Stock Unit Award Agreement (four-year vesting) under the Zimmer Biomet Holdings, Inc. 2009 Stock Incentive Plan
10.39*	Form of Restricted Stock Unit Award Agreement (two-year cliff vesting) under the Zimmer Biomet Holdings, Inc. 2009 Stock Incentive Plan (incorporated by reference to Exhibit 10.2 to the Quarterly Report on Form 10-Q filed August 6, 2018)
10.40*	Form of Nonqualified Stock Option Award Agreement (Hanson one-time award) under the Zimmer Biomet Holdings, Inc. 2009 Stock Incentive Plan (incorporated by reference to Exhibit 10.4 to the Registrant's Current Report on Form 8-K filed December 21, 2017)
10.41*	Form of Performance-Based Restricted Stock Unit Award Agreement (Hanson one-time award) under the Zimmer Biomet Holdings, Inc. 2009 Stock Incentive Plan (incorporated by reference to Exhibit 10.5 to the Registrant's Current Report on Form 8-K filed December 21, 2017)

Exhibit No	Description
10.42*	Form of Restricted Stock Unit Award Agreement (Hanson one-time award) under the Zimmer Biomet Holdings, Inc. 2009 Stock Incentive Plan (incorporated by reference to Exhibit 10.6 to the Registrant's Current Report on Form 8-K filed December 21, 2017)
10.43*	Form of Performance-Based Restricted Stock Unit Award Agreement (Upadhyay one-time award) under the Zimmer Biomet Holdings, Inc. 2009 Stock Incentive Plan
10.44*	Aircraft Time Sharing Agreement by and between Zimmer, Inc. and Bryan C. Hanson (incorporated by reference to Exhibit 10.40 to the Registrant's Annual Report on Form 10-K filed February 27, 2018)
10.45*	First Amendment to Aircraft Time Sharing Agreement by and between Zimmer, Inc. and Bryan C. Hanson (incorporated by reference to Exhibit 10.1 to the Registrant's Quarterly Report on Form 10-Q filed August 5, 2019)
10.46	Credit Agreement, dated as of November 1, 2019, among Zimmer Biomet Holdings, Inc., Zimmer Biomet G.K., Zimmer Luxembourg II S.À.R.L., the other borrowing subsidiaries referred to therein, JPMorgan Chase Bank, N.A., as General Administrative Agent, JPMorgan Chase Bank, N.A., Tokyo Branch, as Japanese Administrative Agent, J.P. Morgan Europe Limited, as European Administrative Agent, and the lenders party thereto (incorporated by reference to Exhibit 10.1 to the Registrant's Quarterly Report on Form 10-Q filed November 5, 2019)
10.47	Term Loan Agreement ¥21,300,000,000, dated as of September 22, 2017, between Zimmer Biomet G.K. and Sumitomo Mitsui Banking Corporation (incorporated by reference to Exhibit 10.1 to the Registrant's Current Report on Form 8-K filed September 28, 2017)
10.48	Amended and Restated Term Loan Agreement ¥11,700,000,000, dated as of September 22, 2017, between Zimmer Biomet G.K. and Sumitomo Mitsui Banking Corporation (incorporated by reference to Exhibit 10.2 to the Registrant's Current Report on Form 8-K filed September 28, 2017)
10.49	First Amendment, dated as of April 23, 2018, to the Amended and Restated Term Loan Agreement ¥11,700,000,000 dated as of September 22, 2017 between Zimmer Biomet G.K. and Sumitomo Mitsui Banking Corporation
10.50	Amended and Restated Letter of Guarantee, dated as of September 22, 2017, made by Zimmer Biomet Holdings, Inc. in favor of Sumitomo Mitsui Banking Corporation (incorporated by reference to Exhibit 10.3 to the Registrant's Current Report on Form 8-K filed September 28, 2017)
10.51	Credit Agreement, dated as of December 14, 2018, among Zimmer Biomet Holdings, Inc., Bank of America, N.A., as Administrative Agent, and the lenders from time to time party thereto (incorporated by reference to Exhibit 10.1 to the Registrant's Current Report on Form 8-K filed December 20, 2018)
10.52	Deferred Prosecution Agreement, dated as of January 12, 2017, between Zimmer Biomet Holdings, Inc. and the U.S. Department of Justice, Criminal Division, Fraud Section (incorporated by reference to Exhibit 10.1 to the Registrant's Current Report on Form 8-K filed January 18, 2017)
10.53	Order Instituting Cease-and-Desist Proceedings Pursuant to Section 21C of the Securities Exchange Act of 1934, Making Findings and Imposing a Cease-and-Desist Order against Biomet, Inc., dated January 12, 2017 (incorporated by reference to Exhibit 10.2 to the Registrant's Current Report on Form 8-K filed January 18, 2017)
10.54	Plea Agreement, dated as of January 12, 2017, between JERDS Luxembourg Holding S.à r.l. and the U.S. Department of Justice, Criminal Division, Fraud Section (incorporated by reference to Exhibit 10.3 to the Registrant's Current Report on Form 8-K filed January 18, 2017)
21	List of Subsidiaries of Zimmer Biomet Holdings, Inc.
23	Consent of PricewaterhouseCoopers LLP
31.1	Certification pursuant to Rule 13a-14(a)/15d-14(a) of the Securities Exchange Act of 1934 of the Chief Executive Officer, as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002
31.2	Certification pursuant to Rule 13a-14(a)/15d-14(a) of the Securities Exchange Act of 1934 of the Chief Financial Officer, as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002
32	Certification pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002
101	Inline XBRL Instance Document – the instance document does not appear in the Interactive Data File because XBRL tags are embedded within the Inline XBRL document.
101.SCH	Inline XBRL Taxonomy Extension Schema Document
101.CAL	Inline XBRL Taxonomy Extension Calculation Linkbase Document
101.DEF	Inline XBRL Taxonomy Extension Definition Linkbase Document
101.LAB	Inline XBRL Taxonomy Extension Label Linkbase Document

Exhibit No	Description
101.PRE	Inline XBRL Taxonomy Extension Presentation Linkbase Document
104	Cover Page Interactive Data File (formatted as Inline XBRL and contained in Exhibit 101)

* Management contract or compensatory plan or arrangement.

Item 16. **Form 10-K Summary**

None

SIGNATURES

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

ZIMMER BIOMET HOLDINGS, INC.

By: /s/ Bryan Hanson
Bryan Hanson
President and Chief Executive Officer

Dated: February 21, 2020

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

SIGNATURE	TITLE	DATE
/s/ Bryan Hanson Bryan Hanson	President, Chief Executive Officer and Director (Principal Executive Officer)	February 21, 2020
/s/ Suketu Upadhyay Suketu Upadhyay	Executive Vice President and Chief Financial Officer (Principal Financial Officer)	February 21, 2020
/s/ Carrie Nichol Carrie Nichol	Vice President, Controller and Chief Accounting Officer (Principal Accounting Officer)	February 21, 2020
/s/ Christopher Begley Christopher Begley	Director	February 21, 2020
/s/ Betsy Bernard Betsy Bernard	Director	February 21, 2020
/s/ Gail Boudreaux Gail Boudreaux	Director	February 21, 2020
/s/ Michael Farrell Michael Farrell	Director	February 21, 2020
/s/ Larry Glasscock Larry Glasscock	Director	February 21, 2020
/s/ Robert Hagemann Robert Hagemann	Director	February 21, 2020
/s/ Arthur Higgins Arthur Higgins	Director	February 21, 2020
 Maria Teresa Hilado	Director	February 21, 2020
/s/ Syed Jafry Syed Jafry	Director	February 21, 2020
/s/ Michael Michelson Michael Michelson	Director	February 21, 2020

ZIMMER BIOMET HOLDINGS, INC.
RECONCILIATION OF OPERATING PROFIT TO ADJUSTED OPERATING PROFIT
FOR THE YEARS ENDED DECEMBER 31, 2019, 2018, 2017, 2016 and 2015
(in millions, unaudited)

	For the Years Ended December 31,				
	2019	2018	2017	2016	2015[1]
Operating Profit	$1,137.5	$ 33.8	$ 799.3	$ 821.1	$ 467.3
Inventory step-up and other inventory and manufacturing related charges[2]	53.9	32.5	70.8	468.3	348.8
Intangible asset amortization[2]	584.3	595.9	603.9	565.9	337.4
Goodwill and intangible asset impairment[2]	70.1	979.7	331.5	31.1	–
Quality remediation[2]	87.6	165.4	195.1	54.3	–
Restructuring and other cost reduction initiatives[2]	50.0	34.2	17.6	–	–
Acquisition, integration and related[2]	12.2	99.5	262.2	504.9	–
Litigation[2]	65.0	186.0	104.0	33.3	–
Litigation settlement gain[2]	(23.5)	—	–	–	–
European Union Medical Device Regulation[2]	30.9	3.7	–	–	–
Other charges[2]	120.5	79.6	41.2	(11.0)	–
Certain claims	–	–	–	–	7.7
Special items	–	–	–	–	831.8
Adjusted Operating Profit	$2,188.5	$2,210.3	$2,425.6	$2,467.9	$1,993.0

(1) In 2018, we reclassified expenses that were previously recognized in a financial statement line item labeled "Acquisition, quality remediation and other" (and prior to that, labeled "Special items") to the financial statement line items of "Research and development," "Selling, general and administrative," "Goodwill and intangible asset impairment," "Acquisition, integration and related" and "Quality remediation". We reclassified 2017 and 2016 to conform to the current year presentation, however, 2015 was not reclassified. We made this change to provide additional transparency and better reflect the nature of these expenses.

(2) Please refer to pages 30 and 31 of this annual report for detailed explanations of each adjustment.

ZIMMER BIOMET HOLDINGS, INC.
RECONCILIATION OF OPERATING PROFIT MARGIN TO ADJUSTED OPERATING PROFIT MARGIN FOR THE YEARS ENDED DECEMBER 31, 2019, 2018, 2017, 2016 and 2015
(in millions, unaudited)

	For the Years Ended December 31,				
	2019	2018	2017	2016	2015[1]
Operating Profit	14.2%	0.4%	10.2%	10.7%	7.8%
Inventory step-up and other inventory					
and manufacturing related charges[2]	0.7	0.4	0.9	6.1	5.8
Intangible asset amortization[2]	7.3	7.5	7.7	7.4	5.6
Goodwill and intangible asset impairment[2]	0.9	12.4	4.2	0.4	–
Quality remediation[2]	1.1	2.1	2.5	0.7	–
Restructuring and other cost reduction initiatives[2]	0.6	0.4	0.2	–	–
Acquisition, integration and related[2]	0.2	1.3	3.4	6.6	–
Litigation[2]	0.8	2.3	1.3	0.4	–
Litigation settlement gain[2]	(0.3)	–	–	–	–
European Union Medical Device Regulation[2]	0.4	–	–	–	–
Other charges[2]	1.5	1.1	0.7	(0.1)	–
Certain claims	–	–	–	–	0.1
Special items	–	–	–	–	13.9
Adjusted Operating Profit	27.4%	27.9%	31.1%	32.2%	33.2%

(1) In 2018, we reclassified expenses that were previously recognized in a financial statement line item labeled "Acquisition, quality remediation and other" (and prior to that, labeled "Special items") to the financial statement line items of "Research and development," "Selling, general and administrative," "Goodwill and intangible asset impairment," "Acquisition, integration and related" and "Quality remediation". We reclassified 2017 and 2016 to conform to the current year presentation, however, 2015 was not reclassified. We made this change to provide additional transparency and better reflect the nature of these expenses.

(2) Please refer to pages 30 and 31 of this annual report for detailed explanations of each adjustment.

ZIMMER BIOMET HOLDINGS, INC.
RECONCILIATION OF DILUTED EPS TO ADJUSTED DILUTED EPS
FOR THE YEARS ENDED DECEMBER 31, 2019, 2018, 2017, 2016 and 2015
(unaudited)

	For the Years Ended December 31,				
	2019	2018	2017	2016	2015[1]
Diluted Earnings (Loss) per share	$ 5.47	$(1.86)	$ 8.90	$ 1.51	$ 0.77
Inventory step-up and other inventory and manufacturing related charges[2]	0.26	0.16	0.35	2.32	1.84
Intangible asset amortization[2]	2.83	2.93	2.96	2.80	1.78
Goodwill and intangible asset impairment[2]	0.34	4.81	1.63	0.15	–
Quality remediation[2]	0.42	0.81	0.96	0.27	–
Restructuring and other cost reduction initiatives[2]	0.24	0.17	0.09	–	–
Acquisition, integration and related[2]	0.06	0.49	1.28	2.49	–
Litigation[2]	0.31	0.91	0.51	0.16	–
Litigation settlement gain[2]	(0.11)	–	–	–	–
European Union Medical Device Regulation[2]	0.15	0.02	–	–	–
Other charges[2]	0.58	0.41	0.22	(0.03)	–
Certain claims	–	–	–	–	0.04
Special items	–	–	–	–	4.38
Debt extinguishment cost	–	–	–	0.26	0.12
Interest expense on Biomet merger financing	–	–	–	–	0.37
Taxes on above items[2]	(1.09)	(1.18)	(2.07)	(2.22)	(2.57)
Biomet merger-related measurement period tax adjustments	–	–	–	0.26	–
U.S. tax reform[2]	–	0.04	(6.25)	–	–
Switzerland tax reform[2]	(1.52)	–	–	–	–
Other certain tax adjustments[2]	(0.07)	(0.02)	(0.55)	(0.01)	0.17
Effect of dilutive shares assuming net earnings[2]	–	(0.05)	–	–	–
Adjusted Diluted EPS	$ 7.87	$ 7.64	$ 8.03	$ 7.96	$ 6.90

(1) In 2018, we reclassified expenses that were previously recognized in a financial statement line item labeled "Acquisition, quality remediation and other" (and prior to that, labeled "Special items") to the financial statement line items of "Research and development," "Selling, general and administrative," "Goodwill and intangible asset impairment," "Acquisition, integration and related" and "Quality remediation". We reclassified 2017 and 2016 to conform to the current year presentation, however, 2015 was not reclassified. We made this change to provide additional transparency and better reflect the nature of these expenses.

(2) Please refer to pages 30 and 31 of this annual report for detailed explanations of each adjustment.

ZIMMER BIOMET HOLDINGS, INC.
RECONCILIATION OF SALES GROWTH RATE TO CONSTANT CURRENCY SALES GROWTH RATE FOR THE YEAR ENDED DECEMBER 31, 2019
(unaudited)

	For the Year Ended December 31, 2019		
	Reported % Growth	Foreign Exchange Impact	Constant Currency % Growth
Geographic Segment			
Americas	1%	–%	1%
EMEA	(3)	(5)	2
Asia Pacific	5	(2)	7
Consolidated	1	(1)	2
Product Category			
Knees	1	(2)	3
Hips	1	(2)	3
S.E.T.	3	(1)	4
Spine & CMF	(2)	(1)	(1)
Dental	1	(1)	2
Other	(10)	(1)	(9)
Consolidated	1	(1)	2

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Corporate Information (As of March 20, 2020)

Shareholder Information

Headquarters
Zimmer Biomet Holdings, Inc.
345 East Main Street
Warsaw, IN 46580, U.S.A.
+1-574-267-6131
www.zimmerbiomet.com

Stock Listing
Zimmer Biomet is listed on the
New York Stock Exchange and the
SIX Swiss Exchange under the symbol ZBH.

Independent Auditors
PricewaterhouseCoopers LLP
Chicago, IL, U.S.A.

Transfer Agent
Communications concerning stock transfer requirements, loss of certificates and change of address should be directed to Zimmer Biomet's Transfer Agent:

Computershare
462 South 4th Street, Suite 1600
Louisville, KY 40202
+1-888-552-8493 (domestic)
+1-718-575-3336 (international)
Website: www.computershare.com

Investor Relations
Zimmer Biomet invites shareholders, security analysts, portfolio managers and other interested parties to contact:

Keri Mattox
+1-215-275-2431
keri.mattox@zimmerbiomet.com

Cole Lannum
+1-508-409-9366
cole.lannum@zimmerbiomet.com

Dividend Reinvestment and Stock Purchase Plan

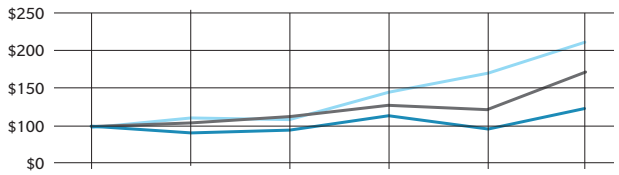
Computershare Trust Company, N.A. administers the Computershare CIP, a direct stock purchase and dividend reinvestment plan, which allows registered shareholders to purchase additional shares of Zimmer Biomet common stock through the automatic reinvestment of dividends. The plan also allows registered shareholders to purchase shares with optional cash investments of at least $25. The minimum initial investment for new investors is $10,000. Existing registered shareholders as well as new investors may enroll in the plan online at www.computershare.com/investor, or by completing and submitting an enrollment form that may be obtained by contacting Computershare at the address or telephone numbers shown above.

ZBH LISTED NYSE SIX SWISS EXCHANGE

Stock Performance Graph

Comparison of Cumulative Total Return for years ended December 31

Assumes $100 was invested on December 31, 2014 in Zimmer Biomet common stock and each index and that dividends were reinvested. Returns over the indicated period should not be considered indicative of future returns.



	Baseline	2015	2016	2017	2018	2019
Zimmer Biomet Holdings, Inc.	$100	$91	$93	$109	$95	$137
S&P 500 Stock Index	$100	$101	$114	$138	$132	$174
S&P 500 Health Care Equipment Index	$100	$106	$113	$148	$172	$222

To obtain a free copy of Zimmer Biomet's annual report on form 10-K, quarterly reports on form 10-Q, news releases, earnings releases, proxy statements, or to obtain Zimmer Biomet's financial calendar, access SEC filings, listen to earnings calls, or to look up Zimmer Biomet stock quotes, please visit http://investor.zimmerbiomet.com.

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