CATERPILLAR INC
Form 10-K
February 15, 2018
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UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 10-K

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

For the fiscal year ended December 31, 2017

OR

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

For the transition period from to .

Commission File No. 1-768

CATERPILLAR INC.
(Exact name of Registrant as specified in its charter)

Delaware	37-0602744
(State or other jurisdiction of incorporation)	(IRS Employer I.D. No.)
510 Lake Cook Road, Suite 100, Deerfield, Illinois	60015
(Address of principal executive offices)	(Zip Code)

Registrant's telephone number, including area code: (224) 551-4000

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

Title of each class	Name of each exchange on which registered
Common Stock ($1.00 par value) (1)	New York Stock Exchange
9 3/8% Debentures due March 15, 2021	New York Stock Exchange
8% Debentures due February 15, 2023	New York Stock Exchange
5.3% Debentures due September 15, 2035	New York Stock Exchange

(1) In addition to the New York Stock Exchange, Caterpillar common stock is also listed on stock exchanges in France and Switzerland.

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 ý No o

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 o No ý

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 ý No o

Indicate by check mark whether the Registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes ý No o

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

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Indicate by check mark whether the Registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See the definitions of “large accelerated filer,” “accelerated filer” and “smaller reporting company” in Rule 12b-2 of the Exchange Act. (Check one):

Large accelerated filer	x	Accelerated filer	o
Non-accelerated filer	o	(Do not check if a smaller reporting company)	
		Smaller reporting company	o
		Emerging growth company	o

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. o

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

As of June 30, 2017, there were 590,972,792 shares of common stock of the Registrant outstanding, and the aggregate market value of the voting stock held by non-affiliates of the Registrant (assuming only for purposes of this computation that directors and executive officers may be affiliates) was approximately $63.4 billion.

As of December 31, 2017, there were 597,625,772 shares of common stock of the Registrant outstanding.

Documents Incorporated by Reference

Portions of the documents listed below have been incorporated by reference into the indicated parts of this Form 10-K, as specified in the responses to the item numbers involved.

Part III	2018 Annual Meeting Proxy Statement (Proxy Statement) to be filed with the Securities and Exchange Commission (SEC) within 120 days after the end of the calendar year.

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PART I

Item 1. Business.

General

Originally organized as Caterpillar Tractor Co. in 1925 in the State of California, our company was reorganized as Caterpillar Inc. in 1986 in the State of Delaware. As used herein, the term “Caterpillar,” “we,” “us,” “our” or “the company” refers to Caterpillar Inc. and its subsidiaries unless designated or identified otherwise.

Overview

With 2017 sales and revenues of $45.462 billion, Caterpillar is the world’s leading manufacturer of construction and mining equipment, diesel and natural gas engines, industrial gas turbines and diesel-electric locomotives. The company principally operates through its three primary segments - Construction Industries, Resource Industries and Energy & Transportation - and also provides financing and related services through its Financial Products segment. Caterpillar is also a leading U.S. exporter. Through a global network of independent dealers and direct sales of certain products, Caterpillar builds long-term relationships with customers around the world.

Currently, we have six operating segments, of which four are reportable segments and are described below. Further information about our reportable segments, including geographic information, appears in Note 23 — “Segment information” of Part II, Item 8 "Financial Statements and Supplementary Data."

Categories of Business Organization

1. Machinery, Energy & Transportation — Represents the aggregate total of Construction Industries, Resource Industries, Energy & Transportation and All Other operating segments and related corporate items and eliminations.

2. Financial Products — Primarily includes the company’s Financial Products Segment. This category includes Caterpillar Financial Services Corporation (Cat Financial), Caterpillar Insurance Holdings Inc. (Insurance Services) and their respective subsidiaries.

Other information about our operations in 2017, including certain risks associated with our operations, is included in Part II, Item 7 “Management’s Discussion and Analysis of Financial Condition and Results of Operations.”

Construction Industries

Our Construction Industries segment is primarily responsible for supporting customers using machinery in infrastructure, forestry and building construction. The majority of machine sales in this segment are made in the heavy and general construction, rental, quarry and aggregates markets and mining.

Nature of customer demand for construction machinery varies around the world. Customers in developing economies often prioritize purchase price in making their investment decisions, while customers in developed economies generally weigh productivity and other performance criteria that contribute to lower owning and operating costs over the lifetime of the machine. To meet customer expectations in developing economies, Caterpillar developed differentiated product offerings that target customers in those markets, including our SEM brand machines. We believe that these customer-driven product innovations enable us to compete more effectively in developing economies. The majority of Construction Industries' research and development spending in 2017 focused on the next

generation of construction machines.

The competitive environment for construction machinery is characterized by some global competitors and many regional and specialized local competitors. Examples of global competitors include Komatsu Ltd., Volvo Construction Equipment (part of the Volvo Group), CNH Industrial N.V., Deere & Company, Hitachi Construction Machinery Co., Ltd., J.C. Bamford Excavators Ltd., Doosan Infracore Co., Ltd., Hyundai Construction Equipment Co., Ltd. and Kubota Farm & Industrial Machinery (part of Kubota Corporation). As an example of regional and local competitors, our competitors in China also include Guangxi LiuGong Machinery Co., Ltd., Longking Holdings Ltd., Sany Heavy Industry Co., Ltd., XCMG Group, Shantui Construction Machinery Co., Ltd., (part of Shandong Heavy Industry Group Co.) and Shandong Lingong Construction Machinery Co., Ltd. (SDLG, part of Volvo Group). Each of these companies has varying product lines that compete with Caterpillar products, and each has varying degrees of regional focus.

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The Construction Industries product portfolio includes the following machines and related parts and work tools:

- asphalt pavers
- backhoe loaders
- compactors
- cold planers
- compact truck and multi-terrain loaders
- mini, small, medium and large excavators
- forestry excavators
- feller bunchers
- harvesters
- knuckleboom loaders
- motorgraders
- pipelayers
- road reclaimers
- site prep tractors
- skidders
- skid steer loaders
- telehandlers
- small and medium track-type tractors
- track-type loaders
- wheel excavators
- compact, small and medium wheel loaders

Resource Industries

The Resource Industries segment is primarily responsible for supporting customers using machinery in mining, quarry, waste and material handling applications. Caterpillar offers a broad product range and services to deliver comprehensive solutions for our mining customers. We manufacture high productivity equipment for both surface and underground mining operations around the world. Our equipment is used to extract and haul copper, iron ore, coal, oil sands, aggregates, gold and other minerals and ores. In addition to equipment, Resource Industries also develops and sells technology products and services to provide customers fleet management systems, equipment management analytics and autonomous machine capabilities.

Customers in most markets place an emphasis on equipment that is highly productive, reliable and provides the lowest total cost of ownership over the life of the equipment. In some developing markets, customers often prioritize purchase price in making their investment decisions. We believe our ability to control the integration and design of key machine components represents a competitive advantage. Our research and development efforts remain focused on providing mining and quarry customers the lowest total cost of ownership enabled through the highest quality, most productive products in the industry.

The competitive environment for Resource Industries consists of a few larger global competitors that compete in several of the markets that we serve and a substantial number of smaller companies that compete in a more limited range of products, applications, and regional markets. Our global surface competitors include Komatsu Ltd., Hitachi Construction Machinery Co., Ltd., Volvo Construction Equipment, Atlas Copco AB, Deere & Company, Sandvik AB and Liebherr-International AG. Our global underground competitors include Atlas Copco AB, Liebherr-International AG, Sandvik AB, Komatsu Ltd., and Zhengzhou Coal Mining Machinery Group Co., Ltd.

The Resource Industries product portfolio includes the following machines and related parts:

- electric rope shovels
- draglines
- hydraulic shovels
- rotary drills
- hard rock vehicles
- large track-type tractors
- large mining trucks
- longwall miners
- large wheel loaders
- off-highway trucks
- articulated trucks
- wheel tractor scrapers
- wheel dozers
- landfill compactors
- soil compactors
- machinery components
- electronics and control systems
- select work tools
- hard rock continuous mining systems

Energy & Transportation

Our Energy & Transportation segment supports customers in oil and gas, power generation, marine, rail and industrial applications, including Cat® machines. The product and services portfolio includes reciprocating engines, generator sets, marine propulsion systems, gas turbines and turbine-related services, the remanufacturing of Cat engines and components and remanufacturing services for other companies, diesel-electric locomotives and other rail-related products and services and product support of on-highway vocational trucks for North America.

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Regulatory emissions standards of the U.S. Environmental Protection Agency (EPA) and comparable standards in other developed economies have required us to make significant investments in research and development that will continue as new products and similar regulations are introduced over the next several years. We believe that our emissions technology provides a competitive advantage in connection with emissions standards compliance and performance.

The competitive environment for reciprocating engines in marine, oil and gas, industrial and electric power generation systems along with turbines in oil and gas and electric power generation consists of a few larger global competitors that compete in a variety of markets that Caterpillar serves, and a substantial number of smaller companies that compete in a limited-size product range, geographic region and/or application. Principal global competitors include Cummins Inc., Rolls-Royce Power Systems, GE Power, Siemens Power and Gas, Deutz AG and Wärtsilä Corp. Other competitors, such as MAN Diesel & Turbo SE, Baker Hughes, a GE company, Rolls-Royce Marine, Mitsubishi Heavy Industries Ltd., Volvo Penta, Weichai Power Co., Ltd., Kirloskar Oil Engines Limited and other emerging market competitors compete in certain markets in which Caterpillar competes. An additional set of competitors, including Generac Power Systems, Inc., Kohler Co., Inc., Aggreko plc and others, are primarily packagers who source engines and/or other components from domestic and international suppliers and market products regionally and internationally through a variety of distribution channels. In rail-related businesses, our global competitors include GE Transportation, Vossloh AG, Siemens Akteingesellschaft, Alstom Transport SA, and Voestalpine AG. We also compete with other companies on a more limited range of products, services and/or geographic regions.

The Energy & Transportation portfolio includes the following products and related parts:

- reciprocating engine powered generator sets
- reciprocating engines supplied to the industrial industry as well as Caterpillar machinery
- integrated systems used in the electric power generation industry
- turbines, centrifugal gas compressors and related services
- reciprocating engines and integrated systems and solutions for the marine and oil and gas industries
- remanufactured reciprocating engines and components
- diesel-electric locomotives and components and other rail-related products and services

Financial Products Segment

The business of our Financial Products segment is primarily conducted by Cat Financial, a wholly owned finance subsidiary of Caterpillar. Cat Financial's primary business is to provide retail and wholesale financing alternatives for Caterpillar products to customers and dealers around the world. Retail financing is primarily comprised of the financing of Caterpillar equipment, machinery and engines. Cat Financial also provides financing for vehicles, power generation facilities and marine vessels that, in most cases, incorporate Caterpillar products. In addition to retail financing, Cat Financial provides wholesale financing to Caterpillar dealers and purchases short-term trade receivables from Caterpillar and its subsidiaries. The various financing plans offered by Cat Financial are primarily designed to increase the opportunity for sales of Caterpillar products and generate financing income for Cat Financial. A significant portion of Cat Financial's activity is conducted in North America, with additional offices and subsidiaries in Latin America, Asia/Pacific, Europe, Africa and Middle East.

For over 35 years, Cat Financial has been providing financing in the various markets in which it participates, contributing to its knowledge of asset values, industry trends, product structuring and customer needs.

In certain instances, Cat Financial's operations are subject to supervision and regulation by state, federal and various foreign governmental authorities, and may be subject to various laws and judicial and administrative decisions imposing various requirements and restrictions which, among other things, (i) regulate credit granting activities and

the administration of loans, (ii) establish maximum interest rates, finance charges and other charges, (iii) require disclosures to customers and investors, (iv) govern secured transactions, (v) set collection, foreclosure, repossession and other trade practices and (vi) regulate the use and reporting of information related to a borrower's credit experience. Cat Financial's ability to comply with these and other governmental and legal requirements and restrictions affects its operations.

Cat Financial's retail leases and installment sale contracts (totaling 56 percent*) include:

- Tax leases that are classified as either operating or finance leases for financial accounting purposes, depending on the characteristics of the lease. For tax purposes, Cat Financial is considered the owner of the equipment (12 percent*).

- Finance (non-tax) leases, where the lessee for tax purposes is considered to be the owner of the equipment during the term of the lease, that either require or allow the customer to purchase the equipment for a fixed price at the end of the term (21 percent*).

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- Installment sale contracts, which are equipment loans that enable customers to purchase equipment with a down payment or trade-in and structure payments over time (22 percent*).

- Governmental lease-purchase plans in the U.S. that offer low interest rates and flexible terms to qualified non-federal government agencies (1 percent*).

Cat Financial's wholesale notes receivable, finance leases and installment sale contracts (totaling 14 percent*) include:

- Inventory/rental programs, which provide assistance to dealers by financing their new Caterpillar inventory and rental fleets (3 percent*).

- Short-term receivables Cat Financial purchased from Caterpillar at a discount (11 percent*).

Cat Financial's retail notes receivables (30 percent*) include:

- Loans that allow customers and dealers to use their Caterpillar equipment or other assets as collateral to obtain financing.

*Indicates the percentage of Cat Financial's total portfolio at December 31, 2017. We define total portfolio as total finance receivables (net of unearned income and allowance for credit losses) plus equipment on operating leases, less accumulated depreciation. For more information on the above and Cat Financial's concentration of credit risk, please refer to Note 6 — "Cat Financial Financing Activities" of Part II, Item 8 "Financial Statements and Supplementary Data."

Cat Financial operates in a highly competitive environment, with financing for users of Caterpillar equipment available through a variety of sources, principally commercial banks and finance and leasing companies. Cat Financial's competitors include Wells Fargo Equipment Finance Inc. and various other banks and finance companies. In addition, many of our manufacturing competitors own financial subsidiaries, such as Volvo Financial Services, Komatsu Financial L.P. and John Deere Capital Corporation, that utilize below-market interest rate programs (funded by the manufacturer) to assist machine sales. Caterpillar and Cat Financial work together to provide a broad array of financial merchandising programs around the world to meet these competitive offers.

Cat Financial's financial results are largely dependent upon the ability of Caterpillar dealers to sell equipment and customers' willingness to enter into financing or leasing agreements. It is also affected by, among other things, the availability of funds from its financing sources, general economic conditions such as inflation and market interest rates and its cost of funds relative to its competitors.

Cat Financial has a match-funding policy that addresses interest rate risk by aligning the interest rate profile (fixed or floating rate) of its debt portfolio with the interest rate profile of its receivables portfolio within predetermined ranges on an ongoing basis. In connection with that policy, Cat Financial uses interest rate derivative instruments to modify the debt structure to match assets within the receivables portfolio. This matched funding reduces the volatility of margins between interest-bearing assets and interest-bearing liabilities, regardless of which direction interest rates move. For more information regarding match funding, please see Note 3 — "Derivative financial instruments and risk management" of Part II, Item 8 "Financial Statements and Supplementary Data." See also the risk factors associated with our financial products business included in Item 1 A. of this Form 10-K.

In managing foreign currency risk for Cat Financial's operations, the objective is to minimize earnings volatility resulting from conversion and the remeasurement of net foreign currency balance sheet positions, and future

transactions denominated in foreign currencies. This policy allows the use of foreign currency forward, option and cross currency contracts to offset the risk of currency mismatch between the receivable and debt portfolios, and exchange rate risk associated with future transactions denominated in foreign currencies.

Cat Financial provides financing only when certain criteria are met. Credit decisions are based on a variety of credit quality factors including prior payment experience, customer financial information, credit-rating agency ratings, loan-to-value ratios and other internal metrics. Cat Financial typically maintains a security interest in retail-financed equipment and requires physical damage insurance coverage on financed equipment. Cat Financial finances a significant portion of Caterpillar dealers' sales and inventory of Caterpillar equipment throughout the world. Cat Financial's competitive position is improved by marketing programs offered in conjunction with Caterpillar and/or Caterpillar dealers. Under these programs, Caterpillar, or the

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dealer, funds an amount at the outset of the transaction, which Cat Financial then recognizes as revenue over the term of the financing. We believe that these marketing programs provide Cat Financial a significant competitive advantage in financing Caterpillar products.

Caterpillar Insurance Company, a wholly owned subsidiary of Caterpillar Insurance Holdings Inc., is a U.S. insurance company domiciled in Missouri and primarily regulated by the Missouri Department of Insurance. Caterpillar Insurance Company is licensed to conduct property and casualty insurance business in 50 states, the District of Columbia and Guam, and as such, is also regulated in those jurisdictions. The State of Missouri acts as the lead regulatory authority and monitors Caterpillar Insurance Company's financial status to ensure that it is in compliance with minimum solvency requirements, as well as other financial ratios prescribed by the National Association of Insurance Commissioners. Caterpillar Insurance Company is also licensed to conduct insurance business through a branch in Zurich, Switzerland and, as such, is regulated by the Swiss Financial Market Supervisory Authority.

Caterpillar Life Insurance Company, a wholly owned subsidiary of Caterpillar, is a U.S. insurance company domiciled in Missouri and primarily regulated by the Missouri Department of Insurance. Caterpillar Life Insurance Company is licensed to conduct life and accident and health insurance business in 26 states and the District of Columbia and, as such, is also regulated in those jurisdictions. The State of Missouri acts as the lead regulatory authority and it monitors the financial status to ensure that it is in compliance with minimum solvency requirements, as well as other financial ratios prescribed by the National Association of Insurance Commissioners. Caterpillar Life Insurance Company provides stop loss insurance protection to a Missouri Voluntary Employees' Beneficiary Association (VEBA) trust used to fund medical claims of salaried retirees of Caterpillar under the VEBA.

Caterpillar Insurance Co. Ltd., a wholly owned subsidiary of Caterpillar Insurance Holdings Inc., is a captive insurance company domiciled in Bermuda and regulated by the Bermuda Monetary Authority. Caterpillar Insurance Co. Ltd. is a Class 2 insurer (as defined by the Bermuda Insurance Amendment Act of 1995), which primarily insures its parent and affiliates. The Bermuda Monetary Authority requires an Annual Financial Filing for purposes of monitoring compliance with solvency requirements.

Caterpillar Product Services Corporation (CPSC), a wholly owned subsidiary of Caterpillar, is a warranty company domiciled in Missouri. CPSC previously conducted a machine extended service contract program in Germany and France by providing machine extended warranty reimbursement protection to dealers in Germany and France. The program was discontinued effective January 1, 2013, though CPSC continues to provide extended warranty reimbursement protection under existing contracts.

Caterpillar Insurance Services Corporation, a wholly owned subsidiary of Caterpillar Insurance Holdings Inc., is a Tennessee insurance brokerage company licensed in all 50 states, the District of Columbia and Guam. It provides brokerage services for all property and casualty and life and health lines of business.

Caterpillar's insurance group provides protection for claims under the following programs:

- Contractual Liability Insurance to Caterpillar and its affiliates, Caterpillar dealers and original equipment manufacturers (OEMs) for extended service contracts (parts and labor) offered by Caterpillar, third party dealers and OEMs.
- Cargo insurance for the worldwide cargo risks of Caterpillar products.
- Contractors' Equipment Physical Damage Insurance for equipment manufactured by Caterpillar or OEMs, which is leased, rented or sold by third party dealers to customers.

- General liability, employer’s liability, auto liability and property insurance for Caterpillar.
- Retiree Medical Stop Loss Insurance for medical claims under the VEBA.
- Brokerage services for property and casualty and life and health business.

Acquisitions

Information related to acquisitions appears in Note 24 — “Acquisitions” of Part II, Item 8 "Financial Statements and Supplementary Data."

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Competitive Environment

Caterpillar products and product support services are sold worldwide into a variety of highly competitive markets. In all markets, we compete on the basis of product performance, customer service, quality and price. From time to time, the intensity of competition results in price discounting in a particular industry or region. Such price discounting puts pressure on margins and can negatively impact operating profit. Outside the United States, certain competitors enjoy competitive advantages inherent to operating in their home countries or regions.

Raw Materials and Component Products

We source our raw materials and manufactured components from suppliers both domestically and internationally. These purchases include unformed materials and rough and finished parts. Unformed materials include a variety of steel products, which are then cut or formed to shape and machined in our facilities. Rough parts include various sized steel and iron castings and forgings, which are machined to final specification levels inside our facilities. Finished parts are ready to assemble components, which are made either to Caterpillar specifications or to supplier developed specifications. We machine and assemble some of the components used in our machines, engines and power generation units and to support our after-market dealer parts sales. We also purchase various goods and services used in production, logistics, offices and product development processes. We maintain global strategic sourcing models to meet our global facilities' production needs while building long-term supplier relationships and leveraging enterprise spend. We expect our suppliers to maintain, at all times, industry-leading levels of quality and the ability to timely deliver raw materials and component products for our machine and engine products. However, increases in demand have led to parts and components constraints across some products. We use a variety of agreements with suppliers to protect our intellectual property and processes to monitor and mitigate risks of the supply base causing a business disruption. The risks monitored include supplier financial viability, the ability to increase or decrease production levels, business continuity, quality and delivery.

Patents and Trademarks

We own a number of patents and trademarks, which have been obtained over a period of years and relate to the products we manufacture and the services we provide. These patents and trademarks are generally considered beneficial to our business. We do not regard our business as being dependent upon any single patent or group of patents.

Order Backlog

The dollar amount of backlog believed to be firm was approximately $15.8 billion at December 31, 2017 and $12.1 billion at December 31, 2016. Compared with year-end 2016, the order backlog increased about $3.7 billion. The increase was across all segments, most significantly in Resource Industries and Construction Industries. Of the total backlog at December 31, 2017, approximately $2.9 billion was not expected to be filled in 2018.

Dealers and Distributors

Our machines are distributed principally through a worldwide organization of dealers (dealer network), 48 located in the United States and 123 located outside the United States, serving 192 countries. Reciprocating engines are sold principally through the dealer network and to other manufacturers for use in products. Some of the reciprocating engines manufactured by our subsidiary Perkins Engines Company Limited, are also sold through its worldwide network of 93 distributors covering 182 countries. The FG Wilson branded electric power generation systems primarily manufactured by our subsidiary Caterpillar Northern Ireland Limited are sold through its worldwide

network of 154 distributors covering 131 countries. Some of the large, medium speed reciprocating engines are also sold under the MaK brand through a worldwide network of 20 distributors covering 130 countries.

Our dealers do not deal exclusively with our products; however, in most cases sales and servicing of our products are the dealers' principal business. Some products, primarily turbines and locomotives, are sold directly to end customers through sales forces employed by the company. At times, these employees are assisted by independent sales representatives.

While the large majority of our worldwide dealers are independently owned and operated, we own and operate a dealership in Japan that covers approximately 80% of the Japanese market: Nippon Caterpillar Division. We are currently operating this Japanese dealer directly and its results are reported in the All Other operating segments. There are also three independent dealers in the Southern Region of Japan.

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For Caterpillar branded products, the company's relationship with each of its independent dealers is memorialized in standard sales and service agreements. Pursuant to this agreement, the company grants the dealer the right to purchase and sell its products and to service the products in a specified geographic service territory. Prices to dealers are established by the company after receiving input from dealers on transactional pricing in the marketplace. The company also agrees to defend its intellectual property and to provide warranty and technical support to the dealer. The agreement further grants the dealer a non-exclusive license to use the company's trademarks, service marks and brand names. In some instances, a separate trademark agreement exists between the company and a dealer.

In exchange for these rights, the agreement obligates the dealer to develop and promote the sale of the company's products to current and prospective customers in the dealer's service territory. Each dealer agrees to employ adequate sales and support personnel to market, sell and promote the company's products, demonstrate and exhibit the products, perform the company's product improvement programs, inform the company concerning any features that might affect the safe operation of any of the company's products and maintain detailed books and records of the dealer's financial condition, sales and inventories and make these books and records available at the company's reasonable request.

These sales and service agreements are terminable at will by either party primarily upon 90 days written notice.

Research and Development

We place strong emphasis on product-oriented research and development relating to the development of new or improved machines, engines and major components. In 2017, 2016 and 2015, we spent $1,905 million, $1,951 million and $2,119 million, or 4.2, 5.1 and 4.5 percent of our sales and revenues, respectively, on our research and development programs.

Employment

As of December 31, 2017, we employed about 98,400 full-time persons of whom approximately 56,200 were located outside the United States. In the United States, we employed approximately 42,200 employees, most of whom are at-will employees and, therefore, not subject to any type of employment contract or agreement. At select business units, certain highly specialized employees have been hired under employment contracts that specify a term of employment, pay and other benefits.

Full-Time Employees at Year-End

	2017	2016
Inside U.S.	42,200	40,900
Outside U.S.	56,200	54,500
Total	98,400	95,400
By Region:		
North America	42,400	41,200
EAME	18,100	20,000
Latin America	15,000	11,400
Asia/Pacific	22,900	22,800
Total	98,400	95,400

As of December 31, 2017, there were approximately 8,740 U.S. hourly production employees who were covered by collective bargaining agreements with various labor unions, including The United Automobile, Aerospace and Agricultural Implement Workers of America (UAW), The International Association of Machinists and The United

Steelworkers. Approximately 7,030 of such employees are covered by collective bargaining agreements with the UAW that expire on December 17, 2018 and March 1, 2023. Outside the United States, the company enters into employment contracts and agreements in those countries in which such relationships are mandatory or customary. The provisions of these agreements generally correspond in each case with the required or customary terms in the subject jurisdiction.

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Sales and Revenues

Sales and revenues outside the United States were 59 percent of consolidated sales and revenues for 2017, 2016 and 2015. Additional information related to total sales and revenues and long-lived assets aggregated by our U.S. and non-U.S. operations appears in Note 23 – “Segment information” of Part II, Item 8 “Financial Statements and Supplementary Data”.

Environmental Matters

The company is regulated by federal, state and international environmental laws governing our use, transport and disposal of substances and control of emissions. In addition to governing our manufacturing and other operations, these laws often impact the development of our products, including, but not limited to, required compliance with air emissions standards applicable to internal combustion engines. We have made, and will continue to make, significant research and development and capital expenditures to comply with these emissions standards.

We are engaged in remedial activities at a number of locations, often with other companies, pursuant to federal and state laws. When it is probable we will pay remedial costs at a site, and those costs can be reasonably estimated, the investigation, remediation, and operating and maintenance costs of the remedial action are accrued against our earnings. Costs are accrued based on consideration of currently available data and information with respect to each individual site, including available technologies, current applicable laws and regulations, and prior remediation experience. Where no amount within a range of estimates is more likely, we accrue the minimum. Where multiple potentially responsible parties are involved, we consider our proportionate share of the probable costs. In formulating the estimate of probable costs, we do not consider amounts expected to be recovered from insurance companies or others. We reassess these accrued amounts on a quarterly basis. The amount recorded for environmental remediation is not material and is included in the line item "Accrued expenses" in Statement 3 — "Consolidated Financial Position at December 31" of Part II, Item 8 "Financial Statements and Supplementary Data." There is no more than a remote chance that a material amount for remedial activities at any individual site, or at all the sites in the aggregate, will be required.

Available Information

The company files electronically with the Securities and Exchange Commission (SEC) required reports on Form 8-K, Form 10-Q, Form 10-K and Form 11-K; proxy materials; ownership reports for insiders as required by Section 16 of the Securities Exchange Act of 1934 (Exchange Act); registration statements on Forms S-3 and S-8, as necessary; and other forms or reports as required. The SEC maintains a website (www.sec.gov) that contains reports, proxy and information statements, and other information regarding issuers that file electronically with the SEC. The company maintains a website (www.Caterpillar.com) and copies of our annual report on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K and any amendments to these reports filed or furnished with the SEC are available free of charge through our website (www.Caterpillar.com/secfilings) as soon as reasonably practicable after filing with the SEC. Copies of our board committee charters, our board’s Guidelines on Corporate Governance Issues, Worldwide Code of Conduct and other corporate governance information are available on our website (www.Caterpillar.com/governance). The information contained on the company’s website is not included in, or incorporated by reference into, this annual report on Form 10-K.

Additional company information may be obtained as follows:

Current information -

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phone our Information Hotline - (800) 228-7717 (U.S. or Canada) or (858) 764-9492 (outside U.S. or Canada) to request company publications by mail, listen to a summary of Caterpillar's latest financial results and current outlook, or to request a copy of results

- request, view or download materials on-line or register for email alerts at www.Caterpillar.com/materialsrequest

Historical information -

- view/download on-line at www.Caterpillar.com/historical

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Item 1A. Risk Factors.

The statements in this section describe the most significant risks to our business and should be considered carefully in conjunction with Part II, Item 7 “Management’s Discussion and Analysis of Financial Condition and Results of Operations” and the “Notes to Consolidated Financial Statements” of Part II, Item 8 "Financial Statements and Supplementary Data" to this Form 10-K. In addition, the statements in this section and other sections of this Form 10-K, including in Part II, Item 7 "Management's Discussion and Analysis of Financial Condition and Results of Operations" include “forward-looking statements” as that term is defined in the Private Securities Litigation Reform Act of 1995 and involve uncertainties that could significantly impact results. Forward-looking statements give current expectations or forecasts of future events about the company or our outlook. You can identify forward-looking statements by the fact they do not relate to historical or current facts and by the use of words such as “believe,” “expect,” “estimate,” “anticipate,” “will be,” “should,” “plan,” “project,” “intend,” “could” and similar words or expressions.

Forward-looking statements are based on assumptions and on known risks and uncertainties. Although we believe we have been prudent in our assumptions, any or all of our forward-looking statements may prove to be inaccurate, and we can make no guarantees about our future performance. Should known or unknown risks or uncertainties materialize or underlying assumptions prove inaccurate, actual results could materially differ from past results and/or those anticipated, estimated or projected.

We undertake no obligation to publicly update forward-looking statements, whether as a result of new information, future events or otherwise. You should, however, consult any subsequent disclosures we make in our filings with the SEC on Form 10-Q or Form 8-K.

The following is a cautionary discussion of risks, uncertainties and assumptions that we believe are significant to our business. In addition to the factors discussed elsewhere in this report, the following are some of the important factors that, individually or in the aggregate, we believe could make our actual results differ materially from those described in any forward-looking statements. It is impossible to predict or identify all such factors and, as a result, you should not consider the following factors to be a complete discussion of risks, uncertainties and assumptions.

MACROECONOMIC RISKS

Our business and the industries we serve are highly sensitive to global and regional economic conditions.

Our results of operations are materially affected by economic conditions globally and regionally and in the particular industries we serve. The demand for our products and services tends to be cyclical and can be significantly reduced in periods of economic weakness characterized by lower levels of government and business investment, lower levels of business confidence, lower corporate earnings, high real interest rates, lower credit activity or tighter credit conditions, perceived or actual industry overcapacity, higher unemployment and lower consumer spending. A prolonged period of economic weakness may also result in increased expenses due to higher allowances for doubtful accounts and potential goodwill and asset impairment charges. Economic conditions vary across regions and countries, and demand for our products and services generally increases in those regions and countries experiencing economic growth and investment. Slower economic growth or a change in the global mix of regions and countries experiencing economic growth and investment could have an adverse effect on our business, results of operations and financial condition.

The energy, transportation and mining industries are major users of our products, including the coal, iron ore, gold, copper, oil and natural gas industries. Customers in these industries frequently base their decisions to purchase our products on the expected future performance of these industries, which in turn are dependent in part on commodity prices. Prices of commodities in these industries are frequently volatile and can change abruptly and unpredictably in response to general economic conditions and trends, government actions, regulatory actions, commodity inventories,

production and consumption levels, technological innovations, commodity substitutions, market expectations and any disruptions in production or distribution. Economic conditions affecting the industries we serve may in the future also lead to reduced capital expenditures by our customers. Reduced capital expenditures by our customers are likely to lead to a decrease in the demand for our products and may also result in a decrease in demand for aftermarket parts as customers are likely to extend preventative maintenance schedules and delay major overhauls when possible.

The rates of infrastructure spending, housing starts and commercial construction also play a significant role in our results. Our products are an integral component of these activities, and as these activities decrease, demand for our products may be significantly impacted, which could negatively impact our results.

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Commodity price changes, material price increases, fluctuations in demand for our products, significant disruptions to our supply chains or significant shortages of material may adversely impact our financial results or our ability to meet commitments to customers.

We are a significant user of steel and many other commodities required for the manufacture of our products. Increases in the prices of such commodities would increase our costs, negatively impacting our business, results of operations and financial condition if we are unable to fully offset the effect of these increased costs through price increases, productivity improvements or cost reduction programs.

We rely on suppliers to produce or secure material required for the manufacture of our products. A disruption in deliveries to or from suppliers or decreased availability of raw materials or commodities could have an adverse effect on our ability to meet our commitments to customers or increase our operating costs. The increase in demand in 2017 has led to challenges for certain products due to supplier constraints. Despite improvements in material flows in the second half of 2017, parts and components constraints remain across some products, which could impact our growth potential in 2018 as our global suppliers continue to increase production to meet demand. On the other hand, in circumstances where demand for our products is less than we expect, we may experience excess inventories and be forced to incur additional costs and our profitability may suffer. Our business, competitive position, results of operations or financial condition could be negatively impacted if supply is insufficient for our operations, if we experience excess inventories or if we are unable to adjust our production schedules or our purchases from suppliers to reflect changes in customer demand and market fluctuations on a timely basis.

Changes in government monetary or fiscal policies may negatively impact our results.

Most countries where our products and services are sold have established central banks to regulate monetary systems and influence economic activities, generally by adjusting interest rates. Interest rate changes affect overall economic growth, which affects demand for residential and nonresidential structures, as well as energy and mined products, which in turn affects sales of our products and services that serve these activities. Interest rate changes may also affect our customers' ability to finance machine purchases, can change the optimal time to keep machines in a fleet and can impact the ability of our suppliers to finance the production of parts and components necessary to manufacture and support our products. Increases in interest rates could negatively impact sales and create supply chain inefficiencies.

Central banks and other policy arms of many countries may take actions to vary the amount of liquidity and credit available in an economy. The impact from a change in liquidity and credit policies could negatively affect the customers and markets we serve or our suppliers, which could adversely impact our business, results of operations and financial condition.

Changes in monetary and fiscal policies, along with other factors, may cause currency exchange rates to fluctuate. Actions that lead the currency exchange rate of a country where we manufacture products to increase relative to other currencies could reduce the competitiveness of products made in that country, which could adversely affect our competitive position, results of operations and financial condition.

Government policies on taxes and spending also affect our business. Throughout the world, government spending finances a significant portion of infrastructure development, such as highways, airports, sewer and water systems and dams. Tax regulations determine asset depreciation lives and impact the after-tax returns on business activity and investment, both of which influence investment decisions. Unfavorable developments, such as declines in government revenues, decisions to reduce public spending or increases in taxes, could negatively impact our results.

Our global operations are exposed to political and economic risks, commercial instability and events beyond our control in the countries in which we operate.

Our global operations are dependent upon products manufactured, purchased and sold in the U.S. and internationally, including in countries with political and economic instability or uncertainty. This includes, for example, the uncertainty related to the United Kingdom's withdrawal from the European Union (commonly known as "Brexit"). Some countries have greater political and economic volatility and greater vulnerability to infrastructure and labor disruptions than others. Our business could be negatively impacted by adverse fluctuations in freight costs, limitations on shipping and receiving capacity, and other disruptions in the transportation and shipping infrastructure at important geographic points of exit and entry for our products. Operating in different regions and countries exposes us to a number of risks, including:

- multiple and potentially conflicting laws, regulations and policies that are subject to change;

- imposition of currency restrictions, restrictions on repatriation of earnings or other restraints;

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- imposition of burdensome tariffs or quotas;
- changes in trade agreements;
- imposition of new or additional trade and economic sanctions laws imposed by the U.S. or foreign governments;
- war or terrorist acts; and
- political and economic instability or civil unrest that may severely disrupt economic activity in affected countries.

The occurrence of one or more of these events may negatively impact our business, results of operations and financial condition.

OPERATIONAL RISKS

The success of our business depends on our ability to develop, produce and market quality products that meet our customers' needs.

Our business relies on continued global demand for our brands and products. To achieve business goals, we must develop and sell products that appeal to our dealers, OEMs and end-user customers. This is dependent on a number of factors, including our ability to maintain key dealer relationships, our ability to produce products that meet the quality, performance and price expectations of our customers and our ability to develop effective sales, advertising and marketing programs. In addition, our continued success in selling products that appeal to our customers is dependent on leading-edge innovation, with respect to both products and operations, and on the availability and effectiveness of legal protection for our innovations. Failure to continue to deliver high quality, innovative, competitive products to the marketplace, to adequately protect our intellectual property rights, to supply products that meet applicable regulatory requirements, including engine exhaust emission requirements or to predict market demands for, or gain market acceptance of, our products, could have a negative impact on our business, results of operations and financial condition.

We operate in a highly competitive environment, which could adversely affect our sales and pricing.

We operate in a highly competitive environment. We compete on the basis of a variety of factors, including product performance, customer service, quality and price. There can be no assurance that our products will be able to compete successfully with other companies' products. Thus, our share of industry sales could be reduced due to aggressive pricing or product strategies pursued by competitors, unanticipated product or manufacturing difficulties, our failure to price our products competitively, our failure to produce our products at a competitive cost or an unexpected buildup in competitors' new machine or dealer-owned rental fleets, leading to downward pressure on machine rental rates and/or used equipment prices.

Lack of customer acceptance of price increases we announce from time to time, changes in customer requirements for price discounts, changes in our customers' behavior or a weak pricing environment could have an adverse impact on our business, results of operations and financial condition.

In addition, our results and ability to compete may be impacted negatively by changes in our geographic and product mix of sales.

Increased information technology security threats and more sophisticated computer crime pose a risk to our systems, networks, products and services.

We rely upon information technology systems and networks, some of which are managed by third parties, in connection with a variety of business activities. Additionally, we collect and store data that is sensitive to Caterpillar. Operating these information technology systems and networks and processing and maintaining this data, in a secure manner, are critical to our business operations and strategy. Information technology security threats -- from user error to cybersecurity attacks designed to gain unauthorized access to our systems, networks and data -- are increasing in frequency and sophistication. Cybersecurity attacks may range from random attempts to coordinated and targeted attacks, including sophisticated computer crime and advanced persistent threats. These threats pose a risk to the security of our systems and networks and the confidentiality, availability and integrity of our data. Cybersecurity attacks could also include attacks targeting customer data or the security, integrity and/or reliability of the hardware and software installed in our products. We have experienced cybersecurity attacks that have resulted in unauthorized parties gaining access to our information technology systems and networks, and we could in the future experience similar attacks. However, to date, no cybersecurity attack has had a material impact on our financial condition,

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results of operations or liquidity. While we actively manage information technology security risks within our control, there can be no assurance that such actions will be sufficient to mitigate all potential risks to our systems, networks and data. The potential consequences of a material cybersecurity attack include reputational damage, litigation with third parties, disruption to systems, unauthorized release of confidential or otherwise protected information, corruption of data, diminution in the value of our investment in research, development and engineering, and increased cybersecurity protection and remediation costs, which in turn could adversely affect our competitiveness, results of operations and financial condition. The amount of insurance coverage we maintain may be inadequate to cover claims or liabilities relating to a cybersecurity attack.

We expect to incur additional restructuring charges as we continue to contemplate cost reduction actions in an effort to optimize our cost structure and may not achieve the anticipated savings and benefits of these actions.

In response to economic and business conditions, we have taken significant restructuring and cost reduction actions in recent years. We expect to take additional restructuring actions as we continue to optimize our cost structure and improve the efficiency of our operation, which may reduce our profitability in the periods incurred. As a result of these actions, we will incur charges, which may include but not be limited to asset impairments, employee termination costs, charges for pension and other postretirement contractual benefits, potential additional pension funding obligations, and pension curtailments, any of which could be significant, and could adversely affect our financial condition and results of operations. In addition, we may not realize anticipated savings or benefits from past or future cost reduction actions in full or in part or within the time periods we expect. We are also subject to the risks of labor unrest, negative publicity and business disruption in connection with our cost reduction actions. Failure to realize anticipated savings or benefits from our cost reduction actions could have a material adverse effect on our business, prospects, financial condition, liquidity, results of operations and cash flows.

We may not realize all of the anticipated benefits from cash flow improvement initiatives and efficiency or productivity initiatives.

We are actively engaged in a number of initiatives to increase our productivity, efficiency and cash flow, which we expect to have a positive long-term effect on our business, competitive position, results of operations and financial condition. For example, one such initiative is to implement sustained improvements in our operational efficiency and order-to-delivery processes so that our lead time is better aligned with customer requirements, as well as to reduce waste, further enhance quality and maximize value for our customers. There can be no assurance that these initiatives or others will continue to be beneficial to the extent anticipated, or that the estimated efficiency improvements or cash flow improvements will be realized as anticipated or at all. If these initiatives are not implemented successfully, it could have an adverse effect on our operations and competitive position.

Our business is subject to the inventory management decisions and sourcing practices of our dealers and our OEM customers.

We sell finished products primarily through an independent dealer network and directly to OEMs and are subject to risks relating to their inventory management decisions and operational and sourcing practices. Both carry inventories of finished products as part of ongoing operations and adjust those inventories based on their assessments of future needs and market conditions, including levels of used equipment inventory. Such adjustments may impact our results positively or negatively. If the inventory levels of our dealers and OEM customers are higher than they desire, they may postpone product purchases from us, which could cause our sales to be lower than the end-user demand for our products and negatively impact our results. Similarly, our results could be negatively impacted through the loss of time-sensitive sales if our dealers and OEM customers do not maintain inventory levels sufficient to meet customer demand.

We may not realize all of the anticipated benefits of our acquisitions, joint ventures or divestitures, or these benefits may take longer to realize than expected.

In pursuing our business strategy, we routinely evaluate targets and enter into agreements regarding possible acquisitions, divestitures and joint ventures. We often compete with others for the same opportunities. To be successful, we conduct due diligence to identify valuation issues and potential loss contingencies, negotiate transaction terms, complete complex transactions and manage post-closing matters such as the integration of acquired businesses. Further, while we seek to mitigate risks and liabilities of such transactions through, among other things, due diligence, there may be risks and liabilities that such due diligence efforts fail to discover, that are not accurately or completely disclosed to us or that we inadequately assess. We may incur unanticipated costs or expenses following a completed acquisition, including post-closing asset impairment charges, expenses associated with eliminating duplicate facilities, litigation, and other liabilities. Risks associated with our past or future acquisitions also include the following:

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- the business culture of the acquired business may not match well with our culture;
- technological and product synergies, economies of scale and cost reductions may not occur as expected;
- unforeseen expenses, delays or conditions may be imposed upon the acquisition, including due to required regulatory approvals or consents;
- we may acquire or assume unexpected liabilities or be subject to unexpected penalties or other enforcement actions;
- faulty assumptions may be made regarding the macroeconomic environment or the integration process;
- unforeseen difficulties may arise in integrating operations, processes and systems;
- higher than expected investments may be required to implement necessary compliance processes and related systems, including IT systems, accounting systems and internal controls over financial reporting;
- we may fail to retain, motivate and integrate key management and other employees of the acquired business;
- higher than expected costs may arise due to unforeseen changes in tax, trade, environmental, labor, safety, payroll or pension policies in any jurisdiction in which the acquired business conducts its operations; and
- we may experience problems in retaining customers and integrating customer bases.

Many of these factors will be outside of our control and any one of them could result in increased costs, decreases in the amount of expected revenues and diversion of management's time and attention. They may also delay the realization of the benefits we anticipate when we enter into a transaction.

In order to conserve cash for operations, we may undertake acquisitions financed in part through public offerings or private placements of debt or equity securities, or other arrangements. Such acquisition financing could result in a decrease in our earnings and adversely affect other leverage measures. If we issue equity securities or equity-linked securities, the issued securities may have a dilutive effect on the interests of the holders of our common shares.

Failure to implement our acquisition strategy, including successfully integrating acquired businesses, could have an adverse effect on our business, financial condition and results of operations. Furthermore, we make strategic divestitures from time to time. In the case of divestitures, we may agree to indemnify acquiring parties for certain liabilities arising from our former businesses. These divestitures may also result in continued financial involvement in the divested businesses, including through guarantees or other financial arrangements, following the transaction. Lower performance by those divested businesses could affect our future financial results.

Union disputes or other labor matters could adversely affect our operations and financial results.

Some of our employees are represented by labor unions in a number of countries under various collective bargaining agreements with varying durations and expiration dates. There can be no assurance that any current or future issues with our employees will be resolved or that we will not encounter future strikes, work stoppages or other types of conflicts with labor unions or our employees. We may not be able to satisfactorily renegotiate collective bargaining agreements in the United States and other countries when they expire. If we fail to renegotiate our existing collective bargaining agreements, we could encounter strikes or work stoppages or other types of conflicts with labor unions. In addition, existing collective bargaining agreements may not prevent a strike or work stoppage at our facilities in the

future. We may also be subject to general country strikes or work stoppages unrelated to our business or collective bargaining agreements. A work stoppage or other limitations on production at our facilities for any reason could have an adverse effect on our business, results of operations and financial condition. In addition, many of our customers and suppliers have unionized work forces. Strikes or work stoppages experienced by our customers or suppliers could have an adverse effect on our business, results of operations and financial condition.

Unexpected events, including natural disasters, may increase our cost of doing business or disrupt our operations.

The occurrence of one or more unexpected events, including war, terrorist acts or violence, fires, tornadoes, tsunamis, hurricanes, earthquakes, floods and other forms of severe weather in the United States or in other countries in which we operate or in which our suppliers are located could adversely affect our operations and financial performance. Natural disasters, pandemic illness, equipment failures, power outages or other unexpected events could result in physical damage to and complete or partial closure of one or more of our manufacturing facilities or distribution centers, temporary or long-term disruption in the supply of component products from some local and international suppliers, disruption in the transport of our

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products to dealers and end-users and delay in the delivery of our products to our distribution centers. Existing insurance coverage may not provide protection for all of the costs that may arise from such events.

FINANCIAL RISKS

Disruptions or volatility in global financial markets could limit our sources of liquidity, or the liquidity of our customers, dealers and suppliers.

Continuing to meet our cash requirements over the long-term requires substantial liquidity and access to varied sources of funds, including capital and credit markets. Global economic conditions may cause volatility and disruptions in the capital and credit markets. Market volatility, changes in counterparty credit risk, the impact of government intervention in financial markets and general economic conditions may also adversely impact our ability to access capital and credit markets to fund operating needs. Global or regional economic downturns could cause financial markets to decrease the availability of liquidity, credit and credit capacity for certain issuers, including certain customers, dealers and suppliers. An inability to access capital and credit markets may have an adverse effect on our business, results of operations, financial condition and competitive position. Furthermore, changes in global economic conditions, including material cost increases and decreases in economic activity in key markets we serve, and the success of plans to manage cost increases, inventory and other important elements of our business may significantly impact our ability to generate funds from operations.

In addition, demand for our products generally depends on customers' ability to pay for our products, which, in turn, depends on their access to funds. Changes in global economic conditions may result in customers experiencing increased difficulty in generating funds from operations. Capital and credit market volatility and uncertainty may cause financial institutions to revise their lending standards, resulting in customers' decreased access to capital. If capital and credit market volatility occurs, customers' liquidity may decline which, in turn, would reduce their ability to purchase our products.

Failure to maintain our credit ratings would increase our cost of borrowing and could adversely affect our cost of funds, liquidity, competitive position and access to capital markets.

Each of Caterpillar's and Cat Financial's costs of borrowing and their respective ability to access the capital markets are affected not only by market conditions but also by the short- and long-term credit ratings assigned to their respective debt by the major credit rating agencies. These ratings are based, in significant part, on each of Caterpillar's and Cat Financial's performance as measured by financial metrics such as net worth, interest coverage and leverage ratios, as well as transparency with rating agencies and timeliness of financial reporting. There can be no assurance that Caterpillar or Cat Financial will be able to maintain their credit ratings. On December 13, 2016, Moody's Investors Service (Moody's) downgraded the long- and short-term ratings of Caterpillar and Cat Financial to A3 from A2 and to Prime-2 from Prime-1. A further downgrade of Caterpillar or Cat Financial's credit ratings by Moody's or one of the other major credit rating agencies would result in increased borrowing costs and could adversely affect Caterpillar's and Cat Financial's liquidity, competitive position and access to the capital markets, including restricting, in whole or in part, access to the commercial paper market. There can be no assurance that the commercial paper market will continue to be a reliable source of short-term financing for Cat Financial or an available source of short-term financing for Caterpillar. An inability to access the capital markets could have an adverse effect on our cash flow, results of operations and financial condition.

Our Financial Products segment is subject to risks associated with the financial services industry.

Cat Financial is significant to our operations and provides financing support to a significant share of our global sales. The inability of Cat Financial to access funds to support its financing activities to our customers could have an adverse effect on our business, results of operations and financial condition.

Continuing to meet Cat Financial's cash requirements over the long-term could require substantial liquidity and access to sources of funds, including capital and credit markets. Cat Financial has continued to maintain access to key global medium term note and commercial paper markets, but there can be no assurance that such markets will continue to represent a reliable source of financing. If global economic conditions were to deteriorate, Cat Financial could face materially higher financing costs, become unable to access adequate funding to operate and grow its business and/or meet its debt service obligations as they mature, and be required to draw upon contractually committed lending agreements and/or seek other funding sources. However, there can be no assurance that such agreements and other funding sources would be available or sufficient under extreme market conditions. Any of these events could negatively impact Cat Financial’s business, as well as our and Cat Financial's results of operations and financial condition.

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Market disruption and volatility may also lead to a number of other risks in connection with these events, including but not limited to:

- Market developments that may affect customer confidence levels and cause declines in the demand for financing and adverse changes in payment patterns, causing increases in delinquencies and default rates, which could impact Cat Financial's write-offs and provision for credit losses.

- The process Cat Financial uses to estimate losses inherent in its credit exposure requires a high degree of management's judgment regarding numerous subjective qualitative factors, including forecasts of economic conditions and how economic predictors might impair the ability of its borrowers to repay their loans. Financial market disruption and volatility may impact the accuracy of these judgments.

- Cat Financial's ability to engage in routine funding transactions or borrow from other financial institutions on acceptable terms or at all could be adversely affected by disruptions in the capital markets or other events, including actions by rating agencies and deteriorating investor expectations.

- As Cat Financial's lending agreements are primarily with financial institutions, their ability to perform in accordance with any of its underlying agreements could be adversely affected by market volatility and/or disruptions in financial markets.

Changes in interest rates or market liquidity conditions could adversely affect Cat Financial's and our earnings and/or cash flow.

Changes in interest rates and market liquidity conditions could have an adverse effect on Cat Financial's and our earnings and cash flows. Because a significant number of the loans made by Cat Financial are made at fixed interest rates, its business is subject to fluctuations in interest rates. Changes in market interest rates may influence its financing costs, returns on financial investments and the valuation of derivative contracts and could reduce its and our earnings and cash flows. Although Cat Financial manages interest rate and market liquidity risks through a variety of techniques, including a match funding program, the selective use of derivatives and a broadly diversified funding program, there can be no assurance that fluctuations in interest rates and market liquidity conditions will not have an adverse effect on its and our earnings and cash flows. If any of the variety of instruments and strategies Cat Financial uses to hedge its exposure to these types of risk is ineffective, we may incur losses. With respect to Insurance Services' investment activities, changes in the equity and bond markets could cause an impairment of the value of its investment portfolio, requiring a negative adjustment to earnings.

An increase in delinquencies, repossessions or net losses of Cat Financial customers could adversely affect its results.

Inherent in the operation of Cat Financial is the credit risk associated with its customers. The creditworthiness of each customer and the rate of delinquencies, repossessions and net losses on customer obligations are directly impacted by several factors, including relevant industry and economic conditions, the availability of capital, the experience and expertise of the customer's management team, commodity prices, political events and the sustained value of the underlying collateral. Any increase in delinquencies, repossessions and net losses on customer obligations could have a material adverse effect on Cat Financial's and our earnings and cash flows. In addition, although Cat Financial evaluates and adjusts its allowance for credit losses related to past due and non-performing receivables on a regular basis, adverse economic conditions or other factors that might cause deterioration of the financial health of its customers could change the timing and level of payments received and necessitate an increase in Cat Financial's estimated losses, which could also have a material adverse effect on Cat Financial's and our earnings and cash flows.

Currency exchange rate fluctuations affect our results of operations.

We conduct operations in many countries involving transactions denominated in a variety of currencies. We are subject to currency exchange rate risk to the extent that our costs are denominated in currencies other than those in which we earn revenues. Fluctuations in currency exchange rates have had, and will continue to have, an impact on our results as expressed in U.S. dollars. There can be no assurance that currency exchange rate fluctuations will not adversely affect our results of operations, financial condition and cash flows. While the use of currency hedging instruments may provide us with protection from adverse fluctuations in currency exchange rates, by utilizing these instruments we potentially forego the benefits that might result from favorable fluctuations in currency exchange rates. In addition, our outlooks do not assume fluctuations in currency exchange rates. Adverse fluctuations in currency exchange rates from the date of our outlooks could cause our actual results to differ materially from those anticipated in our outlooks and adversely impact our business, results of operations and financial condition.

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We also face risks arising from the imposition of exchange controls and currency devaluations. Exchange controls may limit our ability to convert foreign currencies into U.S. dollars or to remit dividends and other payments by our foreign subsidiaries or businesses located in or conducted within a country imposing controls. Currency devaluations result in a diminished value of funds denominated in the currency of the country instituting the devaluation.

Restrictive covenants in our debt agreements could limit our financial and operating flexibility.

We maintain a number of credit facilities to support general corporate purposes (facilities) and have issued debt securities to manage liquidity and fund operations (debt securities). The agreements relating to a number of the facilities and the debt securities contain certain restrictive covenants applicable to us and certain subsidiaries, including Cat Financial. These covenants include maintaining a minimum consolidated net worth (defined as the consolidated shareholder's equity including preferred stock but excluding the pension and other post-retirement benefits balance within accumulated other comprehensive income (loss)), limitations on the incurrence of liens and certain restrictions on consolidation and merger. Cat Financial has also agreed under certain of these agreements not to exceed a certain leverage ratio (consolidated debt to consolidated net worth, calculated (1) on a monthly basis as the average of the leverage ratios determined on the last day of each of the six preceding calendar months and (2) at each December 31), to maintain a minimum interest coverage ratio (profit excluding income taxes, interest expense and net gain/(loss) from interest rate derivatives to interest expense, calculated at the end of each calendar quarter for the rolling four quarter period then most recently ended) and not to terminate, amend or modify its support agreement with us.

A breach of one or more of the covenants could result in adverse consequences that could negatively impact our business, results of operations and financial condition. These consequences may include the acceleration of amounts outstanding under certain of the facilities, triggering of an obligation to redeem certain debt securities, termination of existing unused commitments by our lenders, refusal by our lenders to extend further credit under one or more of the facilities or to enter into new facilities or the lowering or modification of our credit ratings or those of one or more of our subsidiaries.

Sustained increases in funding obligations under our pension plans may impair our liquidity or financial condition.

We maintain certain defined benefit pension plans for our employees, which impose on us certain funding obligations. In determining our future payment obligations under the plans, we assume certain rates of return on the plan assets and a certain level of future benefit payments. Significant adverse changes in credit or capital markets could result in actual rates of return being materially lower than projected and increased contribution requirements. We are expecting to make contributions to our pension plans in the future, and may be required to make contributions that could be material. We may fund contributions through the use of cash on hand, the proceeds of borrowings, shares of our common stock or a combination of the foregoing, as permitted by applicable law. Our assumptions for future benefit payments may also be materially higher than projected. These factors could significantly increase our payment obligations under the plans, and as a result, adversely affect our business and overall financial condition.

LEGAL & REGULATORY RISKS

Our global operations are subject to extensive trade and anti-corruption laws and regulations.

Due to the international scope of our operations, we are subject to a complex system of import- and export-related laws and regulations, including U.S. regulations issued by Customs and Border Protection, the Bureau of Industry and Security, the Office of Antiboycott Compliance, the Directorate of Defense Trade Controls and the Office of Foreign Assets Control, as well as the counterparts of these agencies in other countries. Any alleged or actual violations may

subject us to government scrutiny, investigation and civil and criminal penalties, and may limit our ability to import or export our products or to provide services outside the United States. Furthermore, embargoes and sanctions imposed by the U.S. and other governments restricting or prohibiting sales to specific persons or countries or based on product classification may expose us to potential criminal and civil sanctions. We cannot predict the nature, scope or effect of future regulatory requirements to which our operations might be subject or the manner in which existing laws might be administered or interpreted.

In addition, the U.S. Foreign Corrupt Practices Act and similar foreign anti-corruption laws generally prohibit companies and their intermediaries from making improper payments or providing anything of value to improperly influence foreign government officials for the purpose of obtaining or retaining business, or obtaining an unfair advantage. Recent years have seen a substantial increase in the global enforcement of anti-corruption laws. Our operations outside the United States, including in developing countries, could increase the risk of such violations. Violations of anti-corruption laws or regulations by our employees, by intermediaries acting on our behalf, or by our joint venture partners may result in severe criminal or civil

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sanctions, could disrupt our business, and result in an adverse effect on our reputation, business and results of operations or financial condition.

International trade policies may impact demand for our products and our competitive position.

Government policies on international trade and investment such as import quotas, capital controls or tariffs, whether adopted by individual governments or addressed by regional trade blocs, can affect the demand for our products and services, impact the competitive position of our products or prevent us from being able to sell products in certain countries. The implementation of more restrictive trade policies, such as more detailed inspections, higher tariffs or new barriers to entry, in countries where we sell large quantities of products and services could negatively impact our business, results of operations and financial condition. For example, a government's adoption of "buy national" policies or retaliation by another government against such policies could have a negative impact on our results of operations.

We may incur additional tax expense or become subject to additional tax exposure.

We are subject to income taxes in the United States and numerous other jurisdictions. Our future results of operations could be adversely affected by changes in the effective tax rate as a result of a change in the mix of earnings in jurisdictions with differing statutory tax rates, changes in our overall profitability, changes in tax laws or treaties or in their application or interpretation, changes in tax rates, changes in generally accepted accounting principles, changes in the valuation of deferred tax assets and liabilities, changes in the amount of earnings indefinitely reinvested in certain non-U.S. jurisdictions, the results of audits and examinations of previously filed tax returns and continuing assessments of our tax exposures. We are also subject to the continuous examination of our income tax returns by the U.S. Internal Revenue Service and other tax authorities. We regularly assess the likelihood of an adverse outcome resulting from these examinations. If our effective tax rates were to increase, or if the ultimate determination of our taxes owed is for an amount in excess of amounts previously accrued, our operating results, cash flows and financial condition could be adversely affected. For information regarding additional legal matters related to our taxes, please see Note 5 — "Income taxes" and Note 22 — "Environmental and legal matters" of Part II, Item 8 "Financial Statements and Supplementary Data" to this Annual Report on Form 10-K.

Costs associated with lawsuits or investigations or adverse rulings in enforcement or other legal proceedings may have an adverse effect on our results of operations.

We are subject to a variety of legal proceedings and legal compliance risks in virtually every part of the world. We face risk of exposure to various types of claims, lawsuits and government investigations. We are involved in various claims and lawsuits related to product design, manufacture and performance liability (including claimed asbestos and welding fumes exposure), contracts, employment issues, environmental matters, intellectual property rights, tax, securities and other legal proceedings that arise in and outside of the ordinary course of our business. The industries in which we operate are also periodically reviewed or investigated by regulators, which could lead to enforcement actions, fines and penalties or the assertion of private litigation claims. It is not possible to predict with certainty the outcome of claims, investigations and lawsuits, and we could in the future incur judgments, fines or penalties or enter into settlements of lawsuits and claims that could have an adverse effect on our business, results of operations and financial condition in any particular period.

The global and diverse nature of our operations means that legal and compliance risks will continue to exist and additional legal proceedings and other contingencies, the outcome of which cannot be predicted with certainty, may arise from time to time. In addition, subsequent developments in legal proceedings may affect our assessment and estimates of loss contingencies recorded as a reserve and require us to make payments in excess of our reserves, which could have an adverse effect on our results of operations and financial condition.

New regulations or changes in financial services regulation could adversely impact Caterpillar and Cat Financial.

Cat Financial’s operations are highly regulated by governmental authorities in the locations where it operates, which can impose significant additional costs and/or restrictions on its business. In the U.S., for example, certain Cat Financial activities are subject to the U.S. Dodd-Frank Wall Street Reform and Consumer Protection Act (Dodd-Frank), which includes extensive provisions regulating the financial services industry. As such, Cat Financial has become and could continue to become subject to additional regulatory costs that could be significant and have an adverse effect on Cat Financial's and our results of operations and financial condition. Additional regulations in the U.S. or internationally impacting the financial services industry could also add significant cost or operational constraints that might have an adverse effect on Cat Financial's and our results of operations and financial condition.

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We are subject to stringent environmental laws and regulations that impose significant compliance costs.

Our facilities, operations and products are subject to increasingly stringent environmental laws and regulations globally, including laws and regulations governing emissions to noise, air, releases to soil and discharges to water and the generation, handling, storage, transportation, treatment and disposal of non-hazardous and hazardous waste materials. Some environmental laws impose strict, retroactive and joint and several liability for the remediation of the release of hazardous substances, even for conduct that was lawful at the time it occurred, or for the conduct of, or conditions caused by, prior operators, predecessors or other third parties. Failure to comply with environmental laws could expose us to penalties or clean-up costs, civil or criminal liability and sanctions on certain of our activities, as well as damage to property or natural resources. The potential liabilities, sanctions, damages and remediation efforts related to any non-compliance with such laws and regulations could negatively impact our ability to conduct our operations and our financial condition and results of operations. In addition, there can be no assurances that we will not be adversely affected by costs, liabilities or claims with respect to existing or subsequently acquired operations or under present laws and regulations or those that may be adopted or imposed in the future.

Environmental laws and regulations may change from time to time, as may related interpretations and other guidance. Changes in environmental laws or regulations could result in higher expenses and payments, and uncertainty relating to environmental laws or regulations may also affect how we conduct our operations and structure our investments and could limit our ability to enforce our rights. Changes in environmental and climate change laws or regulations, including laws relating to greenhouse gas emissions, could lead to new or additional investment in product designs and could increase environmental compliance expenditures. Changes in climate change concerns, or in the regulation of such concerns, including greenhouse gas emissions, could subject us to additional costs and restrictions, including increased energy and raw materials costs. If environmental laws or regulations are either changed or adopted and impose significant operational restrictions and compliance requirements upon us or our products, they could negatively impact our business, capital expenditures, results of operations, financial condition and competitive position.

Item 1B. Unresolved Staff Comments.

None.

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Item 1C. Executive Officers of the Registrant.

Name and age	Present Caterpillar Inc. position and date of initial election	Principal positions held during the past five years if other than Caterpillar Inc. position currently held
D. James Umpleby III (59)	Chief Executive Officer (2017)	Group President (2013-2016)
Bradley M. Halverson (57)	Group President and Chief Financial Officer (2013)	
Robert B. Charter (54)	Group President (2015)	Vice President (2009-2015)
Bob De Lange (48)	Group President (2017)	Vice President (2015-2016), Worldwide Product Manager, Medium Wheel Loaders, (2013-2014), Regional Product Manager, Medium Wheel Loaders (2010-2013)
Denise C. Johnson (51)	Group President (2016)	Vice President (2012-2016)
Thomas A. Pellette (55)	Group President (2015)	Vice President (2013-2015), Vice President, Customer Services, Solar (2010-2013)
Suzette M. Long (52)	General Counsel and Corporate Secretary (2017)	Interim Executive Vice President, Law and Public Policy (2017), Deputy General Counsel (2013-2017), Associate General Counsel (2011-2013)
Cheryl C. Johnson (57)	Chief Human Resources Officer (2017)	Executive Vice President of Human Resources for a global multi-industry aerospace, defense and industrial manufacturing company (2012-2017)
Jananne A. Copeland (55)	Chief Accounting Officer (2007)	

Item 2. Properties.

General Information

Caterpillar's operations are highly integrated. Although the majority of our plants are involved primarily in production relating to our Construction Industries, Resource Industries or Energy & Transportation segments, several plants are involved in manufacturing relating to more than one business segment. In addition, several plants reported in our financial statements under the All Other segments are involved in the manufacturing of components that are used in the assembly of products for more than one business segment. Caterpillar's parts distribution centers are involved in the storage and distribution of parts for Construction Industries, Resource Industries and Energy & Transportation. The research and development activities carried on at our Technical Center in Mossville, Illinois involve products for Construction Industries, Resource Industries and Energy & Transportation.

We believe the properties we own to be generally well maintained and adequate for present use. Through planned capital expenditures, we expect these properties to remain adequate for future needs. Properties we lease are covered by leases expiring over terms of generally one to ten years. We do not anticipate any difficulty in retaining occupancy of any leased facilities, either by renewing leases prior to expiration or by replacing them with equivalent leased facilities.

Headquarters and Other Key Offices

Our corporate headquarters are in leased offices located in Deerfield, Illinois. Additional marketing and operating headquarters are located both inside and outside the United States including Peoria, Illinois, Albertville, Alabama, San Diego, California; Geneva, Switzerland; Beijing, China; Singapore, Republic of Singapore; Piracicaba, Brazil, and Yokohama, Japan. Our Financial Products business is headquartered in offices in Nashville, Tennessee.

Technical Center, Training Centers, Demonstration Areas and Proving Grounds
We operate a Technical Center located in Mossville, Illinois, and various other technical and training centers and demonstration areas and proving grounds located both inside and outside the United States.

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Parts Distribution Centers

Distribution of our parts is conducted from parts distribution centers inside and outside the United States. We operate parts distribution centers in the following locations: Morton, Illinois; Mossville, Illinois; Arvin, California; Denver, Colorado; Miami, Florida; Atlanta, Georgia; St. Paul, Minnesota; Clayton, Ohio; Houston, Pennsylvania; York, Pennsylvania; Waco, Texas; Duffield, Virginia; Spokane, Washington; Melbourne, Australia; Queensland, Australia; Grimbergen, Belgium; Piracicaba, Brazil; Shanghai, China; San Luis Potosi, Mexico; Singapore, Republic of Singapore; Moscow, Russia; Johannesburg, South Africa, and Dubai, United Arab Emirates. We also own or lease other facilities that support our distribution activities.

Remanufacturing and Components

Remanufacturing of our products is reported in our Energy & Transportation segment and is conducted primarily at the facilities in the following locations: Franklin, Indiana; Corinth, Mississippi, Prentiss County, Mississippi; West Fargo, North Dakota; Piracicaba, Brazil; Shanghai, China; and Nuevo Laredo, Mexico.

Component manufacturing is reported in the All Other segments and is conducted primarily at facilities in the following locations: Aurora, Illinois; East Peoria, Illinois; Mapleton, Illinois; Peoria, Illinois; Menominee, Michigan; Boonville, Missouri; West Plains, Missouri; Goldsboro, North Carolina; Sumter, South Carolina; Tianjin, China; Xuzhou, China; Atessa, Italy; Bazzano, Italy; Frosinone, Italy; San Eusebio, Italy; Ramos Arizpe, Mexico; Pyeongtaek, South Korea; Shrewsbury, United Kingdom and Skinningrove, United Kingdom.

We also lease or own other facilities that support our remanufacturing and component manufacturing activities.

Manufacturing

Manufacturing of products for our Construction Industries, Resource Industries and Energy & Transportation segments is conducted primarily at the locations listed below. These facilities are believed to be suitable for their intended purposes, with adequate capacities for current and projected needs for existing products.

Our principal manufacturing facilities include those used by the following segments in the following locations:

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Segment	U.S. Facilities	Facilities Outside the U.S.
Construction Industries	Arkansas: North Little Rock Georgia: Athens, LaGrange Illinois: Aurora, Decatur, East Peoria Kansas: Wamego Minnesota: Brooklyn Park North Carolina: Clayton, Sanford Texas: Victoria, Waco	Brazil: Campo Largo, Piracicaba China: Suzhou, Wujiang, Xuzhou, Qingzhou France: Grenoble, Echirolles Hungary: Godollo India: Thiruvallar Indonesia: Jakarta Italy: Minerbio Japan: Akashi Mexico: Torreon Netherlands: Den Bosch Poland: Janow, Sosnowiec Thailand: Rayong United Kingdom: Desford, Stockton
Resource Industries	Illinois: Aurora, Decatur, East Peoria, Joliet South Carolina: Sumter Tennessee: Dyersburg Texas: Denison Wisconsin: South Milwaukee	China: Langfang, Wuxi France: Arras Germany: Dortmund, Lunen India: Hosur, Thiruvallur Indonesia: Batam Italy: Jesi Japan: Sagamihara Mexico: Acuna, Monterrey, Reynosa Northern Ireland: Belfast Russia: Tosno Thailand: Rayong United Kingdom: Peterlee
Energy & Transportation	Alabama: Albertville, Montgomery California: San Diego Colorado: Denver Georgia: Griffin, Alpharetta Illinois: Island Lake, LaGrange, Mossville, Mapleton, Pontiac Indiana: Lafayette, Muncie Oklahoma: Broken Arrow, Sulphur North Carolina: Winston-Salem Kentucky: Decoursey, Mayfield Texas: Channelview, DeSoto, Mabank, San Antonio, Schertz, Seguin, Sherman	Australia: Revesby, Redbank Brazil: Curitiba, Hortolandia, Piracicaba, Sete Lagoas China: Tianjin, Wuxi Czech Republic: Zatec, Zebrak Germany: Kiel, Mannheim, Rostock India: Hosur, Aurangabad Mexico: San Luis Potosi, Tijuana Republic of Singapore: Singapore Sweden: Ockero Islands Switzerland: Riazzino United Kingdom: Larne, Monkstown, Peterborough, Sandiacre, South Queensferry, Springvale, Stafford,

Wimborne

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Item 3. Legal Proceedings.

Certain legal proceedings in which we are involved are discussed in Note 22 — "Environmental and legal matters" of Part II, Item 8 "Financial Statements and Supplementary Data" and should be considered an integral part of Part I, Item 3 "Legal Proceedings."

Item 4. Mine Safety Disclosures.

Not applicable.

PART II

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

Common Stock (NYSE: CAT)

Listing Information: Caterpillar common stock is listed on the New York Stock Exchange in the United States, and on stock exchanges in France and Switzerland.

Price Ranges: Quarterly price ranges of Caterpillar common stock on the New York Stock Exchange, the principal market in which the stock is traded, were:

	2017		2016	
Quarter	High	Low	High	Low
First	$99.46	$90.34	$77.25	$56.36
Second	$108.18	$91.00	$80.89	$69.04
Third	$125.55	$105.11	$88.98	$73.46
Fourth	$158.64	$123.95	$97.40	$80.33

Number of Shareholders: Shareholders of record at the end of 2017 totaled 27,992, compared with 29,394 at the end of 2016.

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Performance Graph: Total Cumulative Shareholder Return for Five-Year Period Ending December 31, 2017

The graph below shows the cumulative shareholder return assuming an investment of $100 on December 31, 2012, and reinvestment of dividends issued thereafter.

	2012	2013	2014	2015	2016	2017
Caterpillar Inc.	$100.00	$103.42	$107.02	$82.43	$117.14	$205.04
S&P 500	$100.00	$132.39	$150.51	$152.59	$170.84	$208.14
S&P 500 Machinery	$100.00	$127.12	$132.74	$113.12	$151.51	$215.59

Additional information required by Item 5 regarding our stock is included in Part II, Item 7 "Management's Discussion and Analysis of Financial Condition and Results of Operations" under "Dividends paid per common share."

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Non-U.S. Employee Stock Purchase Plans

As of December 31, 2017, we had 27 employee stock purchase plans (the "EIP Plans") administered outside the United States for our non-U.S. employees, which had approximately 12,000 active participants in the aggregate. During the fourth quarter of 2017, approximately 92,000 shares of Caterpillar common stock were purchased by the EIP Plans pursuant to the terms of such plans.

Issuer Purchases of Equity Securities

No shares were repurchased during the fourth quarter of 2017.

Other Purchases of Equity Securities

Period	Total number of Shares Purchased [1]	Average Price Paid per Share	Total Number of Shares Purchased Under the Program	Approximate Dollar Value of Shares that may yet be Purchased under the Program
October 1-31, 2017	127	$ 133.18	N/A	N/A
November 1-30, 2017	1,819	$ 136.43	N/A	N/A
December 1-31, 2017	95	$ 140.39	N/A	N/A
Total	2,041	$ 136.41		

(1) Represents shares delivered back to issuer for the payment of taxes resulting from the vesting of restricted stock units for employees and Directors.

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Item 6. Selected Financial Data.

Five-year Financial Summary

(Dollars in millions except per share data)

	2017	2016	2015	2014	2013
Years ended December 31,					
Sales and revenues	$45,462	$38,537	$47,011	$55,184	$55,656
Percent inside the United States	41 %	41 %	41 %	38 %	33 %
Percent outside the United States	59 %	59 %	59 %	62 %	67 %
Sales	$42,676	$35,773	$44,147	$52,142	$52,694
Revenues	$2,786	$2,764	$2,864	$3,042	$2,962
Profit (loss) [1]	$754	$(67)	$2,512	$2,452	$6,556
Profit (loss) per common share [2]	$1.27	$(0.11)	$4.23	$3.97	$10.16
Profit (loss) per common share–diluted [3]	$1.26	$(0.11)	$4.18	$3.90	$9.95
Dividends declared per share of common stock	$3.11	$3.08	$3.01	$2.70	$2.32
Return on average common shareholders' equity [4]	5.6 %	(0.5)%	15.8 %	13.0 %	34.1 %
Capital expenditures:					
Property, plant and equipment	$898	$1,109	$1,388	$1,539	$2,522
Equipment leased to others	$1,438	$1,819	$1,873	$1,840	$1,924
Depreciation and amortization	$2,877	$3,034	$3,046	$3,163	$3,087
Research and development expenses	$1,905	$1,951	$2,119	$2,380	$1,552
As a percent of sales and revenues	4.2 %	5.1 %	4.5 %	4.3 %	2.8 %
Average number of employees	96,000	99,500	110,800	115,600	122,500
December 31,					
Total assets	$76,962	$74,704	$78,342	$84,498	$84,755
Long-term debt due after one year:					
Consolidated	$23,847	$22,818	$25,169	$27,696	$26,643
Machinery, Energy & Transportation	$7,929	$8,436	$8,960	$9,445	$7,961
Financial Products	$15,918	$14,382	$16,209	$18,251	$18,682
Total debt:					
Consolidated	$34,878	$36,783	$38,013	$39,195	$37,672
Machinery, Energy & Transportation	$7,936	$9,152	$9,486	$9,964	$8,737
Financial Products	$26,942	$27,631	$28,527	$29,231	$28,935

[1] Profit (loss) attributable to common shareholders.

[2] Computed on weighted-average number of shares outstanding.

[3] Computed on weighted-average number of shares outstanding diluted by assumed exercise of stock-based compensation awards, using the treasury stock method. In 2016, the assumed exercise of stock-based compensation awards was not considered because the impact would be antidilutive.

[4] Represents profit (loss) divided by average shareholders' equity (beginning of year shareholders' equity plus end of year shareholders' equity divided by two).

Additional information required by Item 6 is included in Part II, Item 7 "Management's Discussion and Analysis of Financial Condition and Results of Operations."

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

This Management's Discussion and Analysis of Financial Condition and Results of Operations should be read in conjunction with our discussion of cautionary statements and significant risks to the company's business under Item 1A. Risk Factors of the 2017 Form 10-K.

OVERVIEW

Our sales and revenues for 2017 were $45.462 billion, an 18 percent increase from 2016 sales and revenues of $38.537 billion. The increase was primarily due to higher sales volume, mostly due to improved end-user demand. In addition, favorable changes in dealer inventories contributed to increased sales volume. The improvement in end-user demand was across all regions and most end markets. The favorable change in dealer inventories was primarily due to a decrease in 2016, compared to dealer inventories that were about flat in 2017. Favorable price realization, mostly in Construction Industries, also contributed to the sales improvement. Profit per share for 2017 was $1.26, compared to a loss per share of $0.11 in 2016. Profit was $754 million in 2017, compared to a loss of $67 million in 2016. The increase was primarily due to higher sales volume, improved price realization, a decrease in mark-to-market losses related to pension and other postemployment benefits (OPEB) plans and the absence of a goodwill impairment charge in Resource Industries in 2016 offset by higher taxes primarily due to enactment of U.S. tax reform legislation on December 22, 2017. An increase in period costs and restructuring costs was partially offset by lower variable manufacturing costs.

Fourth-quarter 2017 sales and revenues were $12.896 billion, up $3.322 billion, or 35 percent, from $9.574 billion in the fourth quarter of 2016. Fourth-quarter 2017 loss was $2.18 per share, compared with a loss of $2.00 per share in the fourth quarter of 2016. Fourth-quarter 2017 loss was $1.299 billion, compared with a loss of $1.171 billion in 2016.

Highlights for 2017 include:

- Sales and revenues in 2017 were $45.462 billion, up 18 percent from 2016. Sales improved in all regions and most end markets.
- Profit was $1.26 per share for 2017, and excluding the items in the table below, adjusted profit per share was $6.88. For 2016, loss per share was $0.11, and excluding the items in the table below, adjusted profit per share was $3.42.
- In order for our results to be more meaningful to our readers, we have separately quantified the impact of several significant items:
- Inventory decreased about $200 million in the fourth-quarter 2017. For the full year, inventory increased about $1.4 billion.
- Machinery, Energy & Transportation (ME&T) operating cash flow for 2017 was about $5.5 billion, more than sufficient to cover capital expenditures and dividends.

Restructuring Costs

In recent years, we have incurred substantial restructuring costs to achieve a flexible and competitive cost structure. During 2017, we incurred $1.256 billion of restructuring costs with about half related to the closure of the facility in Gosselies, Belgium, and the remainder related to other restructuring actions across the company. During 2016, we incurred $1.019 billion of restructuring costs, primarily related to Resource Industries and Energy & Transportation. In 2018, we expect restructuring actions to continue and anticipate costs of about $400 million.

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Notes:

- Glossary of terms included on pages 49-52; first occurrence of terms shown in bold italics.
- Information on non-GAAP financial measures is included on pages 65-66.

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2017 COMPARED WITH 2016

CONSOLIDATED SALES AND REVENUES

The chart above graphically illustrates reasons for the change in Consolidated Sales and Revenues between 2016 (at left) and 2017 (at right). Items favorably impacting sales and revenues appear as upward stair steps with the corresponding dollar amounts above each bar, while items negatively impacting sales and revenues appear as downward stair steps with dollar amounts reflected in parentheses above each bar. Caterpillar management utilizes these charts internally to visually communicate with the company's Board of Directors and employees.

Total sales and revenues were $45.462 billion in 2017, an increase of $6.925 billion, or 18 percent, compared with $38.537 billion in 2016. The increase was primarily due to higher sales volume, mostly due to improved end-user demand, which we expect to continue in 2018. In addition, favorable changes in dealer inventories contributed to increased sales volume. The improvement in end-user demand was across all regions and most end markets. The favorable change in dealer inventories was primarily due to a decrease in 2016, compared to dealer inventories that were about flat in 2017. Dealer machine and engine inventories increased about $100 million in 2017, compared to a decrease of about $1.6 billion during 2016. Dealers are independent, and there could be many reasons for changes in their inventory levels, including their expectations of future demand and product delivery times. Dealers' demand expectations take into account seasonal changes, macroeconomic conditions, machine rental rates and other factors. Delivery times can vary based on availability of product from Caterpillar factories and product distribution centers. By segment, the largest sales volume increase was in Construction Industries mostly due to higher end-user demand for construction equipment. Resource Industries sales volume increased due to higher end-user demand for aftermarket parts and equipment and a favorable impact of changes in dealer inventories. Energy & Transportation's sales volume was higher mostly due to increased demand for equipment and aftermarket parts for oil and gas and industrial applications. Favorable price realization, mostly in Construction Industries, also contributed to the sales improvement. Financial Products' revenues were about flat.

Sales increased in all regions. In North America, sales increased 19 percent primarily due to higher end-user demand mostly for on-shore oil and gas applications and construction equipment, the favorable impact of changes in dealer inventories and favorable price realization, primarily in Construction Industries. Asia/Pacific sales increased 23 percent primarily due to an increase in construction equipment sales, mostly in China resulting from increased building construction and infrastructure investment. EAME sales increased 16 percent primarily due to higher end-user demand for equipment and aftermarket parts in Resource Industries and favorable changes in dealer inventories, as dealers decreased inventories in 2016 and inventories were about flat in 2017. In addition, price realization was favorable, primarily in Construction Industries. Sales increased 25 percent in Latin America primarily due to stabilizing economic conditions in several countries in the region that resulted in improved end-user demand from low levels and the favorable impact of changes in dealer inventories as inventories decreased in 2016 and increased in 2017.

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The increase in demand in 2017 led to challenges for certain products due to supplier constraints. Despite improvements in material flows in the second half of 2017, parts and components constraints remain across some products, which could impact the company’s growth potential in 2018 as our global suppliers continue to increase production to meet demand.

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CONSOLIDATED OPERATING PROFIT

The chart above graphically illustrates reasons for the change in Consolidated Operating Profit between 2016 (at left) and 2017 (at right). Items favorably impacting operating profit appear as upward stair steps with the corresponding dollar amounts above each bar, while items negatively impacting operating profit appear as downward stair steps with dollar amounts reflected in parentheses above each bar. Caterpillar management utilizes these charts internally to visually communicate with the company's Board of Directors and employees. The bar entitled Other includes consolidating adjustments and Machinery, Energy & Transportation other operating (income) expenses.

Operating profit for 2017 was $4.406 billion, compared with $498 million in 2016. The increase of $3.908 billion was primarily due to higher sales volume, improved price realization, a decrease in mark-to-market losses related to pension and OPEB plans and the absence of a goodwill impairment charge in Resource Industries in 2016. An increase in period costs and restructuring costs was partially offset by lower variable manufacturing costs.

Period costs increased primarily due to higher short-term incentive compensation expense, partially offset by the favorable impact of restructuring and cost reduction actions over the past year. These actions primarily impacted depreciation expense and research and development (R&D) expenses.

Short-term incentive compensation expense is directly related to financial and operational performance, measured against targets set annually. Short-term incentive compensation expense was about $1.4 billion in 2017, significantly above targeted levels, compared to about $250 million in 2016. For 2018, we expect short-term incentive compensation expense will be significantly lower than 2017.

In 2017, we incurred $1.256 billion of restructuring costs with about half related to the closure of the facility in Gosselies, Belgium, and the remainder related to other restructuring actions across the company. In 2016, restructuring costs were $1.019 billion, primarily related to Resource Industries and Energy & Transportation.

Variable manufacturing costs were lower primarily due to the favorable impact from cost absorption and efficiencies. Cost absorption was favorable as inventory increased in 2017, and decreased in 2016. Material costs were slightly unfavorable in 2017, as higher steel costs were partially offset by cost reduction actions. We expect material costs to be higher in 2018, primarily due to anticipated increases in commodity prices.

Other Profit/Loss Items

- Other income/expense in 2017 was income of $207 million, compared with income of $146 million in 2016. The improvement was primarily due to a pretax gain on the sale of Caterpillar's equity investment in IronPlanet, gains on sale of securities and an increase in interest income. The favorable change was partially offset by an unfavorable net impact from currency translation and hedging gains and losses. Currency translation and hedging net losses in 2017 were significantly higher than the net losses in 2016.
- The provision for income taxes for 2017 reflects an annual effective tax rate of 27.7 percent, compared to 36.4 percent for the full-year 2016, excluding the items discussed below. The effective tax rate related to 2017 full-year

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adjusted profit before tax, excluding a discrete benefit from stock-based compensation awards, was 27 percent, compared to 26 percent in 2016.

The provision for income taxes for 2017 also includes a charge of $2.371 billion due to the enactment of U.S. tax reform legislation on December 22, 2017. The provisionally estimated charge includes a $596 million write-down of net deferred tax assets to reflect the reduction in the U.S. corporate tax rate from 35 percent to 21 percent beginning January 1, 2018, with the remainder primarily related to the cost of a mandatory deemed repatriation of non-U.S. earnings. We believe this charge is a reasonable estimate, as of January 18, 2018, that may change as additional required information is prepared and analyzed, interpretations and assumptions are refined, additional guidance is issued, and due to actions we may take as a result of the legislation. The 2017 provision for income taxes also includes the following:

- A non-cash benefit of $111 million, net of U.S. federal tax at 35 percent, from reductions in the valuation allowance against U.S. state deferred tax assets due to improved profits in the United States.
- A tax benefit of $64 million for the settlement of stock-based compensation awards with associated tax deductions in excess of cumulative U.S. GAAP compensation expense.
- A charge of $15 million for an increase in prior year taxes related to the Gosselies, Belgium, facility, restructuring costs.

The provision for income taxes for 2016 also included a non-cash charge of $141 million, net of U.S. federal tax at 35 percent, for increases in the valuation allowance against U.S. state deferred tax assets.

We expect the annual effective tax rate will be lower in 2018 as a result of U.S. tax reform.

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Segment Information

Sales and Revenues by Geographic Region

(Millions of dollars)	Total	% Change	North America	% Change	Latin America	% Change	EAME	% Change	Asia/ Pacific	% Change
2017										
Construction Industries [1]	$19,133	23 %	$8,742	16 %	$1,396	32 %	$3,760	15 %	$5,235	39 %
Resource Industries [2]	7,504	31 %	2,582	25 %	1,281	28 %	1,775	51 %	1,866	26 %
Energy & Transportation [3]	15,964	11 %	7,959	19 %	1,261	14 %	4,431	5 %	2,313	(5)%
All Other Segments [4]	178	28 %	70	52 %	3	— %	54	93 %	51	(18)%
Corporate Items and Eliminations	(103)		(97)		(1)		(6)		1	
Machinery, Energy & Transportation Sales	42,676	19 %	19,256	19 %	3,940	25 %	10,014	16 %	9,466	23 %
Financial Products Segment	3,093	3 %	2,006	8 %	306	(9)%	418	4 %	363	(8)%
Corporate Items and Eliminations	(307)		(190)		(46)		(19)		(52)	
Financial Products Revenues	2,786	1 %	1,816	5 %	260	(11)%	399	4 %	311	(12)%
Consolidated Sales and Revenues	$45,462	18 %	$21,072	17 %	$4,200	22 %	$10,413	15 %	$9,777	21 %
2016										
Construction Industries [1]	$15,612		$7,529		$1,059		$3,270		$3,754	
Resource Industries [2]	5,726		2,068		1,001		1,179		1,478	
Energy & Transportation [3]	14,411		6,680		1,104		4,201		2,426	
All Other Segments [4]	139		46		3		28		62	
Corporate Items and Eliminations	(115)		(98)		(3)		(9)		(5)	
Machinery, Energy & Transportation Sales	35,773		16,225		3,164		8,669		7,715	
Financial Products Segment	2,993		1,862		336		401		394	
Corporate Items and Eliminations	(229)		(125)		(45)		(17)		(42)	
Financial Products Revenues	2,764		1,737		291		384		352	
Consolidated Sales and Revenues	$38,537		$17,962		$3,455		$9,053		$8,067	

[1] Does not include inter-segment sales of $107 million and $78 million in 2017 and 2016, respectively.
[2] Does not include inter-segment sales of $357 million and $284 million in 2017 and 2016, respectively.
[3] Does not include inter-segment sales of $3,418 million and $2,540 million in 2017 and 2016, respectively.
[4] Does not include inter-segment sales of $392 million and $405 million in 2017 and 2016, respectively.

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Sales and Revenues by Segment

(Millions of dollars)	2016	Sales Volume	Price Realization	Currency	Other	2017	$ Change	% Change
Construction Industries	$15,612	$2,810	$ 751	$ (40)	$—	$19,133	$3,521	23 %
Resource Industries	5,726	1,638	118	22	—	7,504	1,778	31 %
Energy & Transportation	14,411	1,556	(42)	39	—	15,964	1,553	11 %
All Other Segments	139	39	—	—	—	178	39	28 %
Corporate Items and Eliminations	(115)	12	—	—	—	(103)	12	
Machinery, Energy & Transportation Sales	35,773	6,055	827	21	—	42,676	6,903	19 %
Financial Products Segment	2,993	—	—	—	100	3,093	100	3 %
Corporate Items and Eliminations	(229)	—	—	—	(78)	(307)	(78)	
Financial Products Revenues	2,764	—	—	—	22	2,786	22	1 %
Consolidated Sales and Revenues	$38,537	$6,055	$ 827	$ 21	$22	$45,462	$6,925	18 %

Profit (Loss) by Segment

(Millions of dollars)	2017	2016	$ Change	% Change
Construction Industries	$3,258	$1,650	$1,608	97 %
Resource Industries	690	(1,047)	1,737	n/a
Energy & Transportation	2,883	2,222	661	30 %
All Other Segments	(43)	(77)	34	44 %
Corporate Items and Eliminations	(2,736)	(2,659)	(77)	
Machinery, Energy & Transportation	4,052	89	3,963	4,453 %
Financial Products Segment	792	702	90	13 %
Corporate Items and Eliminations	(116)	(53)	(63)	
Financial Products	676	649	27	4 %
Consolidating Adjustments	(322)	(240)	(82)	
Consolidated Operating Profit	$4,406	$498	$3,908	785 %

Construction Industries

Construction Industries' sales were $19.133 billion in 2017, compared with $15.612 billion in 2016. The increase was due to higher sales volume and favorable price realization.

- Sales volume increased due to higher end-user demand, primarily for equipment in Asia/Pacific and North America. In addition, sales volume increased due to favorable changes in dealer inventories, as inventories decreased in 2016 and increased in 2017.
- Although market conditions remain competitive, price realization was favorable due to a particularly weak pricing environment in 2016, and previously implemented price increases impacting 2017.

Sales increased across all regions with the largest increases in Asia/Pacific and North America.

- Sales in Asia/Pacific were higher as a result of an increase in end-user demand, primarily in China, stemming from increased building construction and infrastructure investment. We expect 2018 sales in China to be higher due to continued building construction and infrastructure investment with a strong first half and some tempering in the latter part of the year, largely due to anticipated seasonality.

- In North America, sales increased primarily due to higher end-user demand for construction equipment, mostly due to improved oil and gas, residential and nonresidential construction activities. Also contributing to higher sales was the impact of favorable changes in dealer inventories, as inventories decreased more in 2016 than in 2017, and favorable price realization. We expect improvement in residential, nonresidential and infrastructure construction activities in North America to result in higher end-used demand for construction equipment in 2018.

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- Sales in EAME increased due to favorable changes in dealer inventories and favorable price realization. The favorable impact of change in dealer inventories resulted from a decrease in 2016 and an increase in 2017.
- Although construction activity remained weak in Latin America, sales were higher as end-user demand increased from low levels due to stabilizing economic conditions in several countries in the region. In addition, sales volume increased due to favorable changes in dealer inventories, as dealer inventories increased in 2017 and decreased in 2016.

Construction Industries' profit was $3.258 billion in 2017, compared with $1.650 billion in 2016. The increase in profit was primarily due to higher sales volume and favorable price realization. Period costs were unfavorable primarily due to higher short-term incentive compensation expense, partially offset by lower depreciation expense.

Resource Industries

Resource Industries' sales were $7.504 billion in 2017, an increase of $1.778 billion, or 31 percent, from 2016. Sales increased due to higher end-user demand for aftermarket parts and equipment and the favorable impact of changes in dealer inventories. Positive commodity price trends in 2017 drove improved market conditions and better financial health of mining companies. After a number of years of low investment, miners have begun to increase capital expenditures, reflecting more confidence in their end markets. Idle mining trucks on customer sites also decreased in 2017. These changes resulted in higher sales for aftermarket parts to support increased mining activity as well as maintenance and rebuild activities and, by the second half of 2017, resulted in higher end-user demand for mining equipment. Dealer inventories increased in 2017, compared with a significant decrease in 2016.

Resource Industries' profit was $690 million in 2017, compared with a loss of $1.047 billion in 2016. The improvement was partially due to the absence of a goodwill impairment charge of $595 million in 2016. Higher sales volume, lower variable manufacturing costs, favorable price realization and lower period costs also contributed to increased profit. Variable manufacturing costs were lower primarily due to a favorable impact from cost absorption and efficiencies. Cost absorption was favorable as inventory increased in 2017, to support higher production volumes and decreased in 2016. Period costs were lower primarily due to the favorable impact of restructuring and cost reduction actions, partially offset by an increase in short-term incentive compensation expense.

Energy & Transportation

Energy & Transportation's sales were $15.964 billion in 2017, compared with $14.411 billion in 2016. The increase was primarily due to higher sales in oil and gas and industrial applications.

- Oil and Gas - Sales increased in North America due to higher sales of reciprocating engines and aftermarket parts used in on-shore gas compression and well servicing applications. Sales in remaining regions were about flat.
- Industrial - Sales were higher in all regions, reflecting increased sales for equipment across end-user applications and aftermarket parts.
- Transportation - Sales were higher primarily in North America for rail services driven by increased rail traffic.
- Power Generation - Sales were about flat in all regions as the industry remains challenged.

Sales into Oil and Gas applications are expected to increase in 2018, led by reciprocating engines for gas compression and well servicing in North America. We expect an increase in Transportation primarily from recent acquisitions in rail services.

Energy & Transportation's profit was $2.883 billion in 2017, compared with $2.222 billion in 2016. The increase was primarily due to higher sales volume and lower variable manufacturing costs, partially offset by higher period costs. Variable manufacturing costs were lower primarily due to a favorable impact from cost absorption and improved material costs. Cost absorption was favorable as inventory increased in 2017, compared to a decrease in 2016. The increase in period costs was primarily due to higher short-term incentive compensation expense.

Financial Products Segment

Financial Products' segment revenues were $3.093 billion, an increase of $100 million, or 3 percent, from 2016. The increase was primarily due to higher average financing rates in North America, a favorable impact from intercompany lending activity in North America and higher average earning assets in EAME. These favorable impacts were partially

offset by lower average financing rates in Asia/Pacific and lower average earning assets in North America and Latin America.

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Financial Products' segment profit was $792 million in 2017, compared with $702 million in 2016. The increase was primarily due to higher gains on sales of securities at Insurance Services, an increase in net yield on average earning assets and increased intercompany lending activity. These favorable impacts were partially offset by an increase in SG&A expenses due to higher short-term incentive compensation expense.

At the end of 2017, past dues at Cat Financial were 2.78 percent, compared with 2.38 percent at the end of 2016. Write-offs, net of recoveries, were $114 million for the full year of 2017, compared with $123 million for the full year of 2016.

As of December 31, 2017, Cat Financial's allowance for credit losses totaled $365 million, or 1.33 percent of finance receivables, compared with $343 million, or 1.29 percent of finance receivables at year-end 2016.

Corporate Items and Eliminations

Expense for corporate items and eliminations was $2.852 billion in 2017, which was an increase of $140 million compared with 2016. Corporate items and eliminations include: corporate-level expenses; restructuring costs; timing differences, as some expenses are reported in segment profit on a cash basis; retirement benefit costs other than service cost; currency differences for ME&T, as segment profit is reported using annual fixed exchange rates; cost of sales methodology differences as segments use a current cost methodology; and inter-segment eliminations.

The increase in expense was a result of methodology differences, higher restructuring costs, timing differences and an increase in short-term incentive compensation expense, mostly offset by lower mark-to-market losses related to pension and OPEB plans.

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FOURTH QUARTER 2017 COMPARED WITH FOURTH QUARTER 2016

CONSOLIDATED SALES AND REVENUES

The chart above graphically illustrates reasons for the change in Consolidated Sales and Revenues between the fourth quarter of 2016 (at left) and the fourth quarter of 2017 (at right). Items favorably impacting sales and revenues appear as upward stair steps with the corresponding dollar amounts above each bar, while items negatively impacting sales and revenues appear as downward stair steps with dollar amounts reflected in parentheses above each bar. Caterpillar management utilizes these charts internally to visually communicate with the company's Board of Directors and employees.

Total sales and revenues were $12.896 billion in the fourth quarter of 2017, an increase of $3.322 billion, or 35 percent, compared with $9.574 billion in the fourth quarter of 2016. The increase was primarily due to higher sales volume, mostly due to improved end-user demand. In addition, favorable changes in dealer inventories contributed to increased sales volume. The improvement in end-user demand was across all regions and most end markets. The favorable change in dealer inventories was primarily due to a decrease in the fourth quarter of 2016, compared to dealer inventories that were about flat in the fourth quarter of 2017. Dealer machine and engine inventories were about flat in the fourth quarter of 2017, compared to a decrease of about $800 million in the fourth quarter of 2016. Dealers are independent, and there could be many reasons for changes in their inventory levels, including their expectations of future demand and product delivery times. Dealers’ demand expectations take into account seasonal changes, macroeconomic conditions, machine rental rates and other factors. Delivery times can vary based on availability of product from Caterpillar factories and product distribution centers.

By segment, the largest sales volume increase was in Construction Industries, mostly due to higher end-user demand for construction equipment and the favorable impact of changes in dealer inventories. Energy & Transportation’s sales volume increased due to higher demand across all applications. Sales volume for Resource Industries increased due to higher end-user demand for equipment and aftermarket parts. Favorable price realization, primarily in Construction Industries and Resource Industries, also contributed to the sales improvement. Financial Products’ revenues were about flat.

Sales increased across all regions with the largest increase in North America. Sales improved 46 percent in North America primarily due to higher end-user demand for both equipment and aftermarket parts. Changes in dealer inventories were favorable as dealer inventories decreased in the fourth quarter of 2016 and increased slightly in the fourth quarter of 2017. EAME sales increased 38 percent primarily due to higher end-user demand for equipment and favorable price realization. Asia/Pacific sales increased 22 percent primarily due to higher end-user demand for construction equipment. About half of the sales improvement in Asia/Pacific was in China resulting from increased building construction and infrastructure investment. Sales increased 39 percent in Latin America due to stabilizing economic conditions in several countries in the region that resulted in improved end-user demand from low levels, as well as favorable changes in dealer inventories.

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CONSOLIDATED OPERATING PROFIT (LOSS)

The chart above graphically illustrates reasons for the change in Consolidated Operating Profit (Loss) between the fourth quarter of 2016 (at left) and the fourth quarter of 2017 (at right). Items favorably impacting operating profit appear as upward stair steps with the corresponding dollar amounts above each bar, while items negatively impacting operating profit appear as downward stair steps with dollar amounts reflected in parentheses above each bar. Caterpillar management utilizes these charts internally to visually communicate with the company's Board of Directors and employees. The bar entitled Other includes consolidating adjustments and Machinery, Energy & Transportation other operating (income) expenses.

Operating profit for the fourth quarter of 2017 was $1.161 billion, compared with a loss of $1.262 billion in the fourth quarter of 2016. The increase of $2.423 billion was due to higher sales volume, a decrease in mark-to-market losses related to pension and OPEB plans and the absence of a goodwill impairment charge in Resource Industries in 2016. Favorable price realization, lower variable manufacturing costs and lower restructuring costs were mostly offset by higher period costs. Price realization was favorable, primarily in Construction Industries and Resource Industries. Variable manufacturing costs were lower primarily due to the favorable impact from cost absorption and lower warranty expense. Cost absorption was favorable as inventory was about flat in the fourth quarter of 2017, compared to a reduction in inventory in the fourth quarter of 2016. Material costs were slightly unfavorable due to increases in steel prices. Period costs were higher primarily due to higher short-term incentive compensation expense. Also contributing to increased period costs were targeted investments and higher manufacturing costs to support higher production volumes, partially offset by lower depreciation expense.

Restructuring costs were $245 million in the fourth quarter of 2017, compared with $395 million in the fourth quarter of 2016.

Short-term incentive compensation expense was about $350 million in the fourth quarter of 2017, compared to about $50 million in the fourth quarter of 2016.

Other Profit/Loss Items

- Interest expense excluding Financial Products in the fourth quarter of 2017 was $169 million, an increase of $49 million from the fourth quarter of 2016, primarily due to an early debt retirement.
- Other income/expense in the fourth quarter of 2017 was income of $119 million, compared with income of $34 million in the fourth quarter of 2016. The favorable change was primarily a result of gains on the sale of securities.
- The provision for income taxes in the fourth quarter reflects an annual effective tax rate of 27.7 percent, compared to 36.4 percent for the full year of 2016, excluding the items discussed below. The effective tax rate related to 2017 full-year adjusted profit before tax, excluding a discrete benefit from stock-based compensation awards, was 27 percent, compared to 26 percent in 2016.

The provision for income taxes in the fourth quarter of 2017 also includes a charge of $2.371 billion due to the enactment of U.S. tax reform legislation on December 22, 2017. The provisionally estimated charge includes a $596 million write-

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down of net deferred tax assets to reflect the reduction in the U.S. corporate tax rate from 35 percent to 21 percent beginning January 1, 2018, with the remainder primarily related to the cost of a mandatory deemed repatriation of non-U.S. earnings. We believe this charge is a reasonable estimate, as of January 18, 2018, that may change as additional required information is prepared and analyzed, interpretations and assumptions are refined, additional guidance is issued, and due to actions we may take as a result of the legislation. Three items partially offset this charge:

- A $130 million benefit related to the change from the third-quarter estimated annual tax rate of 32 percent to 27.7 percent for the full year of 2017, primarily due to a more favorable geographic mix of profits from a tax perspective, including the impact of U.S. pension and OPEB mark-to-market losses taxed at higher U.S. rates.
- A non-cash benefit of $111 million, net of U.S. federal tax at 35 percent, from reductions in the valuation allowance against U.S. state deferred tax assets due to improved profits in the United States.
- A tax benefit of $19 million for the settlement of stock-based compensation awards with associated tax deductions in excess of cumulative U.S. GAAP compensation expense.

The provision for income taxes in the fourth quarter of 2016 also included a charge of $170 million related to the change from the third quarter of 2016 estimated annual tax rate. In addition, the valuation allowance against U.S. state deferred tax assets was increased in 2016, resulting in a $141 million non-cash charge, net of U.S. federal tax at 35 percent.

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Segment Information
Sales and Revenues by Geographic Region

(Millions of dollars)	Total	% Change	North America	% Change	Latin America	% Change	EAME	% Change	Asia/ Pacific	% Change
Fourth Quarter 2017										
Construction Industries [1]	$5,258	47 %	$2,346	50 %	$392	48 %	$976	56 %	$1,544	36 %
Resource Industries [2]	2,205	53 %	791	68 %	384	74 %	475	60 %	555	22 %
Energy & Transportation [3]	4,706	22 %	2,327	35 %	374	8 %	1,286	21 %	719	— %
All Other Segments [4]	52	63 %	22	100 %	1	— %	14	180 %	15	(6)%
Corporate Items and Eliminations	(27)	—	(27)		—		—		—	
Machinery, Energy & Transportation Sales	12,194	37 %	5,459	46 %	1,151	39 %	2,751	38 %	2,833	22 %
Financial Products Segment	783	6 %	505	9 %	80	(4)%	107	8 %	91	(5)%
Corporate Items and Eliminations	(81)		(50)		(12)		(6)		(13)	
Financial Products Revenues	702	2 %	455	5 %	68	(8)%	101	6 %	78	(8)%
Consolidated Sales and Revenues	$12,896	35 %	$5,914	41 %	$1,219	35 %	$2,852	37 %	$2,911	21 %
Fourth Quarter 2016										
Construction Industries [1]	$3,589		$1,569		$264		$624		$1,132	
Resource Industries [2]	1,443		471		221		297		454	
Energy & Transportation [3]	3,849		1,722		347		1,063		717	
All Other Segments [4]	32		11		—		5		16	
Corporate Items and Eliminations	(28)		(23)		(2)		(2)		(1)	
Machinery, Energy & Transportation Sales	8,885		3,750		830		1,987		2,318	
Financial Products Segment	742		464		83		99		96	
Corporate Items and Eliminations	(53)		(29)		(9)		(4)		(11)	
Financial Products Revenues	689		435		74		95		85	
Consolidated Sales and Revenues	$9,574		$4,185		$904		$2,082		$2,403	

[1] Does not include inter-segment sales of $37 million and $31 million in the fourth quarter 2017 and 2016, respectively.

[2] Does not include inter-segment sales of $103 million and $87 million in the fourth quarter 2017 and 2016, respectively.

[3] Does not include inter-segment sales of $934 million and $621 million in the fourth quarter 2017 and 2016, respectively.

[4] Does not include inter-segment sales of $103 million and $117 million in the fourth quarter 2017 and 2016, respectively.

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Sales and Revenues by Segment

(Millions of dollars)	Fourth Quarter 2016	Sales Volume	Price Realization	Currency	Other	Fourth Quarter 2017	$ Change	% Change
Construction Industries	$3,589	$1,502	$ 146	$ 21	$—	$5,258	$1,669	47 %
Resource Industries	1,443	669	84	9	—	2,205	762	53 %
Energy & Transportation	3,849	808	(17)	66	—	4,706	857	22 %
All Other Segments	32	20	—	—	—	52	20	63 %
Corporate Items and Eliminations	(28)	1	—	—	—	(27)	1	
Machinery, Energy & Transportation Sales	8,885	3,000	213	96	—	12,194	3,309	37 %
Financial Products Segment	742	—	—	—	41	783	41	6 %
Corporate Items and Eliminations	(53)	—	—	—	(28)	(81)	(28)	
Financial Products Revenues	689	—	—	—	13	702	13	2 %
Consolidated Sales and Revenues	$9,574	$3,000	$ 213	$ 96	$13	$12,896	$3,322	35 %

Profit (Loss) by Segment

(Millions of dollars)	Fourth Quarter 2017	Fourth Quarter 2016	$ Change	% Change
Construction Industries	$838	$334	$504	151 %
Resource Industries	209	(711)	920	n/a
Energy & Transportation	881	638	243	38 %
All Other Segments	(16)	(34)	18	53 %
Corporate Items and Eliminations	(821)	(1,572)	751	
Machinery, Energy & Transportation	1,091	(1,345)	2,436	n/a
Financial Products Segment	233	149	84	56 %
Corporate Items and Eliminations	(77)	(9)	(68)	
Financial Products	156	140	16	11 %
Consolidating Adjustments	(86)	(57)	(29)	
Consolidated Operating Profit (Loss)	$1,161	$(1,262)	$2,423	n/a

Construction Industries

Construction Industries' sales were $5.258 billion in the fourth quarter of 2017, compared with $3.589 billion in the fourth quarter of 2016. The increase was due to higher sales volume and favorable price realization.

- Sales volume increased primarily due to higher end-user demand for construction equipment. In addition, there was a favorable impact from changes in dealer inventories as inventories decreased more in the fourth quarter of 2016 than in the fourth quarter of 2017.
- Price realization was favorable due to a weak pricing environment in the fourth quarter of 2016 and previously implemented price increases.

Sales increased across all regions with the largest increases in North America and Asia/Pacific.

- In North America, the sales increase was due to higher end-user demand for construction equipment, mostly due to oil and gas, residential and non-residential construction activities. The impact of favorable changes in dealer inventories, as inventories decreased in the fourth quarter of 2016 and were about flat in the fourth quarter of 2017, also

contributed to increased sales.

- Sales in Asia/Pacific were higher as a result of an increase in end-user demand, primarily in China, stemming from increased building construction and infrastructure investment.
- Sales increased in EAME primarily due to higher end-user demand for construction equipment, reflecting improved economic conditions across much of the region. Favorable price realization also contributed to increased sales.

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- Although construction activity remained weak in Latin America, sales were higher as end-user demand increased from low levels due to stabilizing economic conditions in several countries in the region.

Construction Industries' profit was $838 million in the fourth quarter of 2017, compared with $334 million in the fourth quarter of 2016. The increase in profit was primarily due to higher sales volume, favorable price realization and variable manufacturing efficiencies, partially offset by unfavorable period costs and higher material costs, primarily for steel. The increase in period costs was due to higher short-term incentive compensation expense, targeted investments and higher manufacturing period costs to support increased production volumes.

Resource Industries

Resource Industries' sales were $2.205 billion in the fourth quarter of 2017, an increase of $762 million from the fourth quarter of 2016. The increase was primarily due to higher end-user demand for equipment and aftermarket parts in all regions, favorable impact of changes in dealer inventories and favorable price realization. Dealer deliveries for new equipment increased significantly. Positive commodity price trends in 2017 drove improved market conditions and better financial health of mining companies. After several years of low investment, miners began to increase capital expenditures, reflecting more confidence in their end markets. Dealer inventories increased slightly in the fourth quarter of 2017, compared with a slight decrease in the fourth quarter of 2016.

Resource Industries' profit was $209 million in the fourth quarter of 2017, compared with a loss of $711 million in the fourth quarter of 2016. The improvement was primarily due to the absence of a goodwill impairment charge of $595 million in the fourth quarter of 2016. Higher sales volume and favorable price realization also contributed to increased profit.

Energy & Transportation

Energy & Transportation's sales were $4.706 billion in the fourth quarter of 2017, compared with $3.849 billion in the fourth quarter of 2016. The increase was primarily due to higher sales volume across all applications.

- Oil and Gas - Sales increased primarily due to higher demand for equipment used in gas compression and well servicing applications in North America.
- Transportation - Sales were higher primarily in North America for rail services, driven by increased rail traffic, and due to additional deliveries of freight locomotives.
- Industrial - Sales were higher primarily in EAME due to increased demand for equipment used in electric power and agricultural end-user applications and aftermarket parts.
- Power Generation - Sales increased primarily in EAME due to the timing of projects.

Energy & Transportation's profit was $881 million in the fourth quarter of 2017, compared with $638 million in the fourth quarter of 2016. The increase was primarily due to higher sales volume, partially offset by higher period costs. The increase in period costs was primarily due to higher short-term incentive compensation expense, costs associated with higher production and targeted investments.

Financial Products Segment

Financial Products' segment revenues were $783 million in the fourth quarter of 2017, an increase of $41 million, or 6 percent, from the fourth quarter of 2016. The increase was primarily due to higher average financing rates in North America, higher average earning assets in EAME and Asia/Pacific and a favorable impact from intercompany lending activity in North America. These favorable impacts were partially offset by lower average financing rates in Asia/Pacific.

Financial Products' segment profit was $233 million in the fourth quarter of 2017, compared with $149 million in the fourth quarter of 2016. The increase was primarily due to higher gains on sales of securities at Insurance Services and an increase in net yield on average earning assets.

Corporate Items and Eliminations

Expense for corporate items and eliminations was $898 million in the fourth quarter of 2017, a decrease of $683 million from the fourth quarter of 2016. Corporate items and eliminations include: restructuring costs; corporate-level

expenses; timing differences, as some expenses are reported in segment profit on a cash basis; retirement benefit costs other than service cost;

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currency differences for ME&T, as segment profit is reported using annual fixed exchange rates; cost of sales methodology differences, as segments use a current cost methodology; and inter-segment eliminations.
The decrease in expense was primarily due to the favorable impact of lower mark-to-market losses related to pension and OPEB plans and lower restructuring costs, partially offset by methodology differences and higher short-term incentive compensation expense. Mark-to-market losses in the fourth quarter of 2017 were $301 million, compared to mark-to-market losses of $985 million in the fourth quarter of 2016.

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2016 COMPARED WITH 2015

CONSOLIDATED SALES AND REVENUES

The chart above graphically illustrates reasons for the change in Consolidated Sales and Revenues between 2015 (at left) and 2016 (at right). Items favorably impacting sales and revenues appear as upward stair steps with the corresponding dollar amounts above each bar, while items negatively impacting sales and revenues appear as downward stair steps with dollar amounts reflected in parentheses above each bar. Caterpillar management utilizes these charts internally to visually communicate with the company's Board of Directors and employees.

Total sales and revenues were $38.537 billion in 2016, compared with $47.011 billion in 2015, a decline of $8.474 billion, or 18 percent. The decrease was primarily due to lower sales volume attributable to continued weak commodity prices globally and economic weakness in many countries. While sales for both new equipment and aftermarket parts declined, most of the decrease was for new equipment. The unfavorable impact of price realization, primarily in Construction Industries, also contributed to the decline.

Sales volume was also unfavorably impacted by changes in dealer machine and engine inventories as inventories decreased about $1.6 billion in 2016 compared with a decrease of about $1.0 billion in 2015. The unfavorable impact of changes in dealer inventories was primarily in North America. Dealers are independent, and there could be many reasons for changes in their inventory levels, including their expectations of future demand and product delivery times. Dealers' demand expectations take into account seasonal changes, macroeconomic conditions, machine rental rates and other factors. Delivery times can vary based on availability of product from Caterpillar factories and product distribution centers. We believe some of the expected dealer inventory reduction is a result of increased machine availability through our factories and product distribution centers.

Sales declined in all regions. In North America, sales decreased 19 percent due to lower end-user demand primarily driven by Construction Industries and Energy & Transportation, and the unfavorable impact of changes in dealer inventories, primarily in Construction Industries. In EAME, sales declined 22 percent, primarily in Africa/Middle East due to weak economic conditions resulting from low oil and other commodity prices and an uncertain investment environment. Sales decreased 29 percent in Latin America, primarily due to widespread economic weakness across the region. The most significant decreases were in Mexico and Brazil. Asia/Pacific sales declined 9 percent, primarily due to lower end-user demand for Energy & Transportation applications and products used in mining, partially offset by an increase in demand for construction equipment mostly in China.

Energy & Transportation's sales declined 22 percent, largely due to lower end-user demand for oil and gas and transportation applications. Construction Industries' sales decreased 12 percent due to lower demand from end users, unfavorable price realization and the unfavorable impact of changes in dealer inventories. Resource Industries' sales declined 26 percent, mostly due to continued low end-user demand. Financial Products' segment revenues were about flat.

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CONSOLIDATED OPERATING PROFIT

The chart above graphically illustrates reasons for the change in Consolidated Operating Profit between 2015 (at left) and 2016 (at right). Items favorably impacting operating profit appear as upward stair steps with the corresponding dollar amounts above each bar, while items negatively impacting operating profit appear as downward stair steps with dollar amounts reflected in parentheses above each bar. Caterpillar management utilizes these charts internally to visually communicate with the company's Board of Directors and employees. The bar entitled Other includes consolidating adjustments and Machinery, Energy & Transportation other operating (income) expenses.

Operating profit for 2016 was $498 million, compared with $3.785 billion in 2015. The decrease in profit was primarily due to lower sales volume, including an unfavorable mix of products. The decrease in profit also included an unfavorable impact from mark-to-market losses related to remeasurement of our pension and OPEB plans and a goodwill impairment charge in Resource Industries. In addition, price realization, Financial Products and restructuring costs were unfavorable. These items were partially offset by favorable period costs and variable manufacturing costs.

The unfavorable price realization resulted from competitive market conditions, primarily in Construction Industries. We saw competitive pressure during 2016 that started in the last half of 2015 driven by excess industry capacity, unfavorable currency pressure as the impact of the strong dollar benefited competitors based outside the United States and an overall weak economic environment.

Period costs were lower, primarily due to the impact from substantial restructuring and cost reduction actions and lower short-term incentive compensation expense. The reductions primarily impacted period manufacturing costs and selling, general and administrative expenses (SG&A). Variable manufacturing costs were favorable primarily due to improved material costs and the favorable impact of cost absorption. Cost absorption was favorable due to inventory decreasing more significantly in 2015 than in 2016.

Restructuring costs of $1.019 billion in 2016 were related to multiple restructuring actions across the company, primarily in Resource Industries and Energy & Transportation. In 2015, restructuring costs were $898 million.

Short-term incentive compensation expense is directly related to financial and operational performance measured against targets set annually. Expense in 2016 was about $250 million as compared to about $585 million in 2015.

Other Profit/Loss Items

Other income/expense in 2016 was income of $146 million, compared with income of $161 million in 2015. The unfavorable change was primarily due to the absence of a gain of $120 million on the sale of the remaining 35 percent interest in our former third-party logistics business. This was mostly offset by a favorable net impact from currency translation and hedging gains and losses. Currency translation and hedging net losses in 2016 were significantly less than the net losses in 2015.

The provision for income taxes for 2016 reflects an annual effective tax rate of 36.4 percent compared to 25.5 percent for 2015, excluding the items discussed in the paragraph below. The increase was primarily due to the negative impact from the portion of the Surface Mining & Technology goodwill impairment not deductible for tax purposes offsetting a favorable

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geographic mix of profits from a tax perspective. The effective tax rate related to 2016 full-year adjusted profit before tax was 26 percent.

The provision for income taxes for 2016 also included a $141 million non-cash charge for increases in the valuation allowance for U.S. state deferred tax assets due to recent U.S. GAAP losses that were expected to recur in 2017 in certain state jurisdictions and the weight given this negative objective evidence under income tax accounting guidance. The provision for income taxes for 2015 also included a $42 million net charge to adjust prior years' U.S. taxes.

Segment Information

Sales and Revenues by Geographic Region

(Millions of dollars)	Total	% Change	North America	% Change	Latin America	% Change	EAME	% Change	Asia/ Pacific	% Change
2016										
Construction Industries [1]	$15,612	(12)%	$7,529	(16)%	$1,059	(32)%	$3,270	(17)%	$3,754	13 %
Resource Industries [2]	5,726	(26)%	2,068	(30)%	1,001	(19)%	1,179	(33)%	1,478	(17)%
Energy & Transportation [3]	14,411	(22)%	6,680	(19)%	1,104	(33)%	4,201	(22)%	2,426	(26)%
All Other Segments [4]	139	(32)%	46	(42)%	3	(79)%	28	(46)%	62	7 %
Corporate Items and Eliminations	(115)		(98)		(3)		(9)		(5)	
Machinery, Energy & Transportation Sales	35,773	(19)%	16,225	(19)%	3,164	(29)%	8,669	(22)%	7,715	(9)%
Financial Products Segment	2,993	(3)%	1,862	3 %	336	(16)%	401	(2)%	394	(14)%
Corporate Items and Eliminations	(229)		(125)		(45)		(17)		(42)	
Financial Products Revenues	2,764	(3)%	1,737	2 %	291	(19)%	384	(1)%	352	(16)%
Consolidated Sales and Revenues	$38,537	(18)%	$17,962	(18)%	$3,455	(28)%	$9,053	(21)%	$8,067	(9)%
2015										
Construction Industries [1]	$17,797		$9,006		$1,546		$3,930		$3,315	
Resource Industries [2]	7,739		2,953		1,231		1,769		1,786	
Energy & Transportation [3]	18,519		8,204		1,651		5,365		3,299	
All Other Segments [4]	203		79		14		52		58	
Corporate Items and Eliminations	(111)		(118)		2		—		5	
Machinery, Energy & Transportation Sales	44,147		20,124		4,444		11,116		8,463	
Financial Products Segment	3,078		1,812		400		408		458	
Corporate Items and Eliminations	(214)		(111)		(42)		(22)		(39)	

Financial Products Revenues	2,864	1,701	358	386	419
Consolidated Sales and Revenues	$47,011	$21,825	$4,802	$11,502	$8,882

[1] Does not include inter-segment sales of $78 million and $109 million in 2016 and 2015, respectively.
[2] Does not include inter-segment sales of $284 million and $332 million in 2016 and 2015, respectively.
[3] Does not include inter-segment sales of $2,540 million and $2,877 million in 2016 and 2015, respectively.
[4] Does not include inter-segment sales of $405 million and $390 million in 2016 and 2015, respectively.

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Sales and Revenues by Segment

(Millions of dollars)	2015	Sales Volume	Price Realization	Currency	Other	2016	$ Change	% Change
Construction Industries	$17,797	$(1,632)	$ (539)	$ (14)	$—	$15,612	$(2,185)	(12)%
Resource Industries	7,739	(1,852)	(155)	(6)	—	5,726	(2,013)	(26)%
Energy & Transportation	18,519	(3,934)	(68)	(106)	—	14,411	(4,108)	(22)%
All Other Segments	203	(63)	—	(1)	—	139	(64)	(32)%
Corporate Items and Eliminations	(111)	(8)	2	2	—	(115)	(4)	
Machinery, Energy & Transportation Sales	44,147	(7,489)	(760)	(125)	—	35,773	(8,374)	(19)%
Financial Products Segment	3,078	—	—	—	(85)	2,993	(85)	(3)%
Corporate Items and Eliminations	(214)	—	—	—	(15)	(229)	(15)	
Financial Products Revenues	2,864	—	—	—	(100)	2,764	(100)	(3)%
Consolidated Sales and Revenues	$47,011	$(7,489)	$ (760)	$ (125)	$(100)	$38,537	$(8,474)	(18)%

Profit (Loss) by Segment

(Millions of dollars)	2016	2015	$ Change	% Change
Construction Industries	$1,650	$1,865	$(215)	(12)%
Resource Industries	(1,047)	1	(1,048)	n/a
Energy & Transportation	2,222	3,390	(1,168)	(34)%
All Other Segments	(77)	(75)	(2)	(3)%
Corporate Items and Eliminations	(2,659)	(1,911)	(748)	
Machinery, Energy & Transportation	89	3,270	(3,181)	(97)%
Financial Products Segment	702	809	(107)	(13)%
Corporate Items and Eliminations	(53)	(35)	(18)	
Financial Products	649	774	(125)	(16)%
Consolidating Adjustments	(240)	(259)	19	
Consolidated Operating Profit	$498	$3,785	$(3,287)	(87)%

Construction Industries

Construction Industries' sales were $15.612 billion in 2016, a decrease of $2.185 billion, or 12 percent, from 2015. The decrease in sales was primarily due to lower volume and unfavorable price realization. While sales declined for both new equipment and aftermarket parts, most of the decrease was for new equipment.

- The sales volume decline was primarily due to a decrease in deliveries to end users and the unfavorable impact of changes in dealer inventories. Dealers lowered inventories more significantly in 2016 than in 2015.
- Price realization was unfavorable $539 million due to competitive market conditions resulting from excess industry capacity and an overall weak economic environment.

Sales decreased in North America, EAME and Latin America and were higher in Asia/Pacific.

- In North America, the sales decline was primarily due to lower end-user demand. The sales decline was also due to a decrease in dealer inventories in 2016 compared to relatively flat inventories in 2015. Unfavorable price realization resulted from competitive market conditions. The availability of used equipment negatively impacted sales in North America during 2016.
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Lower sales in EAME were primarily due to lower end-user demand and the unfavorable impact of changes in dealer inventories. In addition, price realization was unfavorable across the region due to competitive market conditions. Dealer inventories decreased in 2016 while inventories remained flat in 2015.

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- In Latin America, end-user demand was down across most of the region, with the most significant decline in Brazil due to weak economic conditions.
- Sales in Asia/Pacific were higher as a result of an increase in end-user demand primarily in China stemming from increased government support in infrastructure and residential investment. In addition, the impact of changes in dealer inventories was favorable as inventories increased slightly in 2016 compared to a decrease in inventories in 2015.

Construction Industries' profit was $1.650 billion in 2016, compared with $1.865 billion in 2015. The decrease in profit was primarily due to lower sales volume and unfavorable price realization resulting from competitive market conditions. The decline was partially offset by favorable costs, primarily due to the impact from restructuring and cost reduction actions, improved material costs, the favorable impact of cost absorption and the absence of an unfavorable impact from litigation in 2015. The impact of cost absorption was favorable as inventory decreased more significantly in 2015 than in 2016.

Resource Industries

Resource Industries' sales were $5.726 billion in 2016, a decrease of $2.013 billion, or 26 percent, from 2015. The decline was almost entirely due to lower sales volume. Sales were lower for both new equipment and aftermarket parts, however, most of the decrease was for new equipment. Aftermarket parts sales increased sequentially in each of the last three quarters of 2016.

The sales decrease was primarily due to lower end-user demand across all regions. While most commodity prices improved in the fourth quarter over a year earlier, current prices were not sufficient to drive an increase in short-term demand for new equipment. We believe idle mining trucks on customer sites also had a negative impact on end-user demand. In 2016, mining customers continued to focus on improving productivity in existing mines and reducing their total capital expenditures, as they had for several years.

Resource Industries incurred a loss of $1.047 billion in 2016, compared with profit of $1 million in 2015. The most significant item impacting 2016 was a goodwill impairment charge of $595 million related to the Surface Mining & Technology reporting unit. Excluding the impairment charge, the remaining unfavorable change was mostly due to lower sales volume and unfavorable price realization. These items were partially offset by lower costs due to the impact from restructuring and cost reduction actions, improved material costs and lower short-term incentive compensation expense.

Energy & Transportation

Energy & Transportation's sales were $14.411 billion in 2016, a decrease of $4.108 billion, or 22 percent, from 2015. The decrease was almost entirely the result of lower sales volume. Sales decreased in all applications with oil and gas and transportation representing nearly 80 percent of the Energy & Transportation decline.

- Oil and Gas - Sales continued to decrease in all regions due to low oil prices. Although oil prices were low in 2015 and 2016, our sales during the first half of 2015 benefited from a strong order backlog. The sales decline was most significant in equipment used for production, drilling and well servicing.
- Transportation - Sales decreased in all geographic regions. The most significant decline was in North America, primarily due to significant weakness in the rail industry. Rail remains challenged with low traffic volume and a significant number of idle locomotives. We believe our sales into the rail industry, including rail services and aftermarket, are being negatively impacted by idled fleets resulting from weak commodity prices. In Asia/Pacific, the decrease was due to the absence of a large sale of locomotives in 2015 and a decline in demand for equipment used in marine applications, primarily for work boats. Demand in Latin America and EAME were also negatively impacted by the weakness in the rail industry.
- Power Generation - Sales decreased in all regions, but primarily in EAME. The decline in EAME was primarily a result of continued weakness in the Middle East with continued low oil prices limiting investments. The declines in both North America and Asia/Pacific were primarily due to the absence of several large projects and weakness in power generation demand for oil and gas development. The decline in Latin America was primarily due to weak economic conditions.
-

Industrial - Sales were lower in EAME, North America and Latin America and about flat in Asia Pacific. The decline in sales was primarily due to lower end-user demand for most industrial applications.

Energy & Transportation’s profit was $2.222 billion in 2016, compared with $3.390 billion in 2015. The decline was due to a decrease in sales volume, including an unfavorable mix of products. This was partially offset by lower costs primarily due to restructuring and cost reduction actions, favorable material costs and lower short-term incentive compensation expense.

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Financial Products Segment

Financial Products' revenues were $2.993 billion, a decrease of $85 million, or 3 percent, from 2015. The decline was primarily due to lower average earning assets in Asia/Pacific and Latin America, an unfavorable impact from returned or repossessed equipment, primarily in North America and lower average financing rates in Latin America. These decreases were partially offset by higher average financing rates and higher average earning assets in North America.

Financial Products' profit was $702 million in 2016, compared with $809 million in 2015. The decrease was primarily due to an unfavorable impact from returned or repossessed equipment, an unfavorable impact from lower average earning assets, a decrease in net yield on average earning assets reflecting geographic mix changes and an increase in the provision for credit losses at Cat Financial. These unfavorable impacts were partially offset by a decrease in SG&A expenses.

At the end of 2016, past dues at Cat Financial were 2.38 percent, compared with 2.14 percent at the end of 2015. The increase in past dues was primarily driven by the European marine portfolio. Write-offs, net of recoveries, were $123 million for the full-year 2016, compared with $155 million for the full-year 2015.

As of December 31, 2016, Cat Financial's allowance for credit losses totaled $343 million, or 1.29 percent of net finance receivables, compared with $338 million, or 1.22 percent of net finance receivables at year-end 2015.

Corporate Items and Eliminations

Expense for corporate items and eliminations was $2.712 billion in 2016, which was an increase of $766 million compared with 2015. Corporate items and eliminations include: corporate-level expenses; restructuring costs; timing differences, as some expenses are reported in segment profit on a cash basis; retirement benefit costs other than service cost; currency differences for ME&T, as segment profit is reported using annual fixed exchange rates; cost of sales methodology differences as segments use a current cost methodology; and inter-segment eliminations.

The most significant item was the unfavorable impact of mark-to-market losses related to remeasurement of our pension and OPEB plans. Mark-to-market losses in 2016 were $985 million compared to mark-to-market losses of $179 million in 2015. The remaining decrease in expense of $40 million was primarily due to a favorable impact from methodology differences, partially offset by a $121 million increase in restructuring costs.

RESTRUCTURING COSTS

Restructuring costs for 2017, 2016 and 2015 were as follows:

(Millions of dollars)	2017	2016	2015
Employee separations [1]	$525	$297	$641
Contract terminations [1]	183	62	—
Long-lived asset impairments [1]	346	391	127
Defined benefit plan curtailments and termination benefits [1]	29	7	82
Other [2]	173	262	48
Total restructuring costs	$1,256	$1,019	$898

[1] Recognized in Other operating (income) expenses.

[2] Represents costs related to our restructuring programs, primarily for accelerated depreciation, project management costs, equipment relocation and inventory write-downs, and also LIFO inventory decrement benefits from inventory liquidations at closed facilities (all of which are primarily included in Cost of goods sold).

In 2017, about half of the restructuring costs were related to the closure of the facility in Gosselies, Belgium, within Construction Industries, and the remainder was related to other restructuring actions across the company. The

restructuring costs in 2016 were primarily related to actions in Resource Industries in response to continued weakness in the mining industry. In addition, costs in 2016 resulted from our decision to discontinue production of on-highway vocational trucks within Energy & Transportation and other restructuring actions across the company. The restructuring costs in 2015 were primarily related to several restructuring programs across the company.

Restructuring costs are a reconciling item between Segment profit and Consolidated profit before taxes.

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The following table summarizes the 2016 and 2017 employee separation activity:

(Millions of dollars)	
Liability balance at December 31, 2015	$483
Increase in liability (separation charges)	297
Reduction in liability (payments)	(633)
Liability balance at December 31, 2016	$147
Increase in liability (separation charges)	525
Reduction in liability (payments)	(423)
Liability balance at December 31, 2017	$249

Most of the remaining liability balance as of December 31, 2017 is expected to be paid in 2018 and primarily includes employee separation payments related to closure of the Gosselies, Belgium, facility.

In March 2017, Caterpillar informed Belgian authorities of the decision to proceed to a collective dismissal, which will lead to the closure of the Gosselies site, impacting about 2,000 employees. Production of Caterpillar products at the Gosselies site ended during the second quarter of 2017. The other operations and functions at the Gosselies site are expected to be gradually phased out by the end of the second quarter of 2018. We estimate restructuring costs incurred under this program to be about $675 million. In 2017, we recognized $653 million of restructuring costs which included $436 million of employee separation costs, $205 million for long-lived asset impairments and $77 million of other costs partially offset by a $65 million LIFO inventory decrement benefit. The remaining costs are expected to be recognized in 2018.

Restructuring costs for the year ended December 31, 2016 were $1,019 million. Throughout 2016, we initiated the following restructuring plans:

- In February 2016, we made the decision to discontinue production of on-highway vocational trucks. Based on the business climate in the truck industry and a thorough evaluation of the business, the company decided it would withdraw from this market. We recognized $104 million of restructuring costs, primarily related to long-lived asset impairments and sales discounts, which is substantially all the costs expected under this program.

- In the second half of 2016, we took additional restructuring actions in Resource Industries, including ending the production of track drills; pursuing strategic alternatives related to room and pillar products; consolidation of two product development divisions; and additional actions in response to ongoing weakness in the mining industry. For the year ended December 31, 2016, we incurred $369 million of restructuring costs for these plans primarily related to long-lived asset impairments, employee separation costs and inventory write-downs.

In September 2015, we announced a large scale restructuring plan (the Plan) including a voluntary retirement enhancement program for qualifying U.S. employees, several voluntary separation programs outside of the U.S., additional involuntary programs throughout the company and manufacturing facility consolidations and closures expected to occur through 2018. The largest action among those included in the Plan was related to our European manufacturing footprint which led to the Gosselies, Belgium, facility closure as discussed above. We incurred $817 million, $281 million and $569 million in 2017, 2016 and 2015, respectively, for a total of $1,667 million. We expect to recognize approximately $200 million of additional restructuring costs related to the Plan in 2018.

In 2018, we expect to incur about $400 million of restructuring costs primarily related to ongoing manufacturing facility consolidations to achieve a flexible and competitive cost structure. We are expecting about $250 million of cost reduction in 2018 from lower operating costs, primarily SG&A expenses and Cost of goods sold resulting from

restructuring actions.

GLOSSARY OF TERMS

1. Adjusted Profit Per Share - Profit per share excluding restructuring costs and pension and OPEB mark-to-market losses for 2017 and 2016. For 2017, adjusted profit per share also excludes a gain on the sale of an equity investment in IronPlanet recognized in the second quarter, as well as state deferred tax valuation allowance reversal and the impact of the U.S. tax reform in the fourth quarter. For 2016, adjusted profit per share also excludes a goodwill impairment charge and state deferred tax valuation allowance recognized in the fourth quarter.

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2. All Other Segments - Primarily includes activities such as: business strategy, product management and development, and manufacturing of filters and fluids, undercarriage, tires and rims, ground engaging tools, fluid transfer products, precision seals, and rubber sealing and connecting components primarily for Cat® products; parts distribution; distribution services responsible for dealer development and administration including a wholly owned dealer in Japan, dealer portfolio management and ensuring the most efficient and effective distribution of machines, engines and parts; digital investments for new customer and dealer solutions that integrate data analytics with state-of-the art digital technologies while transforming the buying experience.

3. Consolidating Adjustments - Elimination of transactions between Machinery, Energy & Transportation and Financial Products.

4. Construction Industries - A segment primarily responsible for supporting customers using machinery in infrastructure, forestry and building construction applications. Responsibilities include business strategy, product design, product management and development, manufacturing, marketing and sales and product support. The product portfolio includes backhoe loaders, small wheel loaders, small track-type tractors, skid steer loaders, compact track loaders, multi-terrain loaders, mini excavators, compact wheel loaders, telehandlers, select work tools, small, medium and large track excavators, wheel excavators, medium wheel loaders, medium track-type tractors, track-type loaders, motor graders, pipelayers, forestry and paving products and related parts.

5. Currency - With respect to sales and revenues, currency represents the translation impact on sales resulting from changes in foreign currency exchange rates versus the U.S. dollar. With respect to operating profit, currency represents the net translation impact on sales and operating costs resulting from changes in foreign currency exchange rates versus the U.S. dollar. Currency only includes the impact on sales and operating profit for the Machinery, Energy & Transportation lines of business excluding restructuring costs; currency impacts on Financial Products' revenues and operating profit are included in the Financial Products' portions of the respective analyses. With respect to other income/expense, currency represents the effects of forward and option contracts entered into by the company to reduce the risk of fluctuations in exchange rates (hedging) and the net effect of changes in foreign currency exchange rates on our foreign currency assets and liabilities for consolidated results (translation).

6. Debt-to-Capital Ratio - A key measure of Machinery, Energy & Transportation's financial strength used by management. The metric is defined as Machinery, Energy & Transportation's short-term borrowings, long-term debt due within one year and long-term debt due after one year (debt) divided by the sum of Machinery, Energy & Transportation's debt and shareholders' equity. Debt also includes Machinery, Energy & Transportation's long-term borrowings from Financial Products.

7. EAME - A geographic region including Europe, Africa, the Middle East and the Commonwealth of Independent States (CIS).

8. Earning Assets - Assets consisting primarily of total finance receivables net of unearned income, plus equipment on operating leases, less accumulated depreciation at Cat Financial.

9. Energy & Transportation - A segment primarily responsible for supporting customers using reciprocating engines, turbines, diesel-electric locomotives and related parts across industries serving Power Generation, Industrial, Oil and Gas and Transportation applications, including marine and rail-related businesses. Responsibilities include business strategy, product design, product management and development, manufacturing, marketing and sales and product support of turbines and turbine-related services, reciprocating engine-powered generator sets, integrated systems used in the electric power generation industry, reciprocating engines and integrated systems and solutions for the marine and oil and gas industries; reciprocating engines supplied to the industrial industry as well as Cat machinery; the remanufacturing of Cat engines and components and remanufacturing services for other companies;

the business strategy, product design, product management and development, manufacturing, remanufacturing, leasing and service of diesel-electric locomotives and components and other rail-related products and services and product support of on-highway vocational trucks for North America.

10. Financial Products Segment - Provides financing alternatives to customers and dealers around the world for Caterpillar products, as well as financing for vehicles, power generation facilities and marine vessels that, in most cases, incorporate Caterpillar products. Financing plans include operating and finance leases, installment sale contracts, working capital loans and wholesale financing plans. The segment also provides insurance and risk management products and services that help customers and dealers manage their business risk. Insurance and risk management products offered include physical damage insurance, inventory protection plans, extended service coverage for machines and engines, and dealer property and casualty insurance. The various forms of financing, insurance and risk management products offered to customers and dealers help support the purchase and lease of our equipment. Financial Products segment profit is determined on a pretax basis and includes other income/expense items.

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11. Latin America - A geographic region including Central and South American countries and Mexico.

12. Machinery, Energy & Transportation (ME&T) - Represents the aggregate total of Construction Industries, Resource Industries, Energy & Transportation and All Other Segments and related corporate items and eliminations.

13. Machinery, Energy & Transportation Other Operating (Income) Expenses - Comprised primarily of gains/losses on disposal of long-lived assets, gains/losses on divestitures and legal settlements and accruals. Restructuring costs classified as other operating expenses on the Results of Operations are presented separately on the Operating Profit Comparison.

14. Mark-to-Market (MTM) gains/losses - Represents the net gain or loss of actual results differing from our assumptions and the effects of changing assumptions for our defined benefit pension and OPEB plans. These gains and losses are immediately recognized through earnings upon the annual remeasurement in the fourth quarter, or on an interim basis as triggering events warrant remeasurement.

15. Pension and Other Postemployment Benefits (OPEB) - The company’s defined benefit pension and postretirement benefit plans.

16. Period Costs - Includes period manufacturing costs, ME&T selling, general and administrative (SG&A) and research and development (R&D) expenses excluding the impact of currency and exit-related costs that are included in restructuring costs (see definition below). Period manufacturing costs support production but are defined as generally not having a direct relationship to short-term changes in volume. Examples include machinery and equipment repair, depreciation on manufacturing assets, facility support, procurement, factory scheduling, manufacturing planning and operations management. SG&A and R&D costs are not linked to the production of goods or services and include marketing, legal and finance services and the development of new and significant improvements in products or processes.

17. Price Realization - The impact of net price changes excluding currency and new product introductions. Price realization includes geographic mix of sales, which is the impact of changes in the relative weighting of sales prices between geographic regions.

18. Resource Industries - A segment primarily responsible for supporting customers using machinery in mining, quarry and aggregates, waste and material handling applications. Responsibilities include business strategy, product design, product management and development, manufacturing, marketing and sales and product support. The product portfolio includes large track-type tractors, large mining trucks, hard rock vehicles, longwall miners, electric rope shovels, draglines, hydraulic shovels, rotary drills, large wheel loaders, off-highway trucks, articulated trucks, wheel tractor scrapers, wheel dozers, landfill compactors, soil compactors, hard rock continuous mining systems, select work tools, machinery components, electronics and control systems and related parts. In addition to equipment, Resource Industries also develops and sells technology products and services to provide customers fleet management, equipment management analytics and autonomous machine capabilities. Resource Industries also manages areas that provide services to other parts of the company, including integrated manufacturing and research and development, as well as global procurement.

19. Restructuring Costs - Primarily costs for employee separation, long-lived asset impairments and contract terminations. These costs are included in Other Operating (Income) Expenses. Restructuring costs also include other exit-related costs primarily for accelerated depreciation, inventory write-downs, equipment relocation and project management costs and also LIFO inventory decrement benefits from inventory liquidations at closed

facilities (primarily included in Cost of goods sold).

20. Sales Volume - With respect to sales and revenues, sales volume represents the impact of changes in the quantities sold for Machinery, Energy & Transportation as well as the incremental revenue impact of new product introductions, including emissions-related product updates. With respect to operating profit, sales volume represents the impact of changes in the quantities sold for Machinery, Energy & Transportation combined with product mix as well as the net operating profit impact of new product introductions, including emissions-related product updates. Product mix represents the net operating profit impact of changes in the relative weighting of Machinery, Energy & Transportation sales with respect to total sales. The impact of sales volume on segment profit includes inter-segment sales.

21. Surface Mining & Technology - A goodwill reporting unit included in Resource Industries. Its product portfolio includes large mining trucks, electric rope shovels, draglines, hydraulic shovels and related parts. In addition to equipment, Surface Mining & Technology also develops and sells technology products and services to provide customer fleet management, equipment management analytics and autonomous machine capabilities.

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22. Variable Manufacturing Costs - Represents volume-adjusted costs excluding the impact of currency and restructuring costs (see definition above). Variable manufacturing costs are defined as having a direct relationship with the volume of production. This includes material costs, direct labor and other costs that vary directly with production volume such as freight, power to operate machines and supplies that are consumed in the manufacturing process.

LIQUIDITY AND CAPITAL RESOURCES

Sources of funds

We generate significant capital resources from operating activities, which are the primary source of funding for our ME&T operations. Funding for these businesses is also available from commercial paper and long-term debt issuances. Financial Products' operations are funded primarily from commercial paper, term debt issuances and collections from its existing portfolio. During 2017, we experienced favorable liquidity conditions globally in both our ME&T and Financial Products' operations. On a consolidated basis, we ended 2017 with $8.26 billion of cash, an increase of $1.09 billion from year-end 2016. We intend to maintain a strong cash and liquidity position.

Our cash balances are held in numerous locations throughout the world with approximately $7.5 billion held by our non-U.S. subsidiaries. U.S. tax reform legislation enacted on December 22, 2017 resulted in a one-time mandatory deemed repatriation of non-U.S. earnings. The resulting U.S. tax liability, net of available foreign tax credits, will be payable over eight years, and is not expected to significantly impact liquidity. As a result of this legislation, we expect to be able to use cash held by non-U.S. subsidiaries in the United States in the future with minimal U.S. tax consequences.

Consolidated operating cash flow for 2017 was $5.70 billion, up slightly from $5.64 billion in 2016. The increase was due to higher profit in 2017 adjusted for non-cash items including a charge related to the enactment of U.S. tax reform legislation and higher short-term incentive compensation expense accruals. The most significant driver of higher profit was an increase in sales volume in 2017. This improvement was offset by higher working capital requirements and higher pension contributions in 2017. Within working capital, changes to inventory and receivables unfavorably impacted cash flow but were partially offset by changes to accounts payable. These changes to working capital were primarily a result of higher sales volume in 2017 compared to a decrease in sales volume during 2016. In addition, the timing of employee separation payments for 2015 restructuring actions and lower short-term incentive compensation payments in 2017 versus 2016 favorably impacted operating cash flow. See further discussion of operating cash flow under ME&T and Financial Products.

Total debt as of December 31, 2017 was $34.88 billion, a decrease of $1.91 billion from year-end 2016. Debt related to Financial Products decreased $689 million. Debt related to ME&T decreased $1.22 billion in 2017, primarily due to the early redemption of a long term debt issuance. On October 10, 2017, we called for redemption of all $900 million in aggregate principal amount of our outstanding 7.90% senior notes due in December 2018, payable in cash. The redemption date occurred on November 10, 2017 and included a prepayment fee of $58 million.

We have three global credit facilities with a syndicate of banks totaling $10.50 billion (Credit Facility) available in the aggregate to both Caterpillar and Cat Financial for general liquidity purposes. Based on management's allocation decision, which can be revised from time to time, the portion of the Credit Facility available to ME&T as of December 31, 2017 was $2.75 billion. Our three Credit Facilities are:

- The 364-day facility of $3.15 billion (of which $0.82 billion is available to ME&T) expires in September 2018.
- The three-year facility, as amended in September 2017, of $2.73 billion (of which $0.72 billion is available to ME&T) expires in September 2020.

- The five-year facility, as amended in September 2017, of $4.62 billion (of which $1.21 billion is available to ME&T) expires in September 2022.

At December 31, 2017, Caterpillar's consolidated net worth was $13.72 billion, which was above the $9.00 billion required under the Credit Facility. The consolidated net worth is defined as the consolidated shareholder's equity including preferred stock but excluding the pension and other postretirement benefits balance within Accumulated other comprehensive income (loss).

At December 31, 2017, Cat Financial's covenant interest coverage ratio was 1.88 to 1. This is above the 1.15 to 1 minimum ratio, calculated as (1) profit excluding income taxes, interest expense and net gain/(loss) from interest rate derivatives to (2) interest expense calculated at the end of each calendar quarter for the rolling four quarter period then most recently ended, required by the Credit Facility.

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In addition, at December 31, 2017, Cat Financial's six-month covenant leverage ratio was 7.38 to 1 and year-end covenant leverage ratio was 7.71 to 1. This is below the maximum ratio of debt to net worth of 10 to 1, calculated (1) on a monthly basis as the average of the leverage ratios determined on the last day of each of the six preceding calendar months and (2) at each December 31, required by the Credit Facility.

In the event Caterpillar or Cat Financial does not meet one or more of their respective financial covenants under the Credit Facility in the future (and are unable to obtain a consent or waiver), the syndicate of banks may terminate the commitments allocated to the party that does not meet its covenants. Additionally, in such event, certain of Cat Financial's other lenders under other loan agreements where similar financial covenants or cross default provisions are applicable, may, at their election, choose to pursue remedies under those loan agreements, including accelerating the repayment of outstanding borrowings. At December 31, 2017, there were no borrowings under the Credit Facility.

Our total credit commitments and available credit as of December 31, 2017 were:

	December 31, 2017		
(Millions of dollars)	Consolidated	Machinery, Energy & Transportation	Financial Products
Credit lines available:			
Global credit facilities	$10,500	$ 2,750	$ 7,750
Other external	4,591	1	4,590
Total credit lines available	15,091	2,751	12,340
Less: Commercial paper outstanding	(3,680)	—	(3,680)
Less: Utilized credit	(1,479)	(1)	(1,478)
Available credit	$9,932	$ 2,750	$ 7,182

The other consolidated credit lines with banks as of December 31, 2017 totaled $4.59 billion. These committed and uncommitted credit lines, which may be eligible for renewal at various future dates or have no specified expiration date, are used primarily by our subsidiaries for local funding requirements. Caterpillar or Cat Financial may guarantee subsidiary borrowings under these lines.

We receive debt ratings from the major rating agencies. In December 2016, Moody's Investors Service downgraded our long-term ratings to A3 from A2, and short-term ratings to Prime-2 from Prime-1. The Moody's downgrade did not have a material impact on our borrowing costs or our overall financial health. A further downgrade of our credit ratings by Moody's or one of the other major credit rating agencies would result in increased borrowing costs and could make access to certain credit markets more difficult. However, our long-term ratings with Fitch and S&P continue to be "mid-A". In the event economic conditions deteriorate such that access to debt markets becomes unavailable, our ME&T operations would rely on cash flow from operations, use of existing cash balances, borrowings from Cat Financial and access to our Credit Facility. Our Financial Products operations would rely on cash flow from its existing portfolio, existing cash balances, access to our Credit Facility and other credit line facilities of Cat Financial and potential borrowings from Caterpillar. In addition, we maintain a support agreement with Cat Financial, which requires Caterpillar to remain the sole owner of Cat Financial and may, under certain circumstances, require Caterpillar to make payments to Cat Financial should Cat Financial fail to maintain certain financial ratios.

Machinery, Energy & Transportation

Net cash provided by operating activities was $5.46 billion in 2017, compared with $3.89 billion in 2016. The increase was primarily due to higher profit in 2017 adjusted for non-cash items including a charge related to the

enactment of U.S. tax reform legislation and higher short-term incentive compensation expense. The most significant driver of higher profit was an increase in sales volume in 2017. This improvement was offset by higher working capital requirements and higher pension contributions in 2017. Within working capital, changes to inventory and receivables unfavorably impacted cash flow but were partially offset by changes to accounts payable. These changes to working capital were primarily a result of higher sales volume in 2017 compared to a decrease in sales volume during 2016. In addition, the timing of employee separation payments for 2015 restructuring actions and lower short-term incentive compensation payments in 2017 versus 2016 favorably impacted operating cash flow.

Net cash used for investing activities in 2017 was $760 million, compared with net cash used of $1.78 billion in 2016. The change was primarily due to ME&T lending activity with Financial Products that occurred in 2016 and lower capital expenditures in 2017.

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Net cash used for financing activities during 2017 was $2.58 billion, compared with $2.16 billion in the same period of 2016. The change was primarily due to higher payments on debt in 2017, including the early retirement of $900 million of debt due in December 2018, partially offset by proceeds from common stock issued from stock options exercised in 2017.

Our priorities for cash deployment have not changed. While our short-term priorities for the use of cash may vary from time to time as business needs and conditions dictate, our long-term cash deployment strategy is focused on the following priorities. Our top priority is to maintain a strong financial position in support of a Mid-A rating. Next, we intend to fund operational requirements and commitments. Then, we intend to fund priorities that profitably grow the company and return capital to shareholders through dividend growth and share repurchases. Additional information on cash deployment is as follows:

Strong financial position — A key measure of ME&T's financial strength used by management is ME&T's debt-to-capital ratio. Debt-to-capital is defined as short-term borrowings, long-term debt due within one year and long-term debt due after one year (debt) divided by the sum of debt and shareholders' equity. Debt also includes ME&T's long-term borrowings from Financial Products. The debt-to-capital ratio for ME&T was 36.7 percent at December 31, 2017, within our target range of 30 to 45 percent. ME&T's debt-to-capital ratio was 41.0 percent at December 31, 2016. The decrease in the debt-to-capital ratio was primarily driven by a decrease in debt which included an early retirement of $900 million of debt due in December 2018.

Operational requirements and commitments — Capital expenditures were $916 million during 2017, compared to $1.21 billion for the same period in 2016. We expect ME&T's capital expenditures in 2018 to be between $1.0 and $1.5 billion. Contributions to our pension and OPEB plans were $1.61 billion and $329 million in 2017 and 2016, respectively. We expect to make approximately $365 million of contributions to our pension and OPEB plans in 2018. We believe we have adequate resources to fund both pension and OPEB plans.

Return capital to shareholders — Dividends totaled $1.83 billion in 2017, representing 77 cents per share paid in the first and second quarters and 78 cents per share paid in the third and fourth quarters. Each quarter, our Board of Directors reviews the company's dividend for the applicable quarter. The Board evaluates the financial condition of the company and considers the economic outlook, corporate cash flow, the company's liquidity needs and the health and stability of global credit markets to determine whether to maintain or change the quarterly dividend. In January 2014, the Board of Directors approved an authorization to repurchase up to $10 billion of Caterpillar common stock (the 2014 Authorization), which will expire on December 31, 2018. We did not purchase any Caterpillar common stock in 2017. As of December 31, 2017, $5.47 billion remained available under the 2014 Authorization. Caterpillar's basic shares outstanding as of December 31, 2017 were approximately 598 million.

Financial Products

Financial Products operating cash flow was $1.35 billion in 2017, compared with $1.55 billion in 2016. Net cash used for investing activities was $591 million in 2017, compared with cash provided by investing activities of $299 million in 2016. The change was primarily due to the impact of net intercompany purchased receivables, partially offset by lower capital expenditures for equipment on operating leases. Net cash used for financing activities in 2017 was $1.82 billion, compared with $1.07 billion in 2016. The change was primarily due to the impact of borrowings with ME&T.

Dividends paid per common share

Quarter	2017	2016	2015
First	$.770	$.770	$.700
Second	.770	.770	.700

Third	.780	.770	.770
Fourth	.780	.770	.770
	$3.100	$3.080	$2.940

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Contractual obligations

The company has committed cash outflow related to long-term debt, operating lease agreements, postretirement benefit obligations, purchase obligations, interest on long-term debt and other long-term contractual obligations. As of December 31, 2017, minimum payments for these obligations were:

(Millions of dollars)	2018	2019-2020	2021-2022	After 2022	Total
Long-term debt:					
Machinery, Energy & Transportation (excluding capital leases)	$—	$ —	$ 1,870	$ 6,236	$8,106
Machinery, Energy & Transportation-capital leases	6	46	28	30	110
Financial Products	6,191	9,989	3,826	2,147	22,153
Total long-term debt [1]	6,197	10,035	5,724	8,413	30,369
Operating leases	211	246	132	169	758
Postretirement benefit obligations [2]	365	625	1,020	3,380	5,390
Purchase obligations:					
Accounts payable [3]	6,487	—	—	—	6,487
Purchase orders [4]	7,577	—	—	—	7,577
Other contractual obligations [5]	237	325	251	—	813
Total purchase obligations	14,301	325	251	—	14,877
Interest on long-term debt [6]	885	1,316	911	6,138	9,250
Other long-term obligations [7]	446	450	218	377	1,491
Total contractual obligations	$22,405	$ 12,997	$ 8,256	$ 18,477	$62,135

1 Amounts exclude unamortized discounts, a non-cash settlement for a capital lease, debt issuance costs, and fair value adjustments.

2 Amounts represent expected contributions to our pension and other postretirement benefit plans through 2027, offset by expected Medicare Part D subsidy receipts.

3 Amount represents invoices received and recorded as liabilities in 2017, but scheduled for payment in 2018. These represent short-term obligations made in the ordinary course of business.

4 Amount represents contractual obligations for material and services on order at December 31, 2017 but not yet delivered. These represent short-term obligations made in the ordinary course of business.

5 Amounts represent long-term commitments entered into with key suppliers for minimum purchases quantities.

6 Amounts represent estimated contractual interest payments on long-term debt, including capital lease interest payments.

7 Amounts represent contractual obligations primarily for logistics services agreements related to our former third party logistics business, software license and development contracts, IT consulting contracts and outsourcing contracts for benefit plan administration and software system support, and estimated income tax payments for mandatory deemed repatriation as a result of U.S. tax reform.

The total amount of gross unrecognized tax benefits for uncertain tax positions, including positions impacting only the timing of tax benefits, was $1,286 million at December 31, 2017. Payment of these obligations would result from settlements with taxing authorities. Due to the difficulty in determining the timing of settlements, these obligations are not included in the table above. We do not expect to make a tax payment related to these obligations within the next year that would significantly impact liquidity.

Off-balance sheet arrangements

We are a party to certain off-balance sheet arrangements, primarily in the form of guarantees. Information related to guarantees appears in Note 21 – “Guarantees and product warranty” of Part II, Item 8 “Financial Statements and Supplementary Data”.

CRITICAL ACCOUNTING POLICIES

The preparation of financial statements in conformity with generally accepted accounting principles requires management to make estimates and assumptions that affect reported amounts. The more significant estimates include: residual values for leased assets, fair values for goodwill impairment tests, impairment of available-for-sale securities, warranty liability, stock-based compensation,

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reserves for product liability and insurance losses, postretirement benefits, post-sale discounts, credit losses and income taxes. We have incorporated many years of data into the determination of each of these estimates and we have not historically experienced significant adjustments. These assumptions are reviewed at least annually with the Audit Committee of the Board of Directors. Following are the methods and assumptions used in determining our estimates and an indication of the risks inherent in each.

Residual values for leased assets – The residual values for Cat Financial's leased assets, which are an estimate of the market value of leased equipment at the end of the lease term, are based on an analysis of historical wholesale market sales prices, projected forward on a level trend line without consideration for inflation or possible future pricing action. At the inception of the lease, residual values are estimated with consideration of the following critical factors: market size and demand, any known significant market/product trends, total expected hours of usage, machine configuration, application, location, model changes, quantities, past remarketing experience, third-party residual guarantees and contractual customer purchase options. Many of these factors are gathered in an application survey that is completed prior to quotation. The lease agreement also clearly defines applicable return conditions and remedies for non-compliance, to ensure that the leased equipment will be in good operating condition upon return. Model changes and updates, as well as market strength and product acceptance, are monitored and adjustments are made to residual values in accordance with the significance of any such changes. Remarketing sales staff works closely with customers and dealers to manage the sale of lease returns and the recovery of residual exposure.

During the term of the equipment on operating leases, we evaluate our depreciation on a regular basis taking into consideration expected residual values at lease termination. Adjustments to depreciation expense reflecting revised estimates of expected residual values at the end of the lease terms are recorded prospectively on a straight-line basis. For finance leases, residual value adjustments are recognized through a reduction of finance revenue.

We evaluate the carrying value of equipment on operating leases for potential impairment when we determine a triggering event has occurred. When a triggering event occurs, a test for recoverability is performed by comparing projected undiscounted future cash flows to the carrying value of the equipment on operating leases. If the test for recoverability identifies a possible impairment, the fair value of the equipment on operating leases is measured in accordance with the fair value measurement framework. An impairment charge is recognized for the amount by which the carrying value of the equipment on operating leases exceeds its estimated fair value.

At December 31, 2017, the aggregate residual value of equipment on operating leases was $2.20 billion. Without consideration of other factors such as third-party residual guarantees or contractual customer purchase options, a 10% non-temporary decrease in the market value of our equipment subject to operating leases would reduce residual value estimates and result in the recognition of approximately $80 million of additional annual depreciation expense.

Fair values for goodwill impairment tests – We test goodwill for impairment annually, at the reporting unit level, and whenever events or circumstances make it more likely than not that an impairment may have occurred, such as a significant adverse change in the business climate or a decision to sell all or a portion of a reporting unit. We perform our annual goodwill impairment test as of October 1 and monitor for interim triggering events on an ongoing basis.

Goodwill is reviewed for impairment utilizing either a qualitative assessment or a quantitative goodwill impairment test. If we choose to perform a qualitative assessment and determine the fair value more likely than not exceeds the carrying value, no further evaluation is necessary. For reporting units where we perform the quantitative goodwill impairment test, we compare the fair value of each reporting unit, which we primarily determine using an income approach based on the present value of discounted cash flows, to the respective carrying value, which includes goodwill. If the fair value of the reporting unit exceeds its carrying value, the goodwill is not considered impaired. Beginning in 2017, if the carrying value is higher than the fair value, the difference would be recognized as an impairment loss. Prior to 2017, a two-step process was used. For reporting units where we performed the two-step

process, the first step required us to compare the fair value of each reporting unit, which we primarily determined using an income approach based on the present value of discounted cash flows, to the respective carrying value, which includes goodwill. If the fair value of the reporting unit exceeded its carrying value, the goodwill was not considered impaired. If the carrying value was higher than the fair value, there was an indication that an impairment may have existed and the second step was required. In step two, the implied fair value of goodwill was calculated as the excess of the fair value of a reporting unit over the fair values assigned to its assets and liabilities. If the implied fair value of goodwill was less than the carrying value of the reporting unit's goodwill, the difference was recognized as an impairment loss.

The impairment test process requires valuation of the respective reporting unit, which we primarily determine using an income approach based on a discounted five year forecasted cash flow with a year-five residual value. The residual value is computed using the constant growth method, which values the forecasted cash flows in perpetuity. The income approach is supported by a reconciliation of our calculated fair value for Caterpillar to the company's market capitalization. The assumptions about future cash flows and growth rates are based on each reporting unit's long-term forecast and are subject to review and approval by senior

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management. A reporting unit’s discount rate is a risk-adjusted weighted average cost of capital, which we believe approximates the rate from a market participant's perspective. The estimated fair value could be impacted by changes in market conditions, interest rates, growth rates, tax rates, costs, pricing and capital expenditures. The fair value determination is categorized as Level 3 in the fair value hierarchy due to its use of internal projections and unobservable measurement inputs.

Our annual impairment tests completed in the fourth quarter of 2017 indicated the fair value of each reporting unit was substantially above its respective carrying value, including goodwill. Caterpillar’s market capitalization has remained significantly above the net book value of the Company.

An unfavorable change in our expectations for the financial performance of our reporting units, particularly long-term growth and profitability, would reduce the fair value of our reporting units. The demand for our equipment and related parts is highly cyclical and significantly impacted by commodity prices, although the impact may vary by reporting unit. The energy and mining industries are major users of our products, including the coal, iron ore, gold, copper, oil and natural gas industries. Decisions to purchase our products are dependent upon the performance of those industries, which in turn are dependent in part on commodity prices. Lower commodity prices or industry specific circumstances that have a negative impact to the valuation assumptions may reduce the fair value of our reporting units. Should such events occur and it becomes more likely than not that a reporting unit's fair value has fallen below its carrying value, we will perform an interim goodwill impairment test(s), in addition to the annual impairment test. Future impairment tests may result in a goodwill impairment, depending on the outcome of the quantitative impairment test. A goodwill impairment would be reported as a non-cash charge to earnings.

Impairment of available-for-sale securities – Available-for-sale securities, primarily at Insurance Services, are reviewed at least quarterly to identify fair values below cost which may indicate that a security is impaired and should be written down to fair value.

For debt securities, once a security’s fair value is below cost we utilize data gathered by investment managers, external sources and internal research to monitor the performance of the security to determine whether an other-than-temporary impairment has occurred. These reviews, which include an analysis of whether it is more likely than not that we will be required to sell the security before its anticipated recovery, consist of both quantitative and qualitative analysis and require a degree of management judgment. Securities in a loss position are monitored and assessed at least quarterly based on severity and timing of loss and may be deemed other-than-temporarily impaired at any time. Once a security’s fair value has been 20 percent or more below its original cost for six consecutive months, the security will be other-than-temporarily impaired unless there are sufficient facts and circumstances supporting otherwise.

For equity securities in a loss position, determining whether a security is other-than-temporarily impaired requires an analysis of that security's historical sector return as well as the volatility of that return. This information is utilized to estimate a security’s future fair value and to assess whether the security has the ability to recover to its original cost over a reasonable period of time. Both historical annualized sector returns and the volatility of those returns are applied over a two year period to arrive at these estimates.

For both debt and equity securities, qualitative factors are also considered in determining whether a security is other-than-temporarily impaired. These include reviews of the following: significant changes in the regulatory, economic or technological environment of the investee, significant changes in the general market condition of either the geographic area or the industry in which the investee operates, and length of time and the extent to which the fair value has been less than cost. These qualitative factors are subjective and require a degree of management judgment.

Warranty liability – At the time a sale is recognized, we record estimated future warranty costs. The warranty liability is determined by applying historical claim rate experience to the current field population and dealer

inventory. Generally, historical claim rates are based on actual warranty experience for each product by machine model/engine size by customer or dealer location (inside or outside North America). Specific rates are developed for each product shipment month and are updated monthly based on actual warranty claim experience. Warranty costs may differ from those estimated if actual claim rates are higher or lower than our historical rates.

Stock-based compensation – We use a lattice-based option-pricing model to calculate the fair value of our stock options and stock appreciation rights (SARs). The calculation of the fair value of the awards using the lattice-based option-pricing model is affected by our stock price on the date of grant as well as assumptions regarding the following:

- Volatility is a measure of the amount by which the stock price is expected to fluctuate each year during the expected term of the award and is based on historical Caterpillar stock price movement and current implied volatilities from traded options on Caterpillar stock. The implied volatilities from traded options are impacted by changes in market conditions. An increase in the volatility would result in an increase in our expense.

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The expected term represents the period of time that awards granted are expected to be outstanding and is an output of the lattice-based option-pricing model. In determining the expected term of the award, future exercise and forfeiture patterns are estimated from Caterpillar employee historical exercise behavior. These patterns are also affected by the vesting conditions of the award. Changes in the future exercise behavior of employees or in the vesting period of the award could result in a change in the expected term. An increase in the expected term would result in an increase to our expense.

- The weighted-average dividend yield is based on Caterpillar's historical dividend yields. As holders of stock options and SARs do not receive dividend payments, this could result in employees retaining the award for a longer period of time if dividend yields decrease or exercising the award sooner if dividend yields increase. A decrease in the dividend yield would result in an increase in our expense.
- The risk-free interest rate is based on the U.S. Treasury yield curve in effect at time of grant. As the risk-free interest rate increases, the expected term increases, resulting in an increase in our expense.

The fair value of our RSUs and PRSUs is determined by reducing the stock price on the date of grant by the present value of the estimated dividends to be paid during the vesting period. The estimated dividends are based on Caterpillar's quarterly dividend per share at the time of grant. A decrease in the dividend per share would result in an increase in our expense.

Stock-based compensation expense recognized based on the grant date fair value. Forfeitures are accounted for in the period they occur as a reduction to expense. Stock-based compensation expense for PRSUs is based on the probable number of shares expected to vest. Changes in the expected probability of achieving performance targets in future periods may result in an increase or decrease in our expense.

Product liability and insurance loss reserve – We determine these reserves based upon reported claims in process of settlement and actuarial estimates for losses incurred but not reported. Loss reserves, including incurred but not reported reserves, are based on estimates and ultimate settlements may vary significantly from such estimates due to increased claims frequency or severity over historical levels.

Postretirement benefits – Primary actuarial assumptions were determined as follows:

- The assumed discount rate is used to discount future benefit obligations back to today's dollars. The U.S. discount rate is based on a benefit cash flow-matching approach and represents the rate at which our benefit obligations could effectively be settled as of our measurement date, December 31. The benefit cash flow-matching approach involves analyzing Caterpillar's projected cash flows against a high quality bond yield curve, calculated using a wide population of corporate Aa bonds available on the measurement date. The very highest and lowest yielding bonds (top and bottom 10 percent) are excluded from the analysis. A similar approach is used to determine the assumed discount rate for our most significant non-U.S. plans. In estimating the service and interest cost components of net periodic benefit cost, we utilize a full yield curve approach in determining a discount rate. This approach applies the specific spot rates along the yield curve used in the determination of the benefit obligation to the relevant projected cash flows.

Discount rates are sensitive to changes in interest rates. A decrease in the discount rate would increase our obligation and future expense.

- The expected long-term rate of return on plan assets is based on our estimate of long-term passive returns for equities and fixed income securities weighted by the allocation of our plan assets. Based on historical performance, we increase the passive returns due to our active management of the plan assets. This rate is impacted by changes in general market conditions, but because it represents a long-term rate, it is not significantly impacted by short-term market swings. Changes in our allocation of plan assets would also impact this rate. For example, a shift to more fixed income securities would lower the rate. A decrease in the rate would increase our expense. The expected return on

plan assets is calculated using the fair value of plan assets as of our measurement date, December 31.

- The expected rate of compensation increase is used to develop benefit obligations using projected pay at retirement. It represents average long-term salary increases. This rate is influenced by our long-term compensation policies. An increase in the rate would increase our obligation and expense.

- The assumed health care trend rate represents the rate at which health care costs are assumed to increase and is based on historical and expected experience. Changes in our projections of future health care costs due to general economic conditions and those specific to health care (e.g., technology driven cost changes) will impact this trend rate. An increase in the trend rate would increase our obligation and expense.

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The effects of actual results differing from our assumptions and the effects of changing assumptions are considered actuarial gains or losses. We recognize actuarial gains or losses immediately through earnings upon the annual remeasurement in the fourth quarter, or on an interim basis as triggering events warrant remeasurement.

See Note 12 for further information regarding the accounting for postretirement benefits.

Post-sale discount reserve – We provide discounts to dealers through merchandising programs. We have numerous programs that are designed to promote the sale of our products. The most common dealer programs provide a discount when the dealer sells a product to a targeted end user. The amount of accrued post-sale discounts was $1,426 million and $1,288 million as of December 31, 2017 and 2016, respectively. The reserve represents discounts that we expect to pay on previously sold units and is reviewed at least quarterly. The reserve is adjusted if discounts paid differ from those estimated. Historically, those adjustments have not been material.

Credit loss reserve – The allowance for credit losses is an estimate of the losses inherent in our finance receivable portfolio and includes consideration of accounts that have been individually identified as impaired, as well as pools of finance receivables where it is probable that certain receivables in the pool are impaired but the individual accounts cannot yet be identified. In identifying and measuring impairment, management takes into consideration past loss experience, known and inherent risks in the portfolio, adverse situations that may affect the borrower's ability to repay, estimated value of underlying collateral and current economic conditions.

Accounts are identified for individual review based on past-due status and information available about the customer, such as financial statements, news reports and published credit ratings, as well as general information regarding industry trends and the economic environment in which our customers operate. The allowance for credit losses attributable to finance receivables that are individually evaluated and determined to be impaired is based on the present value of expected future cash flows discounted at the receivables' effective interest rate, the fair value of the collateral for collateral-dependent receivables or the observable market price of the receivable. In determining collateral value, we estimate the current fair market value of the collateral less selling costs. We also consider credit enhancements such as additional collateral and contractual third-party guarantees. The allowance for credit losses attributable to the remaining accounts not yet individually identified as impaired is estimated based on loss forecast models utilizing probabilities of default, our estimate of the loss emergence period and the estimated loss given default. In addition, qualitative factors not able to be fully captured in our loss forecast models including industry trends, macroeconomic factors and model imprecision are considered in the evaluation of the adequacy of the allowance for credit losses. These qualitative factors are subjective and require a degree of management judgment.

While management believes it has exercised prudent judgment and applied reasonable assumptions, there can be no assurance that in the future, changes in economic conditions or other factors would not cause changes in the financial health of our customers. If the financial health of our customers deteriorates, the timing and level of payments received could be impacted and therefore, could result in a change to our estimated losses.

Income taxes – We are subject to the income tax laws of the many jurisdictions in which we operate. These tax laws are complex, and the manner in which they apply to our facts is sometimes open to interpretation. In establishing the provision for income taxes, we must make judgments about the application of these inherently complex tax laws.

Despite our belief that our tax return positions are consistent with applicable tax laws, we believe that taxing authorities could challenge certain positions. Settlement of any challenge can result in no change, a complete disallowance, or some partial adjustment reached through negotiations or litigation. We record tax benefits for uncertain tax positions based upon management's evaluation of the information available at the reporting date. To be recognized in the financial statements, a tax benefit must be at least more likely than not of being sustained based on technical merits. The benefit for positions meeting the recognition threshold is measured as the largest benefit more

likely than not of being realized upon ultimate settlement with a taxing authority that has full knowledge of all relevant information. Significant judgment is required in making these determinations and adjustments to unrecognized tax benefits may be necessary to reflect actual taxes payable upon settlement. Adjustments related to positions impacting the effective tax rate affect the provision for income taxes. Adjustments related to positions impacting the timing of deductions impact deferred tax assets and liabilities.

Income taxes are based on the statutory tax rate of the jurisdiction in which earnings are subject to taxation. That statutory rate may differ from the statutory tax rate of the jurisdiction in which that entity is incorporated. Taxes are paid in the jurisdictions where earnings are subject to taxation. The effective tax rate differs from the U.S. statutory rate in part due to profits of non-U.S. subsidiaries being subject to statutory tax rates which were generally lower than the U.S. rate of 35 percent effective prior to January 1, 2018. Caterpillar SARL (CSARL), primarily taxable locally in Switzerland, contributes the most significant amount of this difference. For tax years 2007 to 2012 including the impact of a loss carryback to 2005, the IRS has proposed to tax in the

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United States profits earned from certain parts transactions by CSARL based on the IRS examination team's application of "substance-over-form" or "assignment-of-income" judicial doctrines. We are vigorously contesting the proposed increases to tax and penalties for these years of approximately $2.3 billion. We believe that the relevant transactions complied with applicable tax laws and did not violate judicial doctrines. The purchase of parts by CSARL from unrelated parties and the subsequent sale of those parts to unrelated dealers outside the United States have substantial legal, commercial, and economic consequences for the parties involved. Therefore, we have concluded that the largest amount of benefit that is more likely than not to be sustained related to this position is the entire benefit. As a result, no amount related to these IRS adjustments is reflected in unrecognized tax benefits. We have filed U.S. income tax returns on this same basis for years after 2012. We currently believe the ultimate disposition of this matter will not have a material adverse effect on our consolidated financial position, liquidity or results of operations.

Our income tax positions and analysis are based on currently enacted tax law. On December 22, 2017, U.S. tax legislation was enacted containing a broad range of tax reform provisions including a corporate tax rate reduction and changes in the U.S. taxation of non-U.S. earnings. We have not completed our accounting for the income tax effects of U.S. tax reform. However, we have made a reasonable estimate of the 2017 financial statement impact as of January 18, 2018, and recognized a provisional charge of $2.371 billion. We will continue to update our calculations as additional required information is prepared and analyzed, interpretations and assumptions are refined, additional guidance is issued, and due to actions we may take as a result of the legislation. These updates could significantly impact the provision for income taxes, the amount of taxes payable, and the deferred tax asset and liability balances.

The provisionally estimated charge includes a $596 million write-down of net deferred tax assets to reflect the reduction in the U.S. corporate tax rate from 35 percent to 21 percent beginning January 1, 2018. We are still analyzing certain aspects of the law and refining our calculations of basis differences as of December 31, 2017, which could affect the measurement of these balances.

The provisionally estimated charge includes $1.775 billion for the estimated cost of a mandatory deemed repatriation of non-U.S. earnings, including changes in the deferred tax liability related to the amount of earnings considered not indefinitely reinvested as well as the amount of unrecognized tax benefits and state tax liabilities associated with these tax positions. The U.S. federal tax cost for the mandatory deemed repatriation is computed at 15.5 percent for non-U.S. earnings held in liquid assets and 8 percent for non-liquid assets, reduced by applicable foreign tax credits. These estimates are provisional due to additional information and analysis required to determine cumulative taxable earnings since 1986 for non-U.S. subsidiaries at two separate points in time and to determine the amount of earnings that are held in liquid versus non-liquid assets as defined in the new legislation at several different measurement periods. In addition, information is being gathered and analyzed to support available foreign tax credits including estimates of credit utilization and valuation allowance considerations for any remaining foreign tax credit carryforward. Due to uncertainty about aspects of the tax law, we have made various assumptions to determine our reasonable estimate that we expect to refine as additional guidance is issued.

As a result of U.S. tax reform legislation, distributions of profits from non-U.S. subsidiaries are not expected to cause a significant U.S. tax impact in the future. However, these distributions may be subject to non-U.S. withholding taxes if profits are distributed from certain jurisdictions. We have recorded a deferred tax liability of $138 million for withholding taxes in non-U.S. jurisdictions where earnings are not considered indefinitely reinvested. Additional information and analysis are needed to determine the final amount of deferred tax liability considering factors such as whether non-U.S. entities are subject to withholding taxes, have reserve requirements, or have projected working capital and other capital needs in the country where the earnings were generated that would result in a decision to indefinitely reinvest a portion or all their earnings.

Deferred tax assets generally represent tax benefits for tax deductions or credits available in future tax returns. Certain estimates and assumptions are required to determine whether it is more likely than not that all or some portion of the

benefit of a deferred tax asset will not be realized. In making this assessment, management analyzes the trend of U.S. GAAP earnings and estimates the impact of future taxable income, reversing temporary differences and available prudent and feasible tax planning strategies. Should a change in facts or circumstances lead to a change in judgment about the ultimate realizability of a deferred tax asset, we record or adjust the related valuation allowance in the period that the change in facts and circumstances occurs, along with a corresponding increase or decrease in the provision for income taxes. The provision for income taxes for 2016 included an increase in the valuation allowance for U.S. state deferred tax assets resulting in a $141 million non-cash charge, net of federal deferred tax adjustment at 35 percent. The primary driver of the increase was recent U.S. GAAP losses expected to recur in 2017 in certain state jurisdictions and the weight given this negative objective evidence under income tax accounting guidance. Due to better than previously forecasted 2017 U.S. GAAP results in certain U.S. state jurisdictions, the provision for income taxes for 2017 includes a decrease in the valuation allowance for U.S. state deferred tax assets resulting in a $111 million non-cash benefit, net of federal deferred tax adjustment of 35 percent. We give less weight in this analysis to mark-to-market adjustments to remeasure our pension and OPEB plans as we do not consider these adjustments indicative of ongoing earnings trends.

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OTHER MATTERS

ENVIRONMENTAL AND LEGAL MATTERS

The Company is regulated by federal, state and international environmental laws governing our use, transport and disposal of substances and control of emissions. In addition to governing our manufacturing and other operations, these laws often impact the development of our products, including, but not limited to, required compliance with air emissions standards applicable to internal combustion engines. We have made, and will continue to make, significant research and development and capital expenditures to comply with these emissions standards.

We are engaged in remedial activities at a number of locations, often with other companies, pursuant to federal and state laws. When it is probable we will pay remedial costs at a site, and those costs can be reasonably estimated, the investigation, remediation, and operating and maintenance costs are accrued against our earnings. Costs are accrued based on consideration of currently available data and information with respect to each individual site, including available technologies, current applicable laws and regulations, and prior remediation experience. Where no amount within a range of estimates is more likely, we accrue the minimum. Where multiple potentially responsible parties are involved, we consider our proportionate share of the probable costs. In formulating the estimate of probable costs, we do not consider amounts expected to be recovered from insurance companies or others. We reassess these accrued amounts on a quarterly basis. The amount recorded for environmental remediation is not material and is included in Accrued expenses. We believe there is no more than a remote chance that a material amount for remedial activities at any individual site, or at all the sites in the aggregate, will be required.

On January 7, 2015, the Company received a grand jury subpoena from the U.S. District Court for the Central District of Illinois. The subpoena requests documents and information from the Company relating to, among other things, financial information concerning U.S. and non-U.S. Caterpillar subsidiaries (including undistributed profits of non-U.S. subsidiaries and the movement of cash among U.S. and non-U.S. subsidiaries). The Company has received additional subpoenas relating to this investigation requesting additional documents and information relating to, among other things, the purchase and resale of replacement parts by Caterpillar Inc. and non-U.S. Caterpillar subsidiaries, dividend distributions of certain non-U.S. Caterpillar subsidiaries, and Caterpillar SARL and related structures. On March 2-3, 2017, agents with the Department of Commerce, the Federal Deposit Insurance Corporation and the Internal Revenue Service executed search and seizure warrants at three facilities of the Company in the Peoria, Illinois area, including its former corporate headquarters. The warrants identify, and agents seized, documents and information related to, among other things, the export of products from the United States, the movement of products between the United States and Switzerland, the relationship between Caterpillar Inc. and Caterpillar SARL, and sales outside the United States. It is the Company’s understanding that the warrants, which concern both tax and export activities, are related to the ongoing grand jury investigation. The Company is continuing to cooperate with this investigation. The Company is unable to predict the outcome or reasonably estimate any potential loss; however, we currently believe that this matter will not have a material adverse effect on the Company’s consolidated results of operations, financial position or liquidity.

On March 20, 2014, Brazil’s Administrative Council for Economic Defense (CADE) published a Technical Opinion which named 18 companies and over 100 individuals as defendants, including two subsidiaries of Caterpillar Inc., MGE - Equipamentos e Serviços Ferroviários Ltda. (MGE) and Caterpillar Brasil Ltda. The publication of the Technical Opinion opened CADE's official administrative investigation into allegations that the defendants participated in anticompetitive bid activity for the construction and maintenance of metro and train networks in Brazil. While companies cannot be held criminally liable for anticompetitive conduct in Brazil, criminal charges have been brought against two current employees of MGE and one former employee of MGE involving the same conduct alleged by CADE. The Company has responded to all requests for information from the authorities. The Company is unable to predict the outcome or reasonably estimate the potential loss; however, we currently believe that this matter

will not have a material adverse effect on the Company's consolidated results of operations, financial position or liquidity.

On October 24, 2013, Progress Rail received a grand jury subpoena from the U.S. District Court for the Central District of California related to the former railcar repair operations of its subsidiary, United Industries, LLC ("United") at the intermodal rail yard at Terminal Island, California ("Terminal Island"). United complied with the subpoena and cooperated with the U.S. Attorney. After investigation, the U.S. Attorney alleged that United engaged in unnecessary and improper railcar repair activities and disposed of railcar parts by hand in the water surrounding its former Terminal Island operation. On December 7, 2017, United entered a guilty plea in U.S. District Court for the Central District of California to a single misdemeanor violation of the Refuse Act. As part of the agreement to enter the plea, United has paid $25 million in fines and restitution.

In addition, we are involved in other unresolved legal actions that arise in the normal course of business. The most prevalent of these unresolved actions involve disputes related to product design, manufacture and performance liability (including claimed asbestos and welding fumes exposure), contracts, employment issues, environmental matters, intellectual property rights, tax and securities laws. The aggregate range of reasonably possible losses in excess of accrued liabilities, if any, associated with these

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unresolved legal actions is not material. In some cases, we cannot reasonably estimate a range of loss because there is insufficient information regarding the matter. However, we believe there is no more than a remote chance that any liability arising from these matters would be material. Although it is not possible to predict with certainty the outcome of these unresolved legal actions, we believe that these actions will not individually or in the aggregate have a material adverse effect on our consolidated results of operations, financial position or liquidity.

RETIREMENT BENEFITS

We recognize mark-to-market gains and losses immediately through earnings upon the remeasurement of our pension and OPEB plans. Mark-to-market gains and losses represent the effects of actual results differing from our assumptions and the effects of changing assumptions. Changes in discount rates and differences between the actual return on plan assets and the expected return on plan assets generally have the largest impact on mark-to-market gains and losses.

We recognized expense of $342 million in 2017, $957 million in 2016 and $292 million in 2015 related to our defined benefit pension and OPEB plans. The decrease in expense in 2017 compared to 2016 was primarily due to lower net mark-to-market losses in 2017 compared to 2016. This was partially offset by an unfavorable change in amortization of prior service credits, curtailment and termination charges in 2017 related to the Gosselies, Belgium and Aurora, Illinois facility closures and a lower expected return on plan assets. The increase in expense in 2016 compared to 2015 was primarily due to a higher net mark-to-market loss in 2016 compared to 2015 and lower expected return on plan assets as a result of a lower asset base in 2016 compared to 2015 and a lower expected rate of return on plan assets. This was partially offset by lower interest costs primarily due to adoption of a full yield curve approach in the estimation of interest cost (discussed below) and lower service costs primarily due to fewer employees earning benefits under our plans as a result of the U.S. voluntary retirement enhancement program that was implemented in the fourth quarter 2015.

The primary factors that resulted in mark-to-market losses for 2017, 2016 and 2015 are described below:

- 2017 net mark-to-market loss of $301 million - Primarily due to lower discount rates at the end of 2017 compared to the end of 2016 and changes in our mortality assumption (discussed below). This was partially offset by the difference between the actual return on plan assets compared to the expected return on plan assets (U.S. pension plans had an actual rate of return of 15.5 percent compared to an expected rate of return of 6.7 percent).
- 2016 net mark-to-market loss of $985 million - Primarily due to lower discount rates at the end of 2016 compared to the end of 2015 and changes in our U.S. mortality assumption (discussed below). This was partially offset by the difference between the actual return on plan assets compared to the expected return on plan assets (U.S. pension plans had an actual rate of return of 7.8 percent compared to an expected rate of return of 6.9 percent).
- 2015 net mark-to-market loss of $179 million - Primarily due to the difference between the actual return on plan assets compared to the expected return on plan assets (U.S. pension plans had an actual rate of return of (2.0) percent compared to an expected rate of return of 7.4 percent) which was partially offset by higher discount rates at the end of 2015 compared to 2014.

The net mark-to-market losses were in the following Results of Operations line items:

	Years ended December 31,		
(Millions of dollars)	2017	2016	2015
Cost of goods sold	$(29)	$476	$122
Selling, general and administrative expenses	244	382	18
Research and development expenses	86	127	39

Total	$301	$985	$179

Effective January 1, 2018, we adopted new accounting guidance issued by the FASB related to the presentation of net periodic pension and OPEB costs. This guidance requires that an employer disaggregate the service cost component from the other components of net benefit cost. Service cost is required to be reported in the same line item or items as other compensation costs arising from services rendered by the pertinent employees during the period. The other components of net benefit cost are required to be reported outside the subtotal for income from operations. As a result, components of pension and OPEB costs, other than service costs, will be reclassified from operating costs to other income/expense. This change will be applied retrospectively to prior years.

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In the fourth quarter of 2017, the company reviewed and made changes to the mortality assumptions primarily for our U.S. pension plans which resulted in an overall increase in the life expectancy of plan participants. As of December 31, 2017 these changes resulted in an increase in our Liability for postemployment benefits of approximately $290 million. In the fourth quarter of 2016, the company adopted new mortality improvement scales released by the SoA for our U.S. pension and OPEB plans. As of December 31, 2016, this resulted in an increase in our Liability for postemployment benefits of approximately $200 million.

In the first quarter of 2017, we announced the closure of our Gosselies, Belgium facility. This announcement impacted certain employees that participated in a defined benefit pension plan and resulted in a curtailment and the recognition of termination benefits. In March 2017, we recognized a net loss of $20 million for the curtailment and termination benefits. In addition, we announced the decision to phase out production at our Aurora, Illinois, facility, which resulted in termination benefits of $9 million for certain hourly employees that participate in our U.S. hourly defined benefit pension plan.

Beginning in 2016, we elected to utilize a full yield curve approach in the estimation of service and interest costs by applying the specific spot rates along the yield curve used in the determination of the benefit obligation to the relevant projected cash flows. Service and interest costs in 2017 and 2016 were lower by $140 million and $180 million, respectively, under the new method than they would have been under the previous method. This change had no impact on our year-end defined benefit pension and OPEB obligations or our annual net periodic benefit cost as the lower service and interest costs were entirely offset in the actuarial loss (gain) reported for the respective year.

We expect our total defined benefit pension and OPEB expense (excluding the impact of mark-to-market gains and losses) to decrease approximately $80 million in 2018. This decrease is primarily due to a higher expected return on plan assets as a result of a higher asset base in 2018.

In general, our strategy for both the U.S. and the non-U.S. pensions includes ongoing alignment of our investments to our liabilities, while reducing risk in our portfolio. For our U.S. pension plans, our year-end 2017 asset allocation was 34 percent equities, 62 percent fixed income and 4 percent other. Our current U.S. pension target asset allocation is 30 percent equities and 70 percent fixed income. The target allocation is revisited periodically to ensure it reflects our overall objectives. The U.S. plans are rebalanced to plus or minus 5 percentage points of the target asset allocation ranges on a monthly basis.

The year-end 2017 asset allocation for our non-U.S. pension plans was 40 percent equities, 53 percent fixed income, 4 percent real estate and 3 percent other. The 2017 weighted-average target allocations for our non-U.S. pension plans was 38 percent equities, 54 percent fixed income, 5 percent real estate and 3 percent other. The target allocations for each plan vary based upon local statutory requirements, demographics of the plan participants and funded status. The frequency of rebalancing for the non-U.S. plans varies depending on the plan.

Contributions to our pension and OPEB plans were $1.6 billion and $329 million in 2017 and 2016, respectively. The 2017 contributions include a $1.0 billion discretionary contribution made to our U.S. pension plans in December 2017. We expect to make approximately $365 million of contributions to our pension and OPEB plans in 2018. We believe we have adequate resources to fund both pension and OPEB plans.

Actuarial assumptions have a significant impact on both pension and OPEB expenses. The effects of a one percentage point change in our primary actuarial assumptions on 2017 benefit costs and year-end obligations are included in the table below.

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Postretirement Benefit Plan Actuarial Assumptions Sensitivity

Following are the effects of a one percentage-point change in our primary pension and OPEB actuarial assumptions (included in the following table) on 2017 pension and other OPEB costs and obligations:

(Millions of dollars)	2017 Benefit Cost		Year-end Benefit Obligation	
	One percentage-point increase	One percentage-point decrease	One percentage-point increase	One percentage-point decrease
Pension benefits:				
Assumed discount rate	$ 61	$ (83)	$ (2,561)	$ 3,167
Expected rate of compensation increase	8	(7)	77	(70)
Expected long-term rate of return on plan assets	(149)	149	—	—
Other postretirement benefits:				
Assumed discount rate	11	(12)	(366)	438
Expected rate of compensation increase	—	—	1	(1)
Expected long-term rate of return on plan assets	(5)	5	—	—
Assumed health care cost trend rate	14	(12)	161	(136)

Primary Actuarial Assumptions

	U.S. Pension Benefits			Non-U.S. Pension Benefits			Other Postretirement Benefits		
	2017	2016	2015	2017	2016	2015	2017	2016	2015
Weighted-average assumptions used to determine benefit obligations, end of year:									
Discount rate	3.5 %	4.0 %	4.2 %	2.4 %	2.5 %	3.2 %	3.6 %	4.0 %	4.1 %
Rate of compensation increase	4.0 %	4.0 %	4.0 %	4.0 %	4.0 %	3.8 %	4.0 %	4.0 %	4.0 %
Weighted-average assumptions used to determine net cost:									
Discount rate used to measure service cost	4.2 %	4.5 %	3.8 %	2.4 %	2.9 %	3.3 %	3.9 %	4.2 %	3.9 %
Discount rate used to measure interest cost	3.3 %	3.4 %	3.8 %	2.3 %	2.8 %	3.3 %	3.3 %	3.3 %	3.9 %
Expected rate of return on plan assets	6.7 %	6.9 %	7.4 %	5.9 %	6.1 %	6.8 %	7.5 %	7.5 %	7.8 %
Rate of compensation increase	4.0 %	4.0 %	4.0 %	4.0 %	3.6 %	4.0 %	4.0 %	4.0 %	4.0 %
Health care cost trend rates at year-end:									
Health care trend rate assumed for next year							6.1 %	6.6 %	6.5 %
Rate that the cost trend rate gradually declines to							5.0 %	5.0 %	5.0 %
Year that the cost trend rate reaches ultimate rate							2022	2022	2021

SENSITIVITY

Foreign Exchange Rate Sensitivity

Machinery, Energy & Transportation operations use foreign currency forward and option contracts to manage unmatched foreign currency cash inflow and outflow. Our objective is to minimize the risk of exchange rate

movements that would reduce the U.S. dollar value of our foreign currency cash flow. Our policy allows for managing anticipated foreign currency cash flow for up to five years. Based on the anticipated and firmly committed cash inflow and outflow for our Machinery, Energy & Transportation operations for the next 12 months and the foreign currency derivative instruments in place at year-end, a hypothetical 10 percent weakening of the U.S. dollar relative to all other currencies would adversely affect our expected 2018 cash flow for our Machinery, Energy & Transportation operations by approximately $193 million. Last year similar assumptions and calculations yielded a

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potential $143 million adverse impact on 2017 cash flow. We determine our net exposures by calculating the difference in cash inflow and outflow by currency and adding or subtracting outstanding foreign currency derivative instruments. We multiply these net amounts by 10 percent to determine the sensitivity.

Since our policy for Financial Products operations is to hedge the foreign exchange risk when the currency of our debt portfolio does not match the currency of our receivable portfolio, a 10 percent change in the value of the U.S. dollar relative to all other currencies would not have a material effect on our consolidated financial position, results of operations or cash flow. Neither our policy nor the effect of a 10 percent change in the value of the U.S. dollar has changed from that reported at the end of last year.

The effect of the hypothetical change in exchange rates ignores the effect this movement may have on other variables, including competitive risk. If it were possible to quantify this competitive impact, the results would probably be different from the sensitivity effects shown above. In addition, it is unlikely that all currencies would uniformly strengthen or weaken relative to the U.S. dollar. In reality, some currencies may weaken while others may strengthen. Our primary exposure (excluding competitive risk) is to exchange rate movements in the Japanese yen, British pound, Indian rupee, euro and Australian dollar.

Interest Rate Sensitivity

For our Machinery, Energy & Transportation operations, we have the option to use interest rate swaps to lower the cost of borrowed funds by attaching fixed-to-floating interest rate swaps to fixed-rate debt, and by entering into forward rate agreements on future debt issuances. A hypothetical 100 basis point adverse move in interest rates along the entire interest rate yield curve would have a minimal impact to the 2018 pre-tax earnings of Machinery, Energy & Transportation. Last year, similar assumptions and calculations yielded a minimal impact to 2017 pre-tax earnings.

For our Financial Products operations, we use interest rate derivative instruments primarily to meet our match-funding objectives and strategies. We have a match-funding policy whereby the interest rate profile (fixed or floating rate) of our debt portfolio is matched to the interest rate profile of our earning asset portfolio (finance receivables and operating leases) within certain parameters. In connection with that policy, we use interest rate swap agreements to modify the debt structure. Match funding assists us in maintaining our interest rate spreads, regardless of the direction interest rates move.

In order to properly manage sensitivity to changes in interest rates, Financial Products measures the potential impact of different interest rate assumptions on pre-tax earnings. All on-balance sheet positions, including derivative financial instruments, are included in the analysis. The primary assumptions included in the analysis are that there are no new fixed rate assets or liabilities, the proportion of fixed rate debt to fixed rate assets remains unchanged and the level of floating rate assets and debt remain constant. An analysis of the December 31, 2017 balance sheet, using these assumptions, estimates the impact of a 100 basis point immediate and sustained adverse change in interest rates to have a potential $5 million adverse impact on 2018 pre-tax earnings. Last year, similar assumptions and calculations yielded a potential $6 million adverse impact to 2017 pre-tax earnings.

This analysis does not necessarily represent our current outlook of future market interest rate movement, nor does it consider any actions management could undertake in response to changes in interest rates. Accordingly, no assurance can be given that actual results would be consistent with the results of our estimate.

NON-GAAP FINANCIAL MEASURES

The following definitions are provided for the non-GAAP financial measures used in this report. These non-GAAP financial measures have no standardized meaning prescribed by U.S. GAAP and therefore are unlikely to be

comparable to the calculation of similar measures for other companies. Management does not intend these items to be considered in isolation or as a substitute for the related GAAP measures.

We believe it is important to separately quantify the profit impact of several significant items in order for our results to be meaningful to our readers. These items consist of (i) restructuring costs, which are incurred in the current year to generate longer term benefits, (ii) pension and OPEB mark-to-market losses resulting from plan remeasurements, (iii) state deferred tax valuation allowance (reversal), (iv) a gain on the sale of an equity investment, (v) U.S. tax reform impact and (vi) goodwill impairment charges. We do not consider these items indicative of earnings from ongoing business activities and believe the non-GAAP measures will provide useful perspective on underlying business results and trends, and a means to assess our period-over-period results.

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Reconciliations of adjusted profit before taxes to the most directly comparable GAAP measure, consolidated profit (loss) before taxes, are as follows:

	Three Months Ended December 31,		Twelve Months Ended December 31,	
(millions of dollars)	2017	2016	2017	2016
Profit (Loss) before taxes	$1,111	$(1,348)	$4,082	$139
Restructuring costs	$245	$395	$1,256	$1,019
Mark-to-market losses	$301	$985	$301	$985
Gain on sale of equity investment	$—	$—	$(85)	$—
Goodwill impairment	$—	$595	$—	$595
Adjusted profit before taxes	$1,657	$627	$5,554	$2,738

Reconciliations of adjusted profit per share to the most directly comparable GAAP measure, diluted profit per share, are as follows:

	Three Months Ended December 31,		Twelve Months Ended December 31,	
	2017	2016	2017	2016
Profit (Loss) per share - diluted	$(2.18)	$(2.00)	$1.26	$(0.11)
Per share restructuring costs [1]	$0.31	$0.45	$1.68	$1.16
Per share mark-to-market losses [2]	$0.26	$1.14	$0.26	$1.15
Per share state deferred tax valuation allowance (reversal) [3]	$(0.18)	$0.24	$(0.18)	$0.24
Per share gain on sale of equity investment[2]	$—	$—	$(0.09)	$—
Per share U.S. tax reform impact	$3.91	$—	$3.95	$—
Per share goodwill impairment [4]	$—	$0.98	$—	$0.98
Adjusted profit per share	$2.16	$0.83	$6.88	$3.42

[1] At statutory tax rates prior to consideration of U.S. tax reform. Full year 2017 also includes $15 million increase to prior year taxes related to non-U.S. restructuring costs.
[2] At statutory tax rates prior to consideration of U.S. tax reform.
[3] Net of U.S. federal tax at 35 percent.
[4] Includes a $17 million tax benefit.
Per share amounts computed using fully diluted shares outstanding except for consolidated loss per share, which was computed using basic shares outstanding.

Supplemental Consolidating Data

We are providing supplemental consolidating data for the purpose of additional analysis. The data has been grouped as follows:

Consolidated – Caterpillar Inc. and its subsidiaries.

Machinery, Energy & Transportation – Caterpillar defines Machinery, Energy & Transportation as it is presented in the supplemental data as Caterpillar Inc. and its subsidiaries with Financial Products accounted for on the equity basis. Machinery, Energy & Transportation information relates to the design, manufacturing and marketing of our products.

Financial Products' information relates to the financing to customers and dealers for the purchase and lease of Caterpillar and other equipment. The nature of these businesses is different, especially with regard to the financial position and cash flow items. Caterpillar management utilizes this presentation internally to highlight these differences. We also believe this presentation will assist readers in understanding our business.

Financial Products – Our finance and insurance subsidiaries, primarily Cat Financial and Insurance Services.

Consolidating Adjustments – Eliminations of transactions between Machinery, Energy & Transportation and Financial Products.

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Pages 68 to 70 reconcile Machinery, Energy & Transportation with Financial Products on the equity basis to Caterpillar Inc. consolidated financial information.

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Supplemental Data for Results of Operations
For The Years Ended December 31

	Consolidated			Supplemental consolidating data								
				Machinery, Energy & Transportation [1]			Financial Products			Consolidating Adjustments		
(Millions of dollars)	2017	2016	2015	2017	2016	2015	2017	2016	2015	2017	2016	2015
Sales and revenues:												
Sales of Machinery, Energy & Transportation	$42,676	$35,773	$44,147	$42,676	$35,773	$44,147	$—	$—	$—	$—	$—	$—
Revenues of Financial Products	2,786	2,764	2,864	—	—	—	3,167	3,065	3,179	(381)[2]	(301)[2]	(315)
Total sales and revenues	45,462	38,537	47,011	42,676	35,773	44,147	3,167	3,065	3,179	(381)	(301)	(315)
Operating costs:												
Cost of goods sold	31,049	28,309	33,546	31,050	28,311	33,548	—	—	—	(1)[3]	(2)[3]	(2)
Selling, general and administrative expenses	5,177	4,686	4,951	4,589	4,129	4,389	604	573	588	(16)[3]	(16)[3]	(26)
Research and development expenses	1,905	1,951	2,119	1,905	1,951	2,119	—	—	—	—	—	—
Interest expense of Financial Products	646	596	587	—	—	—	667	611	593	(21)[4]	(15)[4]	(6)
Goodwill impairment charge	—	595	—	—	595	—	—	—	—	—	—	—
Other operating (income) expenses	2,279	1,902	2,023	1,080	698	821	1,220	1,232	1,224	(21)[3]	(28)[3]	(22)
Total operating costs	41,056	38,039	43,226	38,624	35,684	40,877	2,491	2,416	2,405	(59)	(61)	(56)
Operating profit	4,406	498	3,785	4,052	89	3,270	676	649	774	(322)	(240)	(259)
Interest expense excluding Financial Products	531	505	507	622	553	550	—	—	—	(91)[4]	(48)[4]	(43)
Other income (expense)	207	146	161	(116)	(89)	(103)	92	43	48	231[5]	192[5]	216
Consolidated profit (loss) before taxes	4,082	139	3,439	3,314	(553)	2,617	768	692	822	—	—	—
Provision (benefit) for income taxes	3,339	192	916	3,317	(24)	686	22	216	230	—	—	—
Profit (loss) of consolidated companies	743	(53)	2,523	(3)	(529)	1,931	746	476	592	—	—	—
Equity in profit (loss) of unconsolidated affiliated companies	16	(6)	—	16	(6)	—	—	—	—	—	—	—

Equity in profit of Financial Products' subsidiaries	—	—	—	738	470	591	—	—	—	(738)[6]	(470)[6]	(591)[6]
Profit (loss) of consolidated and affiliated companies	759	(59)	2,523	751	(65)	2,522	746	476	592	(738)	(470)	(591)
Less: Profit (loss) attributable to noncontrolling interests	5	8	11	(3)	2	10	8	6	1	—	—	—
Profit (loss)[7]	$754	$(67)	$2,512	$754	$(67)	$2,512	$738	$470	$591	$(738)	$(470)	$(591)

[1] Represents Caterpillar Inc. and its subsidiaries with Financial Products accounted for on the equity basis.
[2] Elimination of Financial Products' revenues earned from Machinery, Energy & Transportation.
[3] Elimination of net expenses recorded by Machinery, Energy & Transportation paid to Financial Products.
[4] Elimination of interest expense recorded between Financial Products and Machinery, Energy & Transportation.
[5] Elimination of discount recorded by Machinery, Energy & Transportation on receivables sold to Financial Products and of interest earned between Machinery, Energy & Transportation and Financial Products.
[6] Elimination of Financial Products' profit due to equity method of accounting.
[7] Profit (loss) attributable to common shareholders.

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Supplemental Data for Financial Position
At December 31

	Consolidated		Supplemental consolidating data					
			Machinery, Energy & Transportation [1]		Financial Products		Consolidating Adjustments	
(Millions of dollars)	2017	2016	2017	2016	2017	2016	2017	2016
Assets								
Current assets:								
Cash and short-term investments	$8,261	$7,168	$7,381	$5,257	$880	$1,911	$—	$—
Receivables - trade and other	7,436	5,981	4,596	3,910	343	377	2,497 [2,3]	1,694 [2,3]
Receivables - finance	8,757	8,522	—	—	12,985	11,934	(4,228) [3]	(3,412) [3]
Prepaid expenses and other current assets	1,772	1,682	1,099	764	679	926	(6) [4]	(8) [4]
Inventories	10,018	8,614	10,018	8,614	—	—	—	—
Total current assets	36,244	31,967	23,094	18,545	14,887	15,148	(1,737)	(1,726)
Property, plant and equipment - net	14,155	15,322	9,823	10,899	4,332	4,423	—	—
Long-term receivables - trade and other	990	1,029	229	177	162	138	599 [2,3]	714 [2,3]
Long-term receivables - finance	13,542	13,556	—	—	14,170	14,300	(628) [3]	(744) [3]
Investments in Financial Products subsidiaries	—	—	4,064	3,638	—	—	(4,064) [5]	(3,638) [5]
Noncurrent deferred and refundable income taxes	1,693	2,790	2,166	3,648	101	89	(574) [6]	(947) [6]
Intangible assets	2,111	2,349	2,106	2,344	5	5	—	—
Goodwill	6,200	6,020	6,183	6,003	17	17	—	—
Other assets	2,027	1,671	822	609	1,205	1,075	—	(13) [4]
Total assets	$76,962	$74,704	$48,487	$45,863	$34,879	$35,195	$(6,404)	$(6,354)
Liabilities								
Current liabilities:								
Short-term borrowings	$4,837	$7,303	$1	$209	$4,836	$7,094	$—	$—
Short-term borrowings with consolidated companies	—	—	—	—	1,623	1,637	(1,623) [7]	(1,637) [7]
Accounts payable	6,487	4,614	6,330	4,506	265	189	(108) [8]	(81) [8]
Accrued expenses	3,220	3,003	2,880	2,744	340	259	—	—
Accrued wages, salaries and employee benefits	2,559	1,296	2,504	1,268	55	28	—	—
Customer advances	1,193	1,167	1,193	1,167	—	—	—	—
Dividends payable	466	452	466	452	—	—	—	—
Other current liabilities	1,975	1,635	1,560	1,245	423	399	(8) [6,9]	(9) [6,9]
Long-term debt due within one year	6,194	6,662	6	507	6,188	6,155	—	—
Total current liabilities	26,931	26,132	14,940	12,098	13,730	15,761	(1,739)	(1,727)
	23,847	22,818	7,958	8,466	15,918	14,382	(29) [7]	(30) [7]

Long-term debt due after one year								
Liability for postemployment benefits	8,365	9,357	8,365	9,357	—	—	—	—
Other liabilities	4,053	3,184	3,458	2,729	1,167	1,414	(572)[6]	(959)[6,9]
Total liabilities	63,196	61,491	34,721	32,650	30,815	31,557	(2,340)	(2,716)
Commitments and contingencies								
Shareholders' equity								
Common stock	5,593	5,277	5,593	5,277	918	918	(918)[5]	(918)[5]
Treasury stock	(17,005)	(17,478)	(17,005)	(17,478)	—	—	—	—
Profit employed in the business	26,301	27,377	26,301	27,377	3,598	3,585	(3,598)[5]	(3,585)[5]
Accumulated other comprehensive income (loss)	(1,192)	(2,039)	(1,192)	(2,039)	(592)	(990)	592[5]	990[5]
Noncontrolling interests	69	76	69	76	140	125	(140)[5]	(125)[5]
Total shareholders' equity	13,766	13,213	13,766	13,213	4,064	3,638	(4,064)	(3,638)
Total liabilities and shareholders' equity	$76,962	$74,704	$48,487	$45,863	$34,879	$35,195	$(6,404)	$(6,354)

[1] Represents Caterpillar Inc. and its subsidiaries with Financial Products accounted for on the equity basis.
[2] Elimination of receivables between Machinery, Energy & Transportation and Financial Products.
[3] Reclassification of Machinery, Energy & Transportation's trade receivables purchased by Financial Products and Financial Products' wholesale inventory receivables.
[4] Elimination of Machinery, Energy & Transportation's insurance premiums that are prepaid to Financial Products.
[5] Elimination of Financial Products' equity which is accounted for by Machinery, Energy & Transportation on the equity basis.
[6] Reclassification reflecting required netting of deferred tax assets/liabilities by taxing jurisdiction.
[7] Elimination of debt between Machinery, Energy & Transportation and Financial Products.
[8] Elimination of payables between Machinery, Energy & Transportation and Financial Products.
[9] Elimination of prepaid insurance in Financial Products' other liabilities.

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Supplemental Data for Statement of Cash Flow

For the Years Ended December 31	Supplemental consolidating data							
	Consolidated		Machinery, Energy & Transportation [1]		Financial Products		Consolidating Adjustments	
(Millions of dollars)	2017	2016	2017	2016	2017	2016	2017	2016
Cash flow from operating activities:								
Profit (loss) of consolidated and affiliated companies	$759	$(59)	$751	$(65)	$746	$476	$(738) [2]	$(470) [2]
Adjustments for non-cash items:								
Depreciation and amortization	2,877	3,034	2,016	2,144	861	890	—	—
Undistributed profit of Financial Products	—	—	(13)	—	—	—	13 [3]	—
Actuarial (gain) loss on pension and postretirement benefits	301	985	301	985	—	—	—	—
Provision (benefit) for deferred income taxes	1,213	(431)	1,500	(533)	(285)	111	(2) [5]	(9) [5]
Goodwill impairment charge	—	595	—	595	—	—	—	—
Other	746	856	673	687	(179)	(36)	252 [5]	205 [5]
Financial Products' dividend in excess of profit	—	—	—	162	—	—	—	(162) [4]
Changes in assets and liabilities, net of acquisitions and divestitures:								
Receivables - trade and other	(1,151)	829	(649)	171	90	(34)	(592) [5,6]	692 [5,6]
Inventories	(1,295)	1,109	(1,282)	1,113	—	—	(13) [5]	(4) [5]
Accounts payable	1,478	(200)	1,588	(168)	(85)	31	(25) [5]	(63) [5]
Accrued expenses	175	(201)	169	(142)	6	(59)	—	—
Accrued wages, salaries and employee benefits	1,187	(708)	1,160	(693)	27	(15)	—	—
Customer advances	(69)	(37)	(69)	(37)	—	—	—	—
Other assets—net	(192)	224	(186)	77	8	145	(14) [5]	2 [5]
Other liabilities—net	(327)	(360)	(500)	(411)	157	44	16 [5]	7 [5]
Net cash provided by (used for) operating activities	5,702	5,636	5,459	3,885	1,346	1,553	(1,103)	198
Cash flow from investing activities:								
Capital expenditures—excluding equipment leased to others	(898)	(1,109)	(889)	(1,099)	(10)	(11)	1 [5]	1 [5]
Expenditures for equipment leased to others	(1,438)	(1,819)	(27)	(107)	(1,443)	(1,760)	32 [5]	48 [5]
Proceeds from disposals of leased assets and property, plant and equipment	1,164	899	192	125	987	805	(15) [5]	(31) [5]
Additions to finance receivables	(11,953)	(9,339)	—	—	(13,920)	(11,862)	1,967 [6]	2,523 [6]
Collections of finance receivables	12,018	9,369	—	—	14,357	12,341	(2,339) [6]	(2,972) [6]
Net intercompany purchased receivables	—	—	—	—	(732)	399	732 [6]	(399) [6]
Proceeds from sale of finance receivables	127	127	—	—	127	127	—	—
Net intercompany borrowings	—	—	21	(542)	—	1	(21) [7]	541 [7]
Investments and acquisitions (net of cash acquired)	(59)	(191)	(59)	(191)	—	—	—	—

Proceeds from sale of businesses and investments (net of cash sold)	100	—	100	—	—	—	—	—	
Proceeds from sale of securities	932	694	79	30	853	664	—	—	
Investments in securities	(1,048)	(391)	(198)	(24)	(850)	(367)	—	—	
Other—net	61	—	21	31	40	(38)	—	7	[9]
Net cash provided by (used for) investing activities	(994)	(1,760)	(760)	(1,777)	(591)	299	357	(282)	
Cash flow from financing activities:									
Dividends paid	(1,831)	(1,799)	(1,831)	(1,799)	(725)	(632)	725 [8]	632	[8]
Common stock issued, including treasury shares reissued	566	(23)	566	(23)	—	7	—	(7)	[9]
Treasury shares purchased	—	—	—	—	—	—	—	—	
Net intercompany borrowings	—	—	—	(1)	(21)	542	21 [7]	(541)	[7]
Proceeds from debt issued (original maturities greater than three months)	9,063	5,115	361	6	8,702	5,109	—	—	
Payments on debt (original maturities greater than three months)	(8,384)	(6,565)	(1,465)	(533)	(6,919)	(6,032)	—	—	
Short-term borrowings - net (original maturities three months or less)	(3,058)	140	(204)	201	(2,854)	(61)	—	—	
Other—net	(9)	(8)	(9)	(8)	—	—	—	—	
Net cash provided by (used for) financing activities	(3,653)	(3,140)	(2,582)	(2,157)	(1,817)	(1,067)	746	84	
Effect of exchange rate changes on cash	38	(28)	7	(34)	31	6	—	—	
Increase (decrease) in cash and short-term investments	1,093	708	2,124	(83)	(1,031)	791	—	—	
Cash and short-term investments at beginning of period	7,168	6,460	5,257	5,340	1,911	1,120	—	—	
Cash and short-term investments at end of period	$8,261	$7,168	$7,381	$5,257	$880	$1,911	$—	$—	

[1] Represents Caterpillar Inc. and its subsidiaries with Financial Products accounted for on the equity basis.
[2] Elimination of Financial Products' profit after tax due to equity method of accounting.
[3] Elimination of non-cash adjustment for the undistributed earnings from Financial Products.
[4] Elimination of Financial Products' dividend to Machinery, Energy & Transportation in excess of Financial Products' profit.
[5] Elimination of non-cash adjustments and changes in assets and liabilities related to consolidated reporting.
[6] Reclassification of Financial Products' cash flow activity from investing to operating for receivables that arose from the sale of inventory.
[7] Elimination of net proceeds and payments to/from Machinery, Energy & Transportation and Financial Products.
[8] Elimination of dividend from Financial Products to Machinery, Energy & Transportation.
[9] Elimination of change in investment and common stock related to Financial Products.

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

Information required by Item 7A appears in Note 1 — “Operations and summary of significant accounting policies,” Note 3 — “Derivative financial instruments and risk management,” Note 18 — “Fair value disclosures” and Note 19 — “Concentra of credit risk” of Part II, Item 8 "Financial Statements and Supplementary Data." Other information required by Item 7A is included in Part II, Item 7 “Management’s Discussion and Analysis of Financial Condition and Results of Operations.”

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Item 8. Financial Statements and Supplementary Data.

MANAGEMENT'S REPORT ON
INTERNAL CONTROL OVER FINANCIAL REPORTING

The management of Caterpillar Inc. (company) is responsible for establishing and maintaining adequate internal control over financial reporting as such term is defined in Rule 13a-15(f) under the Exchange Act. Our internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of our financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. Our 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.

Management assessed the effectiveness of the company's internal control over financial reporting as of December 31, 2017. In making this assessment, we used the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission (COSO) in Internal Control—Integrated Framework (2013). Based on our assessment we concluded that, as of December 31, 2017, the company's internal control over financial reporting was effective based on those criteria.

The effectiveness of the company's internal control over financial reporting as of December 31, 2017 has been audited by PricewaterhouseCoopers LLP, an independent registered public accounting firm. Their report appears on pages 73-74.

/s/ D. James Umpleby III
D. James Umpleby III
Chief Executive Officer

/s/ Bradley M. Halverson
Bradley M. Halverson
Group President
and Chief Financial Officer

February 15, 2018

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REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Board of Directors and Shareholders of Caterpillar Inc.:

Opinions on the Financial Statements and Internal Control over Financial Reporting

We have audited the accompanying consolidated statement of financial position of Caterpillar Inc. and its subsidiaries as of December 31, 2017 and 2016, and the related consolidated statements of results of operations, comprehensive income (loss), changes in shareholders' equity and cash flow for each of the three years in the period ended December 31, 2017 including the related notes (collectively referred to as the "consolidated financial statements"). We also have audited the Company's internal control over financial reporting as of December 31, 2017, 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, 2017 and 2016, and the results of their operations and their cash flows for each of the three years in the period ended December 31, 2017 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, 2017, 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 the accompanying Management's Report on Internal Control over Financial Reporting. 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.

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

/s/ PricewaterhouseCoopers LLP
PricewaterhouseCoopers LLP
Peoria, Illinois
February 15, 2018

We have served as the Company’s auditor since 1925.

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STATEMENT 1 Consolidated Results of Operations for the Years Ended December 31 (Dollars in millions except per share data)	Caterpillar Inc.		
	2017	2016	2015
Sales and revenues:			
Sales of Machinery, Energy & Transportation	$42,676	$35,773	$44,147
Revenues of Financial Products	2,786	2,764	2,864
Total sales and revenues	45,462	38,537	47,011
Operating costs:			
Cost of goods sold	31,049	28,309	33,546
Selling, general and administrative expenses	5,177	4,686	4,951
Research and development expenses	1,905	1,951	2,119
Interest expense of Financial Products	646	596	587
Goodwill impairment charge	—	595	—
Other operating (income) expenses	2,279	1,902	2,023
Total operating costs	41,056	38,039	43,226
Operating profit	4,406	498	3,785
Interest expense excluding Financial Products	531	505	507
Other income (expense)	207	146	161
Consolidated profit before taxes	4,082	139	3,439
Provision (benefit) for income taxes	3,339	192	916
Profit (loss) of consolidated companies	743	(53)	2,523
Equity in profit (loss) of unconsolidated affiliated companies	16	(6)	—
Profit (loss) of consolidated and affiliated companies	759	(59)	2,523
Less: Profit (loss) attributable to noncontrolling interests	5	8	11
Profit (loss) [1]	$754	$(67)	$2,512
Profit (loss) per common share	$1.27	$(0.11)	$4.23
Profit (loss) per common share — diluted [2,3]	$1.26	$(0.11)	$4.18
Weighted-average common shares outstanding (millions)			
- Basic	591.8	584.3	594.3
- Diluted [2,3]	599.3	584.3	601.3
Cash dividends declared per common share	$3.11	$3.08	$3.01

[1] Profit (loss) attributable to common shareholders.

[2] Diluted by assumed exercise of stock-based compensation awards, using the treasury stock method.

[3]

In 2016, the assumed exercise of stock-based compensation awards was not considered because the impact would be antidilutive.

See accompanying notes to Consolidated Financial Statements.

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STATEMENT 2

Caterpillar Inc.

Consolidated Comprehensive Income (Loss) for the Years Ended December 31
(Millions of dollars)

	2017	2016	2015
Profit (loss) of consolidated and affiliated companies	$759	$(59)	$2,523
Other comprehensive income (loss), net of tax:			
Foreign currency translation, net of tax (provision)/benefit of: 2017 - $96; 2016 - $(30); 2015 - $(82)	765	(17)	(973)
Pension and other postretirement benefits:			
Current year prior service credit (cost), net of tax (provision)/benefit of: 2017 - $(26); 2016 - $(69); 2015 - $5	48	118	(3)
Amortization of prior service (credit) cost, net of tax (provision)/benefit of: 2017 - $9; 2016 - $21; 2015 - $18	(16)	(35)	(35)
Derivative financial instruments:			
Gains (losses) deferred, net of tax (provision)/benefit of: 2017 - $2; 2016 - $33; 2015 - $11	(3)	(62)	(19)
(Gains) losses reclassified to earnings, net of tax (provision)/benefit of: 2017 - $(44); 2016 - $2; 2015 - $(51)	77	(3)	88
Available-for-sale securities:			
Gains (losses) deferred, net of tax (provision)/benefit of: 2017 - $(23); 2016 - $(12); 2015 - $9	41	26	(10)
(Gains) losses reclassified to earnings, net of tax (provision)/benefit of: 2017 - $35; 2016 - $15; 2015 - $20	(65)	(31)	(36)
Total other comprehensive income (loss), net of tax	847	(4)	(988)
Comprehensive income (loss)	1,606	(63)	1,535
Less: comprehensive income attributable to the noncontrolling interests	(5)	(8)	1
Comprehensive income (loss) attributable to shareholders	$1,601	$(71)	$1,536

See accompanying notes to Consolidated Financial Statements.

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STATEMENT 3 Consolidated Financial Position at December 31 (Dollars in millions)	Caterpillar Inc.	
	2017	2016
Assets		
Current assets:		
Cash and short-term investments	$8,261	$7,168
Receivables – trade and other	7,436	5,981
Receivables – finance	8,757	8,522
Prepaid expenses and other current assets	1,772	1,682
Inventories	10,018	8,614
Total current assets	36,244	31,967
Property, plant and equipment – net	14,155	15,322
Long-term receivables – trade and other	990	1,029
Long-term receivables – finance	13,542	13,556
Noncurrent deferred and refundable income taxes	1,693	2,790
Intangible assets	2,111	2,349
Goodwill	6,200	6,020
Other assets	2,027	1,671
Total assets	$76,962	$74,704
Liabilities		
Current liabilities:		
Short-term borrowings:		
Machinery, Energy & Transportation	$1	$209
Financial Products	4,836	7,094
Accounts payable	6,487	4,614
Accrued expenses	3,220	3,003
Accrued wages, salaries and employee benefits	2,559	1,296
Customer advances	1,193	1,167
Dividends payable	466	452
Other current liabilities	1,975	1,635
Long-term debt due within one year:		
Machinery, Energy & Transportation	6	507
Financial Products	6,188	6,155
Total current liabilities	26,931	26,132
Long-term debt due after one year:		
Machinery, Energy & Transportation	7,929	8,436
Financial Products	15,918	14,382
Liability for postemployment benefits	8,365	9,357
Other liabilities	4,053	3,184
Total liabilities	63,196	61,491
Commitments and contingencies (Notes 21 and 22)		
Shareholders’ equity		
Common stock of $1.00 par value: Authorized shares: 2,000,000,000 Issued shares: (2017 and 2016 – 814,894,624 shares) at paid-in amount	5,593	5,277

Treasury stock: (2017 – 217,268,852 shares; and 2016 - 228,408,600 shares) at cost	(17,005)	(17,478)
Profit employed in the business	26,301	27,377
Accumulated other comprehensive income (loss)	(1,192)	(2,039)
Noncontrolling interests	69	76
Total shareholders' equity	13,766	13,213
Total liabilities and shareholders' equity	$76,962	$74,704

See accompanying notes to Consolidated Financial Statements.

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STATEMENT 4 Caterpillar Inc.
Changes in Consolidated Shareholders' Equity for the Years Ended December 31
(Dollars in millions)

	Common stock	Treasury stock	Profit employed in the business	Accumulated other comprehensive income (loss)	Noncontrolling interests	Total
Balance at January 1, 2015	$5,016	$(15,726)	$28,515	$ (1,059)	$ 80	$16,826
Profit (loss) of consolidated and affiliated companies	—	—	2,512	—	11	2,523
Foreign currency translation, net of tax	—	—	—	(961)	(12)	(973)
Pension and other postretirement benefits, net of tax	—	—	—	(38)	—	(38)
Derivative financial instruments, net of tax	—	—	—	69	—	69
Available-for-sale securities, net of tax	—	—	—	(46)	—	(46)
Dividends declared	—	—	(1,781)	—	—	(1,781)
Distribution to noncontrolling interests	—	—	—	—	(7)	(7)
Common shares issued from treasury stock for stock-based compensation: 2,931,595	(78)	111	—	—	—	33
Stock-based compensation expense	283	—	—	—	—	283
Net excess tax benefits from stock-based compensation	10	—	—	—	—	10
Common shares repurchased: 25,841,608 [1]	—	(2,025)	—	—	—	(2,025)
Other	7	—	—	—	4	11
Balance at December 31, 2015	$5,238	$(17,640)	$29,246	$ (2,035)	$ 76	$14,885
Profit (loss) of consolidated and affiliated companies	—	—	(67)	—	8	(59)
Foreign currency translation, net of tax	—	—	—	(17)	—	(17)
Pension and other postretirement benefits, net of tax	—	—	—	83	—	83
Derivative financial instruments, net of tax	—	—	—	(65)	—	(65)
Available-for-sale securities, net of tax	—	—	—	(5)	—	(5)
Change in ownership from noncontrolling interests	(2)	—	—	—	2	—
Dividends declared	—	—	(1,802)	—	—	(1,802)
Distribution to noncontrolling interests	—	—	—	—	(10)	(10)
Common shares issued from treasury stock for stock-based compensation: 4,164,134	(185)	162	—	—	—	(23)
Stock-based compensation expense	218	—	—	—	—	218
Net excess tax benefits from stock-based compensation	(6)	—	—	—	—	(6)
Other	14	—	—	—	—	14
Balance at December 31, 2016	$5,277	$(17,478)	$27,377	$ (2,039)	$ 76	$13,213

(Continued)

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STATEMENT 4 Caterpillar Inc.
Changes in Consolidated Shareholders' Equity for the Years Ended December 31
(Dollars in millions)

	Common stock	Treasury stock	Profit employed in the business	Accumulated other comprehensive income (loss)	Noncontrolling interests	Total
Balance at December 31, 2016	$ 5,277	$(17,478)	$27,377	$ (2,039)	$ 76	$13,213
Adjustment to adopt stock-based compensation guidance[2]	—	—	15	—	—	15
Balance at January 1, 2017	$ 5,277	$(17,478)	$27,392	$ (2,039)	$ 76	$13,228
Profit (loss) of consolidated and affiliated companies	—	—	754	—	5	759
Foreign currency translation, net of tax	—	—	—	765	—	765
Pension and other postretirement benefits, net of tax	—	—	—	32	—	32
Derivative financial instruments, net of tax	—	—	—	74	—	74
Available-for-sale securities, net of tax	—	—	—	(24)	—	(24)
Change in ownership from noncontrolling interests	4	—	—	—	(3)	1
Dividends declared	—	—	(1,845)	—	—	(1,845)
Distribution to noncontrolling interests	—	—	—	—	(9)	(9)
Common shares issued from treasury stock for stock-based compensation: 11,139,748	93	473	—	—	—	566
Stock-based compensation expense	206	—	—	—	—	206
Other	13	—	—	—	—	13
Balance at December 31, 2017	$ 5,593	$(17,005)	$26,301	$ (1,192)	$ 69	$13,766

[1] See Note 16 regarding shares repurchased.
[2] See Note 1K regarding new accounting guidance.

See accompanying notes to Consolidated Financial Statements.

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STATEMENT 5 Caterpillar Inc.
Consolidated Statement of Cash Flow for the Years Ended December 31
(Millions of dollars)

	2017	2016	2015
Cash flow from operating activities:			
Profit (loss) of consolidated and affiliated companies	$759	$(59)	$2,523
Adjustments for non-cash items:			
Depreciation and amortization	2,877	3,034	3,046
Actuarial (gain) loss on pension and postretirement benefits	301	985	179
Provision (benefit) for deferred income taxes	1,213	(431)	(307)
Goodwill impairment charge	—	595	—
Other	746	856	453
Changes in assets and liabilities, net of acquisitions and divestitures:			
Receivables – trade and other	(1,151)	829	764
Inventories	(1,295)	1,109	2,274
Accounts payable	1,478	(200)	(1,165)
Accrued expenses	175	(201)	(199)
Accrued wages, salaries and employee benefits	1,187	(708)	(389)
Customer advances	(69)	(37)	(501)
Other assets – net	(192)	224	143
Other liabilities – net	(327)	(360)	(122)
Net cash provided by (used for) operating activities	5,702	5,636	6,699
Cash flow from investing activities:			
Capital expenditures – excluding equipment leased to others	(898)	(1,109)	(1,388)
Expenditures for equipment leased to others	(1,438)	(1,819)	(1,873)
Proceeds from disposals of leased assets and property, plant and equipment	1,164	899	760
Additions to finance receivables	(11,953)	(9,339)	(9,929)
Collections of finance receivables	12,018	9,369	9,247
Proceeds from sale of finance receivables	127	127	136
Investments and acquisitions (net of cash acquired)	(59)	(191)	(400)
Proceeds from sale of businesses and investments (net of cash sold)	100	—	178
Proceeds from sale of securities	932	694	351
Investments in securities	(1,048)	(391)	(485)
Other – net	61	—	(114)
Net cash provided by (used for) investing activities	(994)	(1,760)	(3,517)
Cash flow from financing activities:			
Dividends paid	(1,831)	(1,799)	(1,757)
Common stock issued, including treasury shares reissued	566	(23)	33
Treasury shares purchased	—	—	(2,025)
Proceeds from debt issued (original maturities greater than three months):			
- Machinery, Energy & Transportation	361	6	3
- Financial Products	8,702	5,109	5,129
Payments on debt (original maturities greater than three months):			
- Machinery, Energy & Transportation	(1,465)	(533)	(517)
- Financial Products	(6,919)	(6,032)	(7,775)
Short-term borrowings – net (original maturities three months or less)	(3,058)	140	3,022
Other – net	(9)	(8)	(7)

Net cash provided by (used for) financing activities	(3,653)	(3,140)	(3,894)
Effect of exchange rate changes on cash	38	(28)	(169)
Increase (decrease) in cash and short-term investments	1,093	708	(881)
Cash and short-term investments at beginning of period	7,168	6,460	7,341
Cash and short-term investments at end of period	$8,261	$7,168	$6,460

All short-term investments, which consist primarily of highly liquid investments with original maturities of three months or less, are considered to be cash equivalents.

Non-cash activities: In September 2016, $381 million of medium-term notes with varying interest rates and maturity dates were exchanged for $366 million of 1.93% medium-term notes due in 2021 and $15 million of cash. In addition, a debt exchange premium of $33 million was paid and is included in the operating activities section of the Consolidated Statement of Cash Flow.

See accompanying notes to Consolidated Financial Statements.

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NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

1. Operations and summary of significant accounting policies

A. Nature of operations

Information in our financial statements and related commentary are presented in the following categories:

Machinery, Energy & Transportation (ME&T) – Represents the aggregate total of Construction Industries, Resource Industries, Energy & Transportation and All Other operating segments and related corporate items and eliminations.

Financial Products – Primarily includes the company's Financial Products Segment. This category includes Caterpillar Financial Services Corporation (Cat Financial), Caterpillar Insurance Holdings Inc. (Insurance Services) and their respective subsidiaries.

Our products are sold primarily under the brands "Caterpillar," "CAT," design versions of "CAT" and "Caterpillar," "EMD," "FG Wilson," "MaK," "MWM," "Perkins," "Progress Rail," "SEM" and "Solar Turbines".

We conduct operations in our Machinery, Energy & Transportation lines of business under highly competitive conditions, including intense price competition. We place great emphasis on the high quality and performance of our products and our dealers' service support. Although no one competitor is believed to produce all of the same types of equipment that we do, there are numerous companies, large and small, which compete with us in the sale of each of our products.

Our machines are distributed principally through a worldwide organization of dealers (dealer network), 48 located in the United States and 123 located outside the United States, serving 192 countries. Reciprocating engines are sold principally through the dealer network and to other manufacturers for use in products. Some of the reciprocating engines manufactured by our subsidiary Perkins Engines Company Limited, are also sold through its worldwide network of 93 distributors covering 182 countries. The FG Wilson branded electric power generation systems primarily manufactured by our subsidiary Caterpillar Northern Ireland Limited are sold through its worldwide network of 154 distributors covering 131 countries. Some of the large, medium speed reciprocating engines are also sold under the MaK brand through a worldwide network of 20 distributors covering 130 countries. Our dealers do not deal exclusively with our products; however, in most cases sales and servicing of our products are the dealers' principal business. Some products, primarily turbines and locomotives, are sold directly to end customers through sales forces employed by the company. At times, these employees are assisted by independent sales representatives.

The Financial Products line of business also conducts operations under highly competitive conditions. Financing for users of Caterpillar products is available through a variety of competitive sources, principally commercial banks and finance and leasing companies. We offer various financing plans designed to increase the opportunity for sales of our products and generate financing income for our company. A significant portion of Financial Products activity is conducted in North America, with additional offices in Latin America, Asia/Pacific, Europe, Africa and Middle East.

B. Basis of presentation

The consolidated financial statements include the accounts of Caterpillar Inc. and its subsidiaries where we have a controlling financial interest.

Investments in companies where our ownership exceeds 20 percent and we do not have a controlling interest or where the ownership is less than 20 percent and for which we have a significant influence are accounted for by the equity

method. See Note 9 for further discussion.

We consolidate all variable interest entities (VIEs) where Caterpillar Inc. is the primary beneficiary. For VIEs, we assess whether we are the primary beneficiary as prescribed by the accounting guidance on the consolidation of VIEs. The primary beneficiary of a VIE is the party that has both the power to direct the activities that most significantly impact the entity's economic performance and the obligation to absorb losses or the right to receive benefits that could potentially be significant to the VIE. See Note 21 for further discussion on a consolidated VIE.

We have affiliates, suppliers and dealers that are VIEs of which we are not the primary beneficiary. Although we have provided financial support, we do not have the power to direct the activities that most significantly impact the economic performance of each entity. Our maximum exposure to loss from VIEs for which we are not the primary beneficiary was as follows:

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	December 31,	
(Millions of dollars)	2017	2016
Receivables - trade and other	$ 34	$ 55
Receivables - finance	42	174
Long-term receivables - finance	38	246
Investments in unconsolidated affiliated companies	39	31
Guarantees	259	210
Total	$ 412	$ 716

In addition, Cat Financial has end-user customers that are VIEs of which we are not the primary beneficiary. Although we have provided financial support to these entities and therefore have a variable interest, we do not have the power to direct the activities that most significantly impact their economic performance. Our maximum exposure to loss from our involvement with these VIEs is limited to the credit risk inherently present in the financial support that we have provided. These risks are evaluated and reflected in our financial statements as part of our overall portfolio of finance receivables and related allowance for credit losses.

Shipping and handling costs are included in Cost of goods sold in Statement 1. Other operating (income) expenses primarily include Cat Financial's depreciation of equipment leased to others, Insurance Services' underwriting expenses, (gains) losses on disposal of long-lived assets, long-lived asset impairment charges, contract termination costs, legal settlements and accruals, employee separation charges and benefit plan curtailment (gains) losses.

Prepaid expenses and other current assets in Statement 3 include prepaid rent, prepaid insurance, prepaid and refundable income tax, assets held for sale, core to be returned for remanufacturing, restricted cash and other short-term investments and other prepaid items.

Certain amounts for prior years have been reclassified to conform with the current-year financial statement presentation.

C. Sales and revenue recognition

Sales of Machinery, Energy & Transportation are recognized and earned when all the following criteria are satisfied: (a) persuasive evidence of a sales arrangement exists; (b) price is fixed and determinable; (c) collectibility is reasonably assured; and (d) delivery has occurred. Persuasive evidence of an arrangement and a fixed or determinable price exist once we receive an order or contract from an end user or independently owned and operated dealer. We assess collectibility at the time of the sale and if collectibility is not reasonably assured, the sale is deferred and not recognized until collectibility is probable or payment is received. Typically, where product is produced and sold in the same country, title and risk of ownership transfer when the product is shipped. Products that are exported from a country for sale typically pass title and risk of ownership at the border of the destination country.

Sales of certain turbine machinery units, draglines and long wall roof supports are recognized under accounting for construction-type contracts, primarily using the percentage-of-completion method. Revenue is recognized based upon progress towards completion, which is estimated and continually updated over the course of construction. We provide for any loss that we expect to incur on these contracts when that loss is probable.

Our remanufacturing operations are primarily focused on the remanufacture of Cat engines and components and rail related products. In this business, used engines and related components (core) are inspected, cleaned and remanufactured. In connection with the sale of most of our remanufactured product, we collect a deposit from the

dealer that is repaid if the dealer returns an acceptable core within a specified time period. Caterpillar owns and has title to the cores when they are returned from dealers and end users. The rebuilt engine or component (the core plus any new content) is then sold as a remanufactured product to dealers and end users. Revenue is recognized pursuant to the same criteria as Machinery, Energy & Transportation sales noted above (title to the entire remanufactured product passes to the dealer upon sale). At the time of sale, the deposit is recognized in Other current liabilities in Statement 3. In addition, the core to be returned is recognized as an asset in Prepaid expenses and other current assets in Statement 3 at the estimated replacement cost (based on historical experience with useable cores). Upon receipt of an acceptable core, we repay the deposit and relieve the liability. The returned core is then included

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in inventory. In the event that the deposit is forfeited (i.e. upon failure by the dealer to return an acceptable core in the specified time period), we recognize the core deposit and the cost of the core in Sales and Cost of goods sold, respectively.

Except for replacement parts, no right of return exists on the sale of our products. Replacement part returns are estimable and accrued at the time a sale is recognized.

We provide discounts to dealers through merchandising programs. We have numerous programs that are designed to promote the sale of our products. The most common dealer programs provide a discount when the dealer sells a product to a targeted end user. The cost of these discounts is estimated based on historical experience and known changes in merchandising programs and is reported as a reduction to sales when the product sale is recognized. A corresponding post-sale discount reserve is accrued in Statement 3, which represents discounts we expect to pay on previously sold products.

Our standard dealer invoice terms are established by marketing region. Our invoice terms for end user sales are established by the responsible business unit. When a sale is made to a dealer, the dealer is responsible for payment even if the product is not sold to an end user. Dealers and end users must make payment within the established invoice terms to avoid potential interest costs. Interest at or above prevailing market rates may be charged on any past due balance, and generally our practice is to not forgive this interest. In 2017, 2016 and 2015 terms were extended to not more than one year for $267 million, $406 million and $635 million of receivables, respectively, which represent approximately 1 percent of consolidated sales.

We establish a bad debt allowance for Machinery, Energy & Transportation receivables when it becomes probable that the receivable will not be collected. Our allowance for bad debts is not significant.

Revenues of Financial Products are generated primarily from finance revenue on finance receivables and rental payments on operating leases. Finance revenue is recorded over the life of the related finance receivable using the interest method, including the accretion of certain direct origination costs that are deferred. Revenue from rental payments received on operating leases is recognized on a straight-line basis over the term of the lease.

Recognition of finance revenue and rental revenue is suspended and the account is placed on non-accrual status when management determines that collection of future income is not probable (generally after 120 days past due). Recognition is resumed, and previously suspended income is recognized, when the account becomes current and collection of remaining amounts is considered probable. See Note 6 for more information.

Sales and revenues are presented net of sales and other related taxes.

D. Inventories

Inventories are stated at the lower of cost or net realizable value. Cost is principally determined using the last-in, first-out (LIFO) method. The value of inventories on the LIFO basis represented about 65 percent and 60 percent of total inventories at December 31, 2017 and 2016.

If the FIFO (first-in, first-out) method had been in use, inventories would have been $1,934 million and $2,139 million higher than reported at December 31, 2017 and 2016, respectively.

E. Depreciation and amortization

Depreciation of plant and equipment is computed principally using accelerated methods. Depreciation on equipment leased to others, primarily for Financial Products, is computed using the straight-line method over the term of the lease. The depreciable basis is the original cost of the equipment less the estimated residual value of the equipment at the end of the lease term. In 2017, 2016 and 2015, Cat Financial depreciation on equipment leased to others was $810 million, $841 million and $836 million, respectively, and was included in Other operating (income) expenses in Statement 1. In 2017, 2016 and 2015, consolidated depreciation expense was $2,555 million, $2,707 million and $2,705 million, respectively. Amortization of purchased finite-lived intangibles is computed principally using the straight-line method, generally not to exceed a period of 20 years.

F. Foreign currency translation

The functional currency for most of our Machinery, Energy & Transportation consolidated companies is the U.S. dollar. The functional currency for most of our Financial Products and affiliates accounted for under the equity method is the respective local currency. Gains and losses resulting from the remeasurement of foreign currency amounts to the functional currency are included in Other income (expense) in Statement 1. Gains and losses resulting from translating assets and liabilities from the functional currency to U.S. dollars are included in Accumulated other comprehensive income (loss) in Statement 3.

G. Derivative financial instruments

Our earnings and cash flow are subject to fluctuations due to changes in foreign currency exchange rates, interest rates and commodity prices. Our Risk Management Policy (policy) allows for the use of derivative financial instruments to prudently manage foreign currency exchange rate, interest rate and commodity price exposures. Our policy specifies that derivatives are not to be used for speculative purposes. Derivatives that we use are primarily foreign currency forward, option, and cross currency contracts, interest rate swaps, and commodity forward and option contracts. All derivatives are recorded at fair value. See Note 3 for more information.

H. Income taxes

The provision for income taxes is determined using the asset and liability approach taking into account guidance related to uncertain tax positions. Tax laws require items to be included in tax filings at different times than the items are reflected in the financial statements. A current liability is recognized for the estimated taxes payable for the current year. Deferred taxes represent the future tax consequences expected to occur when the reported amounts of assets and liabilities are recovered or paid. Deferred taxes are adjusted for enacted changes in tax rates and tax laws. Valuation allowances are recorded to reduce deferred tax assets when it is more likely than not that a tax benefit will not be realized.

I. Goodwill

For acquisitions accounted for as a business combination, goodwill represents the excess of the cost over the fair value of the net assets acquired. We are required to test goodwill for impairment, at the reporting unit level, annually and when events or circumstances make it more likely than not that an impairment may have occurred. A reporting unit is an operating segment or one level below an operating segment (referred to as a component) to which goodwill is assigned when initially recorded. We assign goodwill to reporting units based on our integration plans and the expected synergies resulting from the acquisition. Because Caterpillar is a highly integrated company, the businesses we acquire are sometimes combined with or integrated into existing reporting units. When changes occur in the composition of our operating segments or reporting units, goodwill is reassigned to the affected reporting units based on their relative fair values.

We perform our annual goodwill impairment test as of October 1 and monitor for interim triggering events on an ongoing basis. Goodwill is reviewed for impairment utilizing either a qualitative assessment or a quantitative goodwill impairment test. If we choose to perform a qualitative assessment and determine the fair value more likely than not exceeds the carrying value, no further evaluation is necessary. For reporting units where we perform the quantitative goodwill impairment test, we compare the fair value of each reporting unit, which we primarily determine using an income approach based on the present value of discounted cash flows, to the respective carrying value, which includes goodwill. If the fair value of the reporting unit exceeds its carrying value, the goodwill is not considered impaired. Beginning in 2017, if the carrying value is higher than the fair value, the difference would be recognized as an impairment loss. Prior to 2017, a two-step process was used. For reporting units where we performed the two-step process, the first step required us to compare the fair value of each reporting unit, which we primarily determined

using an income approach based on the present value of discounted cash flows, to the respective carrying value, which includes goodwill. If the fair value of the reporting unit exceeded its carrying value, the goodwill was not considered impaired. If the carrying value was higher than the fair value, there was an indication that an impairment may have existed and the second step was required. In step two, the implied fair value of goodwill was calculated as the excess of the fair value of a reporting unit over the fair values assigned to its assets and liabilities. If the implied fair value of goodwill was less than the carrying value of the reporting unit's goodwill, the difference was recognized as an impairment loss. See Note 10 for further details.

J. Estimates in financial statements

The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect reported amounts. The more significant estimates include: residual values for leased assets, fair values for goodwill impairment tests, impairment of available-for-sale securities, warranty liability, stock-based compensation and reserves for product liability and insurance losses, postretirement benefits, post-sale discounts, credit losses and income taxes.

K. New accounting guidance

Revenue recognition - In May 2014, the Financial Accounting Standards Board (FASB) issued new revenue recognition guidance to provide a single, comprehensive revenue recognition model for all contracts with customers. Under the new guidance, an entity will recognize revenue to depict the transfer of promised goods or services to customers at an amount that the entity expects to be entitled to in exchange for those goods or services. A five step model has been introduced for an entity to apply when recognizing revenue. The new guidance also includes enhanced disclosure requirements, and was effective January 1, 2018. Entities have the option to apply the new guidance under a retrospective approach to each prior reporting period presented, or a modified retrospective approach with the cumulative effect of initially applying the new guidance recognized at the date of initial application within the Consolidated Statement of Changes in Shareholders' Equity. We will adopt the new guidance effective January 1, 2018 under the modified retrospective approach. Under the new guidance, sales of certain turbine machinery units will change to a point-in-time recognition model. Under current guidance, we account for these sales under an over-time model following the percentage-of-completion method as the product is manufactured. In addition, under the new guidance we will begin to recognize an asset for the value of expected replacement part returns and will discontinue lease accounting treatment for certain product sales containing residual value guarantees. We do not expect the adoption to have a material impact on our financial statements.

Simplifying the measurement of inventory - In July 2015, the FASB issued accounting guidance which requires that inventory be measured at the lower of cost or net realizable value. Prior to the issuance of the new guidance, inventory was measured at the lower of cost or market. Replacing the concept of market with the single measurement of net realizable value is intended to create efficiencies for preparers. Inventory measured using the last-in, first-out (LIFO) method and the retail inventory method are not impacted by the new guidance. The guidance was effective January 1, 2017, and was applied prospectively. The adoption did not have a material impact on our financial statements.

Recognition and measurement of financial assets and financial liabilities - In January 2016, the FASB issued accounting guidance that affects the accounting for equity investments, financial liabilities accounted for under the fair value option and the presentation and disclosure requirements for financial instruments. Under the new guidance, all equity investments in unconsolidated entities (other than those accounted for using the equity method of accounting) will generally be measured at fair value through earnings. There will no longer be an available-for-sale classification for equity securities with readily determinable fair values. For financial liabilities when the fair value option has been elected, changes in fair value due to instrument-specific credit risk will be recognized separately in other comprehensive income. In addition, the FASB clarified guidance related to the valuation allowance assessment when recognizing deferred tax assets resulting from unrealized losses on available-for-sale debt securities. The guidance was effective January 1, 2018, and will be applied on a modified retrospective basis through a cumulative effect adjustment to retained earnings as of January 1, 2018. We do not expect the adoption to have a material impact on our financial statements.

Lease accounting - In February 2016, the FASB issued accounting guidance that revises the accounting for leases. Under the new guidance, lessees are required to recognize a right-of-use asset and a lease liability for all leases. The new guidance will continue to classify leases as either financing or operating, with classification affecting the pattern of expense recognition. The accounting applied by a lessor under the new guidance will be substantially equivalent to

current lease accounting guidance. The new guidance is effective January 1, 2019, with early adoption permitted. The new standard is required to be applied with a modified retrospective approach to each prior reporting period presented and provides for certain practical expedients. An implementation team is in the process of evaluating the effect of the new guidance on our financial statements. We plan to adopt the new guidance effective January 1, 2019.

Stock-based compensation - In March 2016, the FASB issued accounting guidance to simplify several aspects of the accounting for share-based payments. The new guidance changes how reporting entities account for certain aspects of share-based payments, including the accounting for income taxes and the classification of the tax impact on the Consolidated Statement of Cash Flow. Under the new guidance all excess tax benefits and deficiencies during the period are recognized in income (rather than equity) on a prospective basis. The guidance removes the requirement to delay recognition of excess tax benefits until it reduces income taxes currently payable. This change was required to be applied on a modified retrospective

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basis, resulting in a cumulative-effect adjustment to opening retained earnings in the period of adoption. In addition, Cash flows related to excess tax benefits are now included in Cash provided by operating activities and will no longer be separately classified as a financing activity. This change was adopted retrospectively. The guidance was effective January 1, 2017, and did not have a material impact on our financial statements.

Measurement of credit losses on financial instruments - In June 2016, the FASB issued accounting guidance to introduce a new model for recognizing credit losses on financial instruments based on an estimate of current expected credit losses. The new guidance will apply to loans, accounts receivable, trade receivables, other financial assets measured at amortized cost, loan commitments and other off-balance sheet credit exposures. The new guidance will also apply to debt securities and other financial assets measured at fair value through other comprehensive income. The new guidance is effective January 1, 2020, with early adoption permitted beginning January 1, 2019. We are in the process of evaluating the effect of the new guidance on our financial statements.

Classification for certain cash receipts and cash payments - In August 2016, the FASB issued accounting guidance related to the presentation and classification of certain transactions in the statement of cash flows where diversity in practice exists. The guidance was effective January 1, 2018, and we do not expect the adoption to have a material impact on our financial statements.

Tax accounting for intra-entity asset transfers - In October 2016, the FASB issued accounting guidance that requires the tax effects of intra-entity asset transfers to be recognized in the period when the transfer occurs. Under previous guidance, the tax effects of intra-entity sales of assets were deferred until the transferred asset was sold to a third party or otherwise recovered through use. The new guidance does not apply to intra-entity transfers of inventory. The guidance was effective January 1, 2018, and will be applied on a modified retrospective basis through a cumulative effect adjustment to retained earnings as of January 1, 2018. We do not expect the adoption to have a material impact on our financial statements.

Classification of restricted cash - In November 2016, the FASB issued accounting guidance related to the presentation and classification of changes in restricted cash on the statement of cash flows where diversity in practice exists. The new standard is required to be applied with a retrospective approach. The guidance was effective January 1, 2018, and we do not expect the adoption to have a material impact on our financial statements.

Clarification on the definition of a business - In January 2017, the FASB issued accounting guidance to clarify the definition of a business with the objective of adding guidance to assist entities with evaluating whether transactions should be accounted for as acquisitions (or disposals) of assets or businesses. The guidance was effective January 1, 2018, with early adoption permitted. We adopted the guidance effective January 1, 2017, and the adoption did not have a material impact on our financial statements.

Simplifying the measurement for goodwill - In January 2017, the FASB issued guidance to simplify the accounting for goodwill impairment. The guidance removes Step 2 of the goodwill impairment test, which requires a hypothetical purchase price allocation. A goodwill impairment will now be the amount by which a reporting unit’s carrying value exceeds its fair value, not to exceed the carrying amount of goodwill. The new guidance will be applied prospectively and is effective January 1, 2020, with early adoption permitted beginning January 1, 2017. We adopted the guidance effective January 1, 2017. The adoption did not have a material impact on our financial statements.

Presentation of net periodic pension costs and net periodic postretirement benefit costs - In March 2017, the FASB issued accounting guidance that will require that an employer disaggregate the service cost component from the other components of net benefit cost. Service cost is required to be reported in the same line item or items as other compensation costs arising from services rendered by the pertinent employees during the period. The other components of net periodic benefit cost are required to be reported outside the subtotal for income from operations.

Additionally, only the service cost component of net benefit costs are eligible for capitalization. The guidance was effective January 1, 2018, and we will apply the presentation changes retrospectively and the capitalization change prospectively. The adoption primarily results in the reclassification of other components of net periodic benefit cost outside of Operating profit in the Consolidated Statement of Results of Operations.

Premium amortization on purchased callable debt securities - In March 2017, the FASB issued accounting guidance related to the amortization period for certain purchased callable debt securities held at a premium. Securities held at a premium will be required to be amortized to the earliest call date rather than the maturity date. The new standard is required to be applied with a modified retrospective approach through a cumulative-effect adjustment directly to retained earnings as of the beginning of the period of adoption. The guidance is effective January 1, 2019, with early adoption permitted. We do not expect the adoption to have a material impact on our financial statements.

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Clarification on stock-based compensation - In May 2017, the FASB issued accounting guidance to clarify which changes to the terms or conditions of a share-based payment award require an entity to apply modification accounting. The new standard is required to be applied prospectively. The guidance was effective January 1, 2018, and we do not expect the adoption to have a material impact on our financial statements.

Derivatives and hedging - In August 2017, the FASB issued accounting guidance to better align hedge accounting with a company's risk management activities, simplify the application of hedge accounting and improve the disclosures of hedging arrangements. The new guidance is required to be applied on a modified retrospective basis, resulting in a cumulative-effect adjustment to opening retained earnings in the period of adoption. The guidance is effective January 1, 2019, with early adoption permitted. The impact on our financial statements at the time of adoption will primarily be reclassification of our gains (losses) for designated ME&T foreign exchange contracts from Other income (expense) to other components of Operating profit in the Consolidated Statement of Results of Operations.

2. Stock-based compensation

Our stock-based compensation plans primarily provide for the granting of stock options, stock-settled stock appreciation rights (SARs), restricted stock units (RSUs) and performance-based restricted stock units (PRSUs) to Officers and other key employees, as well as non-employee Directors. Stock options permit a holder to buy Caterpillar stock at the stock's price when the option was granted. SARs permit a holder the right to receive the value in shares of the appreciation in Caterpillar stock that occurred from the date the right was granted up to the date of exercise. RSUs are agreements to issue shares of Caterpillar stock at the time of vesting. PRSUs are similar to RSUs and include performance conditions in the vesting terms of the award.

Our long-standing practices and policies specify that all stock-based compensation awards are approved by the Compensation Committee (the Committee) of the Board of Directors. The award approval process specifies the grant date, value and terms of the award. The same terms and conditions are consistently applied to all employee grants, including Officers. The Committee approves all individual Officer grants. The number of stock-based compensation award units included in an individual's award is determined based on the methodology approved by the Committee. The exercise price methodology approved by the Committee is the closing price of the Company stock on the date of the grant. In June of 2014, shareholders approved the Caterpillar Inc. 2014 Long-Term Incentive Plan (the Plan) under which all new stock-based compensation awards are granted. In June of 2017, the Plan was amended and restated. The Plan initially provided that up to 38,800,000 Common Shares would be reserved for future issuance under the Plan, subject to adjustment in certain events. Upon shareholder approval of the amendment and restatement of the Plan, an additional 36,000,000 Common Shares became available for all awards under the Plan.

Common stock issued from Treasury stock under the plans totaled 11,139,748 for 2017, 4,164,134 for 2016 and 2,931,595 for 2015. The total number of shares authorized for equity awards under the amended and restated Caterpillar Inc. 2014 Long-Term Incentive Plan is 74,800,000, of which 47,352,427 shares remained available for issuance as of December 31, 2017.

Stock option and RSU awards generally vest according to a three-year graded vesting schedule. One-third of the award will become vested on the first anniversary of the grant date, one-third of the award will become vested on the second anniversary of the grant date and one-third of the award will become vested on the third anniversary of the grant date. PRSU awards generally have a three-year performance period and cliff vest at the end of the period based upon achievement of performance targets established at the time of grant.

Upon separation from service, if the participant is 55 years of age or older with more than five years of service, the participant meets the criteria for a "Long Service Separation." Award terms for awards granted in 2016 and 2015

allow for immediate vesting upon separation of all outstanding options and RSUs with no requisite service period for employees who meet the criteria for a "Long Service Separation." Compensation expense for the 2016 and 2015 grants was fully recognized immediately on the grant date for these employees. Award terms for the 2017 grant allow for continued vesting as of each vesting date specified in the award document for employees who meet the criteria for a "Long Service Separation" and fulfill a requisite service period of six months. Compensation expense for eligible employees for the 2017 grant was recognized over the period from the grant date to the end date of the six-month requisite service period. For employees who become eligible for a "Long Service Separation" subsequent to the end date of the six-month requisite service period and prior to the completion of the vesting period, compensation expense is recognized over the period from the grant date to the date eligibility is achieved.

At grant, SARs and option awards have a term life of ten years. For awards granted prior to 2016, if the “Long Service Separation” criteria are met, the vested options/SARs have a life that is the lesser of ten years from the original grant date or

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five years from the separation date. For awards granted in 2017 and 2016, the vested options/SARs have a life equal to ten years from the original grant date.

Prior to 2017, all outstanding PRSU awards granted to employees eligible for a "Long Service Separation" may vest at the end of the performance period based upon achievement of the performance target. Compensation expense for the 2016 and 2015 PRSU grants was fully recognized immediately on the grant date for these employees. For PRSU awards granted in 2017, only a prorated number of shares may vest at the end of the performance period based upon achievement of the performance target, with the proration based upon the number of months of continuous employment during the three-year performance period. Employees with a "Long Service Separation" must also fulfill a six-month requisite service period in order to be eligible for the prorated vesting of outstanding PRSU awards granted in 2017. Compensation expense for the 2017 PRSU grant is being recognized on a straight-line basis over the three-year performance period for all participants.

Accounting guidance on share-based payments requires companies to estimate the fair value of options/SARs on the date of grant using an option-pricing model. The fair value of our option/SAR grants was estimated using a lattice-based option-pricing model. The lattice-based option-pricing model considers a range of assumptions related to volatility, risk-free interest rate and historical employee behavior. Expected volatility was based on historical Caterpillar stock price movement and current implied volatilities from traded options on Caterpillar stock. The risk-free interest rate was based on U.S. Treasury security yields at the time of grant. The weighted-average dividend yield was based on historical information. The expected life was determined from the lattice-based model. The lattice-based model incorporated exercise and post vesting forfeiture assumptions based on analysis of historical data. The following table provides the assumptions used in determining the fair value of the Option/SAR awards for the years ended December 31, 2017, 2016 and 2015, respectively.

	Grant Year		
	2017	2016	2015
Weighted-average dividend yield	3.4 %	3.2 %	2.3 %
Weighted-average volatility	29.2 %	31.1 %	28.4 %
Range of volatilities	22.1-33.0%	22.5-33.4%	19.9-35.9%
Range of risk-free interest rates	0.81-2.35%	0.62-1.73%	0.22-2.08%
Weighted-average expected lives	8 years	8 years	8 years

The fair value of RSU and PRSU grants was estimated by reducing the stock price on the date of grant by the present value of the estimated dividends to be paid during the vesting period. The estimated dividends are based on Caterpillar’s quarterly dividend per share at the time of the grant.

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Please refer to Tables I and II below for additional information on our stock-based compensation awards.

TABLE I — Financial Information Related to Stock-based Compensation

	Stock options / SARs		RSUs		PRSUs	
	Shares	Weighted-Average Exercise Price	Shares	Weighted-Average Grant Date Fair Value	Shares	Weighted-Average Grant Date Fair Value
Outstanding at January 1, 2017	32,064,790	$ 82.13	3,071,014	$ 78.50	710,286	$ 66.92
Granted to officers and key employees [1]	2,701,644	$ 95.66	924,421	$ 90.11	437,385	$ 86.78
Exercised	(12,997,205)	$ 76.89	—	$ —	—	$ —
Vested	—	$ —	(1,982,565)	$ 82.37	(129,000)	$ 77.47
Forfeited / expired	(269,334)	$ 94.23	(48,353)	$ 79.43	(11,680)	$ 78.14
Outstanding at December 31, 2017	21,499,895	$ 86.86	1,964,517	$ 80.04	1,006,991	$ 74.06
Exercisable at December 31, 2017	15,309,691	$ 87.29				

Stock options/SARs outstanding and exercisable as of December 31, 2017:

	Outstanding				Exercisable			
Exercise Prices	Shares Outstanding at 12/31/17	Weighted-Average Remaining Contractual Life (Years)	Weighted-Average Exercise Price	Aggregate Intrinsic Value [2]	Shares Outstanding at 12/31/17	Weighted-Average Remaining Contractual Life (Years)	Weighted-Average Exercise Price	Aggregate Intrinsic Value [2]
$22.17 - 57.85	1,562,670	1.96	$ 50.47	$ 167	1,562,670	1.96	$ 50.47	$ 167
$73.20 - 74.77	3,577,767	8.02	$ 74.74	296	1,645,141	7.83	$ 74.70	136
$83.00	5,266,798	7.17	$ 83.00	393	3,630,345	7.17	$ 83.00	271
$89.75 - 96.31	7,912,539	6.88	$ 94.17	502	5,291,414	5.74	$ 93.44	339
$102.13 - 110.09	3,180,121	3.74	$ 106.55	162	3,180,121	3.74	$ 106.55	162
	21,499,895		$ 86.86	$ 1,520	15,309,691		$ 87.29	$ 1,075

[1] No SARs were granted during the year ended December 31, 2017.

[2] The difference between a stock award's exercise price and the underlying stock's closing market price at December 31, 2017, for awards with market price greater than the exercise price. Amounts are in millions of dollars.

The computations of weighted-average exercise prices and aggregate intrinsic values are not applicable to RSUs or PRSUs since these awards represent an agreement to issue shares of stock at the time of vesting. At December 31, 2017, there were 1,964,517 outstanding RSUs with a weighted average remaining contractual life of 0.8 years and 1,006,991 outstanding PRSUs with a weighted-average remaining contractual life of 1.4 years.

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TABLE II— Additional Stock-based Award Information

(Dollars in millions except per share data)	2017	2016	2015
Stock options/SARs activity:			
Weighted-average fair value per share of stock awards granted	$25.01	$20.64	$23.61
Intrinsic value of stock awards exercised	$504	$185	$93
Fair value of stock awards vested [1]	$191	$163	$155
Cash received from stock awards exercised	$629	$30	$59
RSUs activity:			
Weighted-average fair value per share of stock awards granted	$90.11	$68.04	$77.55
Fair value of stock awards vested [2]	$189	$162	$109
PRSUs activity:			
Weighted-average fair value per share of stock awards granted	$86.78	$64.71	$77.47
Fair value of stock awards vested [2]	$20	$—	$—

[1] Based on the grant date fair value.
[2] Based on the underlying stock's closing market price on the vesting date.

In accordance with guidance on share-based payments, stock-based compensation expense is based on the grant date fair value and is classified within Cost of goods sold, Selling, general and administrative expenses and Research and development expenses corresponding to the same line item as the cash compensation paid to respective employees, officers and non-employee directors. Stock-based compensation expense is recognized on a straight-line basis over the requisite service period for awards with terms that specify cliff or graded vesting and contain only service conditions. Stock-based compensation expense for PRSUs is based on the probable number of shares expected to vest and is recognized primarily on a straight-line basis.

Before tax, stock-based compensation expense for 2017, 2016 and 2015 was $206 million, $218 million and $283 million, respectively, with a corresponding income tax benefit of $40 million, $61 million and $87 million, respectively.

The amount of stock-based compensation expense capitalized for the years ended December 31, 2017, 2016 and 2015 did not have a significant impact on our financial statements.

At December 31, 2017, there was $150 million of total unrecognized compensation cost from stock-based compensation arrangements granted under the plans, which is related to non-vested stock-based awards. The compensation expense is expected to be recognized over a weighted-average period of approximately 1.8 years.

We currently use shares in treasury stock to satisfy share award exercises.

The cash tax benefits realized from stock awards exercised for 2017, 2016 and 2015 were $205 million, $104 million and $68 million, respectively. We use the direct only method and tax law ordering approach to calculate the tax effects of stock-based compensation.

3. Derivative financial instruments and risk management

Our earnings and cash flow are subject to fluctuations due to changes in foreign currency exchange rates, interest rates and commodity prices. Our Risk Management Policy (policy) allows for the use of derivative financial instruments to prudently manage foreign currency exchange rate, interest rate and commodity price exposures. Our policy specifies that derivatives are not to be used for speculative purposes. Derivatives that we use are primarily foreign currency forward, option and cross currency contracts, interest rate contracts and commodity forward and option contracts. Our derivative activities are subject to the management, direction and control of our senior financial officers. Risk management practices, including the use of financial derivative instruments, are presented to the Audit Committee of the Board of Directors at least annually.

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All derivatives are recognized in Statement 3 at their fair value. On the date the derivative contract is entered into, we designate the derivative as (1) a hedge of the fair value of a recognized asset or liability (fair value hedge), (2) a hedge of a forecasted transaction or the variability of cash flow (cash flow hedge) or (3) an undesignated instrument. Changes in the fair value of a derivative that is qualified, designated and highly effective as a fair value hedge, along with the gain or loss on the hedged recognized asset or liability that is attributable to the hedged risk, are recorded in current earnings. Changes in the fair value of a derivative that is qualified, designated and highly effective as a cash flow hedge are recorded in Accumulated other comprehensive income (loss) (AOCI), to the extent effective, in Statement 3 until they are reclassified to earnings in the same period or periods during which the hedged transaction affects earnings. Changes in the fair value of undesignated derivative instruments and the ineffective portion of designated derivative instruments are reported in current earnings. Cash flows from designated derivative financial instruments are classified within the same category as the item being hedged on Statement 5. Cash flows from undesignated derivative financial instruments are included in the investing category on Statement 5.

We formally document all relationships between hedging instruments and hedged items, as well as the risk-management objective and strategy for undertaking various hedge transactions. This process includes linking all derivatives that are designated as fair value hedges to specific assets and liabilities in Statement 3 and linking cash flow hedges to specific forecasted transactions or variability of cash flow.

We also formally assess, both at the hedge's inception and on an ongoing basis, whether the designated derivatives that are used in hedging transactions are highly effective in offsetting changes in fair values or cash flow of hedged items. When a derivative is determined not to be highly effective as a hedge or the underlying hedged transaction is no longer probable, we discontinue hedge accounting prospectively, in accordance with the derecognition criteria for hedge accounting.

A. Foreign currency exchange rate risk

Foreign currency exchange rate movements create a degree of risk by affecting the U.S. dollar value of sales made and costs incurred in foreign currencies. Movements in foreign currency rates also affect our competitive position as these changes may affect business practices and/or pricing strategies of non-U.S.-based competitors. Additionally, we have balance sheet positions denominated in foreign currencies, thereby creating exposure to movements in exchange rates.

Our Machinery, Energy & Transportation operations purchase, manufacture and sell products in many locations around the world. As we have a diversified revenue and cost base, we manage our future foreign currency cash flow exposure on a net basis. We use foreign currency forward and option contracts to manage unmatched foreign currency cash inflow and outflow. Our objective is to minimize the risk of exchange rate movements that would reduce the U.S. dollar value of our foreign currency cash flow. Our policy allows for managing anticipated foreign currency cash flow for up to five years. As of December 31, 2017, the maximum term of these outstanding contracts was approximately 51 months.

We generally designate as cash flow hedges at inception of the contract any Australian dollar, Brazilian real, British pound, Canadian dollar, Chinese yuan, euro, Indian rupee, Japanese yen, Mexican peso, Norwegian krona, Singapore dollar, or Thailand baht forward or option contracts that meet the requirements for hedge accounting and the maturity extends beyond the current quarter-end. Designation is performed on a specific exposure basis to support hedge accounting. The remainder of Machinery, Energy & Transportation foreign currency contracts are undesignated.

As of December 31, 2017, $5 million of deferred net losses, net of tax, included in equity (AOCI in Statement 3), are expected to be reclassified to current earnings (Other income (expense) in Statement 1) over the next twelve months when earnings are affected by the hedged transactions. The actual amount recorded in Other income (expense) will vary based on exchange rates at the time the hedged transactions impact earnings.

In managing foreign currency risk for our Financial Products operations, our objective is to minimize earnings volatility resulting from conversion and the remeasurement of net foreign currency balance sheet positions, and future transactions denominated in foreign currencies. Our policy allows the use of foreign currency forward, option and cross currency contracts to offset the risk of currency mismatch between our assets and liabilities, and exchange rate risk associated with future transactions denominated in foreign currencies. Our foreign currency forward, option and cross currency contracts are primarily undesignated. We designate fixed-to-fixed cross currency contracts as cash flow hedges to protect against movements in exchange rates on foreign currency fixed rate assets and liabilities.

B. Interest rate risk

Interest rate movements create a degree of risk by affecting the amount of our interest payments and the value of our fixed-rate debt. Our practice is to use interest rate contracts to manage our exposure to interest rate changes.

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Our Machinery, Energy & Transportation operations generally use fixed-rate debt as a source of funding. Our objective is to minimize the cost of borrowed funds. Our policy allows us to enter into fixed-to-floating interest rate contracts and forward rate agreements to meet that objective. We designate fixed-to-floating interest rate contracts as fair value hedges at inception of the contract, and we designate certain forward rate agreements as cash flow hedges at inception of the contract.

Financial Products operations has a match-funding policy that addresses interest rate risk by aligning the interest rate profile (fixed or floating rate) of Cat Financial's debt portfolio with the interest rate profile of their receivables portfolio within predetermined ranges on an ongoing basis. In connection with that policy, we use interest rate derivative instruments to modify the debt structure to match assets within the receivables portfolio. This matched funding reduces the volatility of margins between interest-bearing assets and interest-bearing liabilities, regardless of which direction interest rates move.

Our policy allows us to use fixed-to-floating, floating-to-fixed and floating-to-floating interest rate contracts to meet the match-funding objective. We designate fixed-to-floating interest rate contracts as fair value hedges to protect debt against changes in fair value due to changes in the benchmark interest rate. We designate most floating-to-fixed interest rate contracts as cash flow hedges to protect against the variability of cash flows due to changes in the benchmark interest rate.

We have, at certain times, liquidated fixed-to-floating and floating-to-fixed interest rate contracts at both Machinery, Energy & Transportation and Financial Products. The gains or losses associated with these contracts at the time of liquidation are amortized into earnings over the original term of the previously designated hedged item.

C. Commodity price risk

Commodity price movements create a degree of risk by affecting the price we must pay for certain raw material. Our policy is to use commodity forward and option contracts to manage the commodity risk and reduce the cost of purchased materials.

Our Machinery, Energy & Transportation operations purchase base and precious metals embedded in the components we purchase from suppliers. Our suppliers pass on to us price changes in the commodity portion of the component cost. In addition, we are subject to price changes on energy products such as natural gas and diesel fuel purchased for operational use.

Our objective is to minimize volatility in the price of these commodities. Our policy allows us to enter into commodity forward and option contracts to lock in the purchase price of a portion of these commodities within a five-year horizon. All such commodity forward and option contracts are undesignated.

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The location and fair value of derivative instruments reported in Statement 3 are as follows:

(Millions of dollars)	Consolidated Statement of Financial Position Location	Asset (Liability) Fair Value Years ended December 31, 2017	2016
Designated derivatives			
Foreign exchange contracts			
Machinery, Energy & Transportation	Receivables — trade and other	$ 8	$ 13
Machinery, Energy & Transportation	Long-term receivables — trade and other	4	—
Machinery, Energy & Transportation	Accrued expenses	(14)	(93)
Machinery, Energy & Transportation	Other liabilities	(2)	(36)
Financial Products	Long-term receivables — trade and other	7	29
Financial Products	Accrued expenses	(57)	(3)
Interest rate contracts			
Financial Products	Long-term receivables — trade and other	3	4
Financial Products	Accrued expenses	(2)	(1)
		$ (53)	$ (87)
Undesignated derivatives			
Foreign exchange contracts			
Machinery, Energy & Transportation	Receivables — trade and other	$ 19	$ —
Machinery, Energy & Transportation	Accrued expenses	(9)	(30)
Financial Products	Receivables — trade and other	12	39
Financial Products	Accrued expenses	(9)	(4)
Commodity contracts			
Machinery, Energy & Transportation	Receivables — trade and other	21	10
		$ 34	$ 15

The total notional amounts of the derivative instruments are as follows:

(Millions of dollars)	Years ended December 31, 2017	2016
Machinery, Energy & Transportation	$ 3,190	$ 2,530
Financial Products	$ 3,691	$ 2,626

The notional amounts of the derivative financial instruments do not represent amounts exchanged by the parties. The amounts exchanged by the parties are calculated by reference to the notional amounts and by other terms of the derivatives, such as foreign currency exchange rates, interest rates or commodity prices.

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The effect of derivatives designated as hedging instruments on Statement 1 is as follows:

Fair Value Hedges		Year ended December 31, 2017	
(Millions of dollars)	Classification	Gains (Losses) on Derivatives	Gains (Losses) on Borrowings
Interest rate contracts			
Financial Products	Other income (expense)	$ (2)	$ 2
		$ (2)	$ 2

		Year ended December 31, 2016	
	Classification	Gains (Losses) on Derivatives	Gains (Losses) on Borrowings
Interest rate contracts			
Financial Products	Other income (expense)	$ (12)	$ 11
		$ (12)	$ 11

		Year ended December 31, 2015	
	Classification	Gains (Losses) on Derivatives	Gains (Losses) on Borrowings
Interest rate contracts			
Financial Products	Other income (expense)	$ (27)	$ 26
		$ (27)	$ 26

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Cash Flow Hedges
(Millions of dollars)

	Year ended December 31, 2017			
	Recognized in Earnings			
	Amount of Gains (Losses) Recognized in AOCI (Effective Portion)	Classification of Gains (Losses)	Amount of Gains (Losses) Reclassified from AOCI to Earnings	Recognized in Earnings (Ineffective Portion)
Foreign exchange contracts				
Machinery, Energy & Transportation	$72	Other income (expense)	$ (40)	$ —
Financial Products	(77)	Other income (expense)	(81)	—
Financial Products	—	Interest expense of Financial Products	6	—
Interest rate contracts				
Machinery, Energy & Transportation	—	Interest expense excluding Financial Products	(9)	—
Financial Products	—	Interest expense of Financial Products	3	—
	$(5)		$ (121)	$ —

	Year ended December 31, 2016			
	Recognized in Earnings			
	Amount of Gains (Losses) Recognized in AOCI (Effective Portion)	Classification of Gains (Losses)	Amount of Gains (Losses) Reclassified from AOCI to Earnings	Recognized in Earnings (Ineffective Portion)
Foreign exchange contracts				
Machinery, Energy & Transportation	$(118)	Other income (expense)	$ (14)	$ —
Financial Products	15	Other income (expense)	28	—
Interest rate contracts				
Machinery, Energy & Transportation	—	Interest expense excluding Financial Products	(6)	—
Financial Products	8	Interest expense of Financial Products	(3)	—
	$(95)		$ 5	$ —

	Year ended December 31, 2015			
	Recognized in Earnings			
	Amount of Gains	Classification of Gains (Losses)	Amount of Gains (Losses)	Recognized in Earnings (Ineffective

	(Losses) Recognized in AOCI (Effective Portion)		Reclassified from AOCI to Earnings	Portion)
Foreign exchange contracts				
Machinery, Energy & Transportation	$(33)	Other income (expense)	$ (128)	$ —
Financial Products	—	Other income (expense)	1	—
Interest rate contracts				
Machinery, Energy & Transportation	—	Interest expense excluding Financial Products	(6)	—
Financial Products	3	Interest expense of Financial Products	(6)	—
	$(30)		$ (139)	$ —

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The effect of derivatives not designated as hedging instruments on Statement 1 is as follows:

		Years ended December 31,		
(Millions of dollars)	Classification of Gains (Losses)	2017	2016	2015
Foreign exchange contracts				
Machinery, Energy & Transportation	Other income (expense)	$ 72	$ (4)	$ (32)
Financial Products	Other income (expense)	9	(24)	(34)
Interest rate contracts				
Machinery, Energy & Transportation	Other income (expense)	—	2	2
Commodity contracts				
Machinery, Energy & Transportation	Other income (expense)	30	16	(23)
		$ 111	$ (10)	$ (87)

We enter into International Swaps and Derivatives Association (ISDA) master netting agreements within Machinery, Energy & Transportation and Financial Products that permit the net settlement of amounts owed under their respective derivative contracts. Under these master netting agreements, net settlement generally permits the company or the counterparty to determine the net amount payable for contracts due on the same date and in the same currency for similar types of derivative transactions. The master netting agreements generally also provide for net settlement of all outstanding contracts with a counterparty in the case of an event of default or a termination event.

Collateral is generally not required of the counterparties or of our company under the master netting agreements. As of December 31, 2017 and 2016, no cash collateral was received or pledged under the master netting agreements.

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The effect of the net settlement provisions of the master netting agreements on our derivative balances upon an event of default or termination event is as follows:

December 31, 2017				Gross Amounts Not Offset in the Statement of Financial Position		
(Millions of dollars)	Gross Amount of Recognized Assets	Gross Amounts Offset in the Statement of Financial Position	Net Amount of Assets Presented in the Statement of Financial Position	Financial Instruments	Cash Collateral Received	Net Amount of Assets
Derivatives						
Machinery, Energy & Transportation	$ 52	$ —	$ 52	$ (22)	$ —	$ 30
Financial Products	22	—	22	(10)	—	12
Total	$ 74	$ —	$ 74	$ (32)	$ —	$ 42

December 31, 2017				Gross Amounts Not Offset in the Statement of Financial Position		
(Millions of dollars)	Gross Amount of Recognized Liabilities	Gross Amounts Offset in the Statement of Financial Position	Net Amount of Liabilities Presented in the Statement of Financial Position	Financial Instruments	Cash Collateral Pledged	Net Amount of Liabilities
Derivatives						
Machinery, Energy & Transportation	$ (25)	$ —	$ (25)	$ 22	$ —	$ (3)
Financial Products	(68)	—	(68)	10	—	(58)
Total	$ (93)	$ —	$ (93)	$ 32	$ —	$ (61)

December 31, 2016				Gross Amounts Not Offset in the Statement of Financial Position		
(Millions of dollars)	Gross Amount of Recognized Assets	Gross Amounts Offset in the Statement of Financial Position	Net Amount of Assets Presented in the Statement of Financial	Financial Instruments	Cash Collateral Received	Net Amount of Assets

			Position			
Derivatives						
Machinery, Energy & Transportation	$ 23	$ —	$ 23	$ (21)	$ —	$ 2
Financial Products	72	—	72	(7)	—	65
Total	$ 95	$ —	$ 95	$ (28)	$ —	$ 67

December 31, 2016				Gross Amounts Not Offset in the Statement of Financial Position		
(Millions of dollars)	Gross Amount of Recognized Liabilities	Gross Amounts Offset in the Statement of Financial Position	Net Amount of Liabilities Presented in the Statement of Financial Position	Financial Instruments	Cash Collateral Pledged	Net Amount of Liabilities
Derivatives						
Machinery, Energy & Transportation	$ (159)	$ —	$ (159)	$ 21	$ —	$ (138)
Financial Products	(8)	—	(8)	7	—	(1)
Total	$ (167)	$ —	$ (167)	$ 28	$ —	$ (139)

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4. Other income (expense)

	Years ended December 31,		
(Millions of dollars)	2017	2016	2015
Investment and interest income	$ 122	$ 74	$ 65
Foreign exchange gains (losses) [1]	(213)	(57)	(173)
License fee income	100	92	111
Gains (losses) on sale of securities and affiliated companies	187 [3]	47	176 [2]
Miscellaneous income (loss)	11	(10)	(18)
Total	$ 207	$ 146	$ 161

[1] Includes gains (losses) from foreign exchange derivative contracts. See Note 3 for further details.

[2] Includes pretax gain of $120 million related to the sale of Caterpillar's equity interest in the third party logistics business.

[3] Includes pretax gain of $85 million related to the sale of Caterpillar's equity interest in Iron Planet Holdings Inc. See Note 9 for further details.

5. Income taxes

On December 22, 2017, U.S. tax legislation was enacted containing a broad range of tax reform provisions including a corporate tax rate reduction and changes in the U.S. taxation of non-U.S. earnings. We have not completed our accounting for the income tax effects of U.S. tax reform. However, we have made a reasonable estimate of the 2017 financial statement impact as of January 18, 2018, and recognized a provisional charge of $2.371 billion. We will continue to update our calculations as additional required information is prepared and analyzed, interpretations and assumptions are refined, additional guidance is issued, and due to actions we may take as a result of the legislation. These updates could significantly impact the provision for income taxes, the amount of taxes payable, and the deferred tax asset and liability balances.

The provisionally estimated charge includes a $596 million write-down of net deferred tax assets to reflect the reduction in the U.S. corporate tax rate from 35 percent to 21 percent beginning January 1, 2018. We are still analyzing certain aspects of the law and refining our calculations of basis differences as of December 31, 2017, which could affect the measurement of these balances.

The provisionally estimated charge includes $1.775 billion for the estimated cost of a mandatory deemed repatriation of non-U.S. earnings, including changes in the deferred tax liability related to the amount of earnings considered not indefinitely reinvested as well as the amount of unrecognized tax benefits and state tax liabilities associated with these tax positions. The U.S. federal tax cost for the mandatory deemed repatriation is computed at 15.5 percent for non-U.S. earnings held in liquid assets and 8 percent for non-liquid assets, reduced by applicable foreign tax credits. These estimates are provisional due to additional information and analysis required to determine cumulative taxable earnings since 1986 for non-U.S. subsidiaries at two separate points in time and to determine the amount of earnings that are held in liquid versus non-liquid assets as defined in the new legislation at several different measurement periods. In addition, information is being gathered and analyzed to support available foreign tax credits including estimates of credit utilization and valuation allowance considerations for any remaining foreign tax credit carryforward. Due to uncertainty about aspects of the tax law, we have made various assumptions to determine our reasonable estimate that we expect to refine as additional guidance is issued.

As a result of U.S. tax reform legislation, distributions of profits from non-U.S. subsidiaries are not expected to cause a significant U.S. tax impact in the future. However, these distributions may be subject to non-U.S. withholding taxes if profits are distributed from certain jurisdictions. We have recorded a deferred tax liability of $138 million for withholding taxes in non-U.S. jurisdictions where earnings are not considered indefinitely reinvested. Additional information and analysis are needed to determine the final amount of deferred tax liability considering factors such as whether non-U.S. entities are subject to withholding taxes, have reserve requirements, or have projected working capital and other capital needs in the country where the earnings were generated that would result in a decision to indefinitely reinvest a portion or all their earnings.

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Reconciliation of the U.S. federal statutory rate to effective rate:

	Years ended December 31,					
(Millions of dollars)	2017		2016		2015	
Taxes at U.S. statutory rate	$1,429	35.0 %	$49	35.0 %	$1,203	35.0 %
(Decreases) increases resulting from:						
Non-U.S. subsidiaries taxed at other than 35%	(282)	(6.9)%	(119)	(85.6)%	(236)	(6.9)%
State and local taxes, net of federal [1]	27	0.7 %	(1)	(0.7)%	24	0.7 %
Interest and penalties, net of tax	28	0.7 %	24	17.2 %	12	0.4 %
U.S. research and production incentives	(52)	(1.3)%	(52)	(37.4)%	(95)	(2.7)%
ESOP dividend tax benefit	(21)	(0.5)%	(27)	(19.4)%	(27)	(0.8)%
Net excess tax benefits from stock-based compensation	(64)	(1.6)%	—	— %	—	— %
U.S. deferred tax rate change	596	14.6 %	—	— %	—	— %
Mandatory deemed repatriation of non-U.S. earnings	1,775	43.5 %	—	— %	—	— %
Valuation allowances	(111)	(2.7)%	141	101.4 %	—	— %
Nondeductible goodwill [2]	—	— %	191	137.4 %	—	— %
Prior year tax and interest adjustments	—	— %	—	— %	42	1.2 %
Other—net	14	0.3 %	(14)	(10.1)%	(7)	(0.2)%
Provision (benefit) for income taxes	$3,339	81.8 %	$192	137.8 %	$916	26.7 %

[1] Excludes amounts included in valuation allowances and mandatory deemed repatriation of non-U.S. earnings.
[2] Portion of Surface Mining & Technology goodwill impairment not deductible for tax purposes. See Note 10 for further discussion.

Included in the line item above labeled "Non-U.S. subsidiaries taxed at other than 35%" are the effects of earnings of non-U.S. subsidiaries taxed at local tax rates, changes in the amount of unrecognized tax benefits associated with these earnings, losses at non-U.S. subsidiaries without local tax benefits due to valuation allowances, and other permanent differences between tax and U.S. GAAP results. Caterpillar SARL (CSARL), primarily taxable locally in Switzerland, contributes the most significant amount of this line item. Although not individually significant by jurisdiction, pre-tax permanent differences due to nondeductible net foreign exchange gains/losses of non-U.S. subsidiaries were approximately $160 million of net gains in 2017 and $130 million of net losses in 2016 and 2015.

The provision for income taxes for 2017 also includes a decrease in the valuation allowance for U.S. state deferred tax assets resulting in a $111 million non-cash benefit, net of federal deferred tax adjustment at 35 percent. The primary driver of the decrease is improved U.S. GAAP profits expected to recur in certain state jurisdictions. This reverses a significant portion of the increase in the valuation allowance for U.S. state deferred tax assets in 2016 that resulted in a $141 million non-cash charge, net of federal deferred tax adjustment at 35 percent.

The provision for income taxes for 2015 included a prior year net tax and interest charge of $42 million to increase unrecognized tax benefits by $68 million offset by a benefit of $26 million to record U.S. refund claims related to prior tax years currently under examination. In the audit of 2007 to 2009 including the loss carryback to 2005, the U.S. Internal Revenue Service (IRS) disallowed approximately $125 million of foreign tax credits that arose as a result of certain financings unrelated to CSARL. Decisions of the U.S. Court of Appeals for the Second Circuit involving other taxpayers in 2015 caused us to conclude the benefits of this uncertain tax position were no longer more likely than not to be sustained based on technical merits resulting in an increase of $68 million to unrecognized tax benefits. We continue to monitor ongoing court cases involving other taxpayers for information that may impact our analysis of this tax position.

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The components of profit (loss) before taxes were:

	Years ended December 31,		
(Millions of dollars)	2017	2016	2015
U.S.	$240	$(2,053)	$636
Non-U.S.	3,842	2,192	2,803
	$4,082	$139	$3,439

Profit before taxes, as shown above, is based on the location of the entity to which such earnings are attributable. Where an entity's earnings are subject to taxation, however, may not correlate solely to where an entity is located. Thus, the income tax provision shown below as U.S. or non-U.S. may not correspond to the earnings shown above.

The components of the provision (benefit) for income taxes were:

	Years ended December 31,		
(Millions of dollars)	2017	2016	2015
Current tax provision (benefit):			
U.S.[1]	$963	$(90)	$525
Non-U.S.	1,124	718	656
State (U.S.)	39	(5)	42
	2,126	623	1,223
Deferred tax provision (benefit):			
U.S.[1]	1,385	(544)	(367)
Non-U.S.	(17)	(108)	66
State (U.S.)	(155)	221	(6)
	1,213	(431)	(307)
Total provision (benefit) for income taxes	$3,339	$192	$916

[1] Includes U.S. taxes related to non-U.S. earnings.

We paid net income tax and related interest of $1,404 million, $522 million and $1,143 million in 2017, 2016 and 2015, respectively.

Accounting for income taxes under U.S. GAAP requires that individual tax-paying entities of the company offset all deferred tax liabilities and assets within each particular tax jurisdiction and present them as a noncurrent deferred tax liability or asset in the Consolidated Financial Position. Amounts in different tax jurisdictions cannot be offset against each other. The amount of deferred income taxes at December 31, included on the following lines in Statement 3, are as follows:

	December 31,	
(Millions of dollars)	2017	2016
Assets:		
Noncurrent deferred and refundable income taxes	1,569	2,683
Liabilities:		
Other liabilities	281	237
Deferred income taxes—net	$1,288	$2,446

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Deferred income tax assets and liabilities:

(Millions of dollars)	December 31, 2017	2016
Deferred income tax assets:		
Tax carryforwards	$1,286	$1,999
Pension	980	1,887
Postemployment benefits other than pensions	841	1,318
Warranty reserves	226	339
Stock-based compensation	135	316
Allowance for credit losses	149	209
Post sale discounts	160	207
Other employee compensation and benefits	203	262
Other—net	302	569
	4,282	7,106
Deferred income tax liabilities:		
Capital and intangible assets	(1,360)	(2,455)
Bond discount	(133)	(223)
Translation	(165)	(368)
Other outside basis differences	(205)	(227)
Undistributed profits of non-U.S. subsidiaries	(138)	(285)
	(2,001)	(3,558)
Valuation allowance for deferred tax assets	(993)	(1,102)
Deferred income taxes—net	$1,288	$2,446

At December 31, 2017, approximately $1,437 million of U.S. state tax net operating losses (NOLs) and $124 million of U.S. state tax credit carryforwards were available. The state NOLs primarily expire over the next twenty years. The state tax credit carryforwards primarily expire over the next fifteen years. In total, we have established a valuation allowance of $269 million related to certain of these carryforwards along with other U.S. state deferred tax assets.

At December 31, 2017, amounts and expiration dates of net operating loss carryforwards in various non-U.S. taxing jurisdictions were:

(Millions of dollars)						
2018	2019	2020	2021-2023	2024-2038	Unlimited	Total
$23	$133	$212	$ 272	$ 223	$ 3,625	$4,488

At December 31, 2017, non-U.S. entities that have not yet demonstrated consistent and/or sustainable profitability to support the realization of net deferred tax assets have recorded valuation allowances of $724 million, including certain entities in Luxembourg.

A reconciliation of the beginning and ending amount of gross unrecognized tax benefits for uncertain tax positions, including positions impacting only the timing of tax benefits, follows.

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Reconciliation of unrecognized tax benefits: [1]

	Years ended December 31,	
(Millions of dollars)	2017	2016
Balance at January 1,	$ 1,032	$ 968
Additions for tax positions related to current year	270	73
Additions for tax positions related to prior years	20	55
Reductions for tax positions related to prior years	(27)	(36)
Reductions for settlements [2]	(9)	(24)
Reductions for expiration of statute of limitations	—	(4)
Balance at December 31,	$ 1,286	$ 1,032
Amount that, if recognized, would impact the effective tax rate	$ 1,209	$ 963

[1] Foreign currency impacts are included within each line as applicable.
[2] Includes cash payment or other reduction of assets to settle liability.

We classify interest and penalties on income taxes as a component of the provision for income taxes. We recognized a net provision for interest and penalties of $38 million, $34 million and $20 million during the years ended December 31, 2017, 2016 and 2015, respectively. The total amount of interest and penalties accrued was $157 million and $120 million as of December 31, 2017 and 2016, respectively.

On January 31, 2018, we received a Revenue Agent's Report from the IRS indicating the end of the field examination of our U.S. income tax returns for 2010 to 2012. In the audits of 2007 to 2012 including the impact of a loss carryback to 2005, the IRS has proposed to tax in the United States profits earned from certain parts transactions by CSARL, based on the IRS examination team’s application of the “substance-over-form” or “assignment-of-income” judicial doctrines. We are vigorously contesting the proposed increases to tax and penalties for these years of approximately $2.3 billion. We believe that the relevant transactions complied with applicable tax laws and did not violate judicial doctrines. We have filed U.S. income tax returns on this same basis for years after 2012. Based on the information currently available, we do not anticipate a significant increase or decrease to our unrecognized tax benefits for this matter within the next 12 months. We currently believe the ultimate disposition of this matter will not have a material adverse effect on our consolidated financial position, liquidity or results of operations.

With the exception of a loss carryback to 2005, tax years prior to 2007 are generally no longer subject to U.S. tax assessment. In our major non-U.S. jurisdictions including Australia, Brazil, China, Germany, Japan, Mexico, Switzerland, Singapore and the U.K., tax years are typically subject to examination for three to ten years. Due to the uncertainty related to the timing and potential outcome of audits, we cannot estimate the range of reasonably possible change in unrecognized tax benefits in the next 12 months.

6. Cat Financial Financing Activities

A. Wholesale inventory receivables

Wholesale inventory receivables are receivables of Cat Financial that arise when Cat Financial provides financing for a dealer’s purchase of inventory. These receivables are included in Receivables—trade and other and Long-term receivables—trade and other in Statement 3 and were $1,398 million and $1,727 million, at December 31, 2017 and

2016, respectively.

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Contractual maturities of outstanding wholesale inventory receivables:

(Millions of dollars)	December 31, 2017			
Amounts Due In	Wholesale Installment Contracts	Wholesale Finance Leases	Wholesale Notes	Total
2018	$164	$ 67	$ 527	$758
2019	114	49	127	290
2020	75	28	83	186
2021	36	17	9	62
2022	11	7	5	23
Thereafter	—	3	11	14
	400	171	762	1,333
Guaranteed residual value	—	54	—	54
Unguaranteed residual value	—	37	—	37
Less: Unearned income	(7)	(17)	(2)	(26)
Total	$393	$ 245	$ 760	$1,398

Cat Financial's wholesale inventory receivables generally may be repaid or refinanced without penalty prior to contractual maturity. Accordingly, this presentation should not be regarded as a forecast of future cash collections.

Please refer to Note 18 and Table III for fair value information.

B. Finance receivables

Finance receivables are receivables of Cat Financial and are reported in Statement 3 net of an allowance for credit losses.

Contractual maturities of outstanding finance receivables:

(Millions of dollars)	December 31, 2017			
Amounts Due In	Retail Installment Contracts	Retail Finance Leases	Retail Notes	Total
2018	$2,644	$ 2,713	$3,511	$8,868
2019	1,925	1,887	1,504	5,316
2020	1,212	1,059	1,439	3,710
2021	595	432	1,157	2,184
2022	201	148	864	1,213
Thereafter	26	56	846	928
	6,603	6,295	9,321	22,219
Guaranteed residual value	—	402	—	402
Unguaranteed residual value	—	804	—	804
Less: Unearned income	(145)	(588)	(60)	(793)
Total	$6,458	$ 6,913	$9,261	$22,632

Cat Financial's finance receivables generally may be repaid or refinanced without penalty prior to contractual maturity. Accordingly, this presentation should not be regarded as a forecast of future cash collections.

Please refer to Note 18 and Table III for fair value information.

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C. Allowance for credit losses

The allowance for credit losses is an estimate of the losses inherent in Cat Financial's finance receivable portfolio and includes consideration of accounts that have been individually identified as impaired, as well as pools of finance receivables where it is probable that certain receivables in the pool are impaired but the individual accounts cannot yet be identified. In identifying and measuring impairment, management takes into consideration past loss experience, known and inherent risks in the portfolio, adverse situations that may affect the borrower's ability to repay, estimated value of underlying collateral and current economic conditions.

Accounts are identified for individual review based on past-due status and information available about the customer, such as financial statements, news reports and published credit ratings, as well as general information regarding industry trends and the economic environment in which Cat Financial's customers operate. The allowance for credit losses attributable to finance receivables that are individually evaluated and determined to be impaired is based on the present value of expected future cash flows discounted at the receivables' effective interest rate, the fair value of the collateral for collateral-dependent receivables or the observable market price of the receivable. In determining collateral value, Cat Financial estimates the current fair market value of the collateral less selling costs. Cat Financial also considers credit enhancements such as additional collateral and contractual third-party guarantees. The allowance for credit losses attributable to the remaining accounts not yet individually identified as impaired is estimated based on loss forecast models utilizing probabilities of default, our estimate of the loss emergence period and the estimated loss given default. In addition, qualitative factors not able to be fully captured in the loss forecast models including industry trends, macroeconomic factors and model imprecision are considered in the evaluation of the adequacy of the allowance for credit losses. These qualitative factors are subjective and require a degree of management judgment.

Cat Financial's allowance for credit losses is segregated into two portfolio segments:

- Customer - Finance receivables with retail customers.

- Dealer - Finance receivables with Caterpillar dealers.

A portfolio segment is the level at which the Company develops a systematic methodology for determining its allowance for credit losses.

Cat Financial further evaluates portfolio segments by the class of finance receivables, which is defined as a level of information (below a portfolio segment) in which the finance receivables have the same initial measurement attribute and a similar method for assessing and monitoring credit risk. Typically, Cat Financial's finance receivables within a geographic area have similar credit risk profiles and methods for assessing and monitoring credit risk. Cat Financial's classes, which align with management reporting for credit losses, are as follows:

- North America - Finance receivables originated in the United States and Canada.

- Europe - Finance receivables originated in Europe, Africa, Middle East and the Commonwealth of Independent States.

- Asia Pacific - Finance receivables originated in Australia, New Zealand, China, Japan, and Southeast Asia.

- Mining - Finance receivables related to large mining customers worldwide and project financing in various countries.

- Latin America - Finance receivables originated in Mexico, Central and South American countries.

- Caterpillar Power Finance - Finance receivables related to marine vessels with Caterpillar engines worldwide and Caterpillar electrical power generation, gas compression and co-generation systems and non-Caterpillar equipment that is powered by these systems worldwide.

An analysis of the allowance for credit losses was as follows:

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(Millions of dollars)	December 31, 2017		
	Customer	Dealer	Total
Allowance for Credit Losses:			
Balance at beginning of year	$331	$10	$341
Receivables written off	(157)	—	(157)
Recoveries on receivables previously written off	43	—	43
Provision for credit losses	129	(1)	128
Other	7	—	7
Balance at end of year	$353	$9	$362
Individually evaluated for impairment	$149	$—	$149
Collectively evaluated for impairment	204	9	213
Ending Balance	$353	$9	$362
Recorded Investment in Finance Receivables:			
Individually evaluated for impairment	$942	$—	$942
Collectively evaluated for impairment	18,226	3,464	21,690
Ending Balance	$19,168	$3,464	$22,632

(Millions of dollars)	December 31, 2016		
	Customer	Dealer	Total
Allowance for Credit Losses:			
Balance at beginning of year	$327	$9	$336
Receivables written off	(158)	—	(158)
Recoveries on receivables previously written off	35	—	35
Provision for credit losses	132	1	133
Other	(5)	—	(5)
Balance at end of year	$331	$10	$341
Individually evaluated for impairment	$85	$—	$85
Collectively evaluated for impairment	246	10	256
Ending Balance	$331	$10	$341
Recorded Investment in Finance Receivables:			
Individually evaluated for impairment	$786	$—	$786
Collectively evaluated for impairment	18,236	3,375	21,611
Ending Balance	$19,022	$3,375	$22,397

Credit quality of finance receivables

At origination, Cat Financial evaluates credit risk based on a variety of credit quality factors including prior payment experience, customer financial information, credit-rating agency ratings, loan-to-value ratios and other internal metrics. On an ongoing basis, Cat Financial monitors credit quality based on past-due status and collection experience as there is a meaningful correlation between the past-due status of customers and the risk of loss.

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In determining past-due status, Cat Financial considers the entire recorded investment in finance receivable past due when any installment is over 30 days past due. The tables below summarize the recorded investment of finance receivables by aging category.

(Millions of dollars)	December 31, 2017						
	31-60 Days Past Due	61-90 Days Past Due	91+ Days Past Due	Total Past Due	Current	Total Finance Receivables	91+ Still Accruing
Customer							
North America	$71	$15	$42	$ 128	$7,950	$ 8,078	$ 8
Europe	21	10	46	77	2,718	2,795	13
Asia Pacific	13	7	14	34	2,009	2,043	5
Mining	3	1	60	64	1,751	1,815	9
Latin America	37	55	142	234	1,531	1,765	—
Caterpillar Power Finance	20	32	144	196	2,476	2,672	1
Dealer							
North America	—	—	—	—	1,920	1,920	—
Europe	—	—	—	—	222	222	—
Asia Pacific	—	—	—	—	553	553	—
Mining	—	—	—	—	4	4	—
Latin America	—	72	—	72	691	763	—
Caterpillar Power Finance	—	—	—	—	2	2	—
Total	$165	$192	$448	$ 805	$21,827	$ 22,632	$ 36

(Millions of dollars)	December 31, 2016						
	31-60 Days Past Due	61-90 Days Past Due	91+ Days Past Due	Total Past Due	Current	Total Finance Receivables	91+ Still Accruing
Customer							
North America	$50	$ 16	$59	$ 125	$7,938	$ 8,063	$ 5
Europe	16	12	39	67	2,388	2,455	6
Asia Pacific	17	7	15	39	1,435	1,474	4
Mining	3	2	63	68	1,756	1,824	2
Latin America	40	33	214	287	1,808	2,095	—
Caterpillar Power Finance	11	9	73	93	3,018	3,111	1
Dealer							
North America	—	—	—	—	1,916	1,916	—
Europe	—	—	—	—	161	161	—
Asia Pacific	—	—	—	—	541	541	—
Mining	—	—	—	—	3	3	—
Latin America	—	—	—	—	752	752	—
Caterpillar Power Finance	—	—	—	—	2	2	—
Total	$137	$ 79	$463	$ 679	$21,718	$ 22,397	$ 18

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Impaired finance receivables

For all classes, a finance receivable is considered impaired, based on current information and events, if it is probable that Cat Financial will be unable to collect all amounts due according to the contractual terms. Impaired finance receivables include finance receivables that have been restructured and are considered to be troubled debt restructurings.

There were no impaired finance receivables as of December 31, 2017, 2016 and 2015 for the Dealer portfolio segment. Cat Financial's recorded investment in impaired finance receivables and the related unpaid principal balances and allowance for the Customer portfolio segment were as follows:

	December 31, 2017			December 31, 2016		
(Millions of dollars)	Recorded Investment	Unpaid Principal Balance	Related Allowance	Recorded Investment	Unpaid Principal Balance	Related Allowance
Impaired Finance Receivables With No Allowance Recorded						
North America	$19	$ 19	$ —	$10	$ 10	$ —
Europe	45	45	—	49	48	—
Asia Pacific	34	33	—	3	2	—
Mining	121	121	—	129	129	—
Latin America	45	45	—	68	68	—
Caterpillar Power Finance	160	172	—	271	271	—
Total	$424	$ 435	$ —	$530	$ 528	$ —
Impaired Finance Receivables With An Allowance Recorded						
North America	$44	$ 43	$ 17	$61	$ 60	$ 22
Europe	9	8	5	7	7	3
Asia Pacific	8	8	2	50	50	8
Mining	—	—	—	—	—	—
Latin America	95	106	42	93	104	34
Caterpillar Power Finance	362	365	83	45	44	18
Total	$518	$ 530	$ 149	$256	$ 265	$ 85
Total Impaired Finance Receivables						
North America	$63	$ 62	$ 17	$71	$ 70	$ 22
Europe	54	53	5	56	55	3
Asia Pacific	42	41	2	53	52	8
Mining	121	121	—	129	129	—
Latin America	140	151	42	161	172	34
Caterpillar Power Finance	522	537	83	316	315	18
Total	$942	$ 965	$ 149	$786	$ 793	$ 85

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(Millions of dollars)	Years ended December 31, 2017 Average Recorded Investment	2017 Interest Income Recognized	2016 Average Recorded Investment	2016 Interest Income Recognized	2015 Average Recorded Investment	2015 Interest Income Recognized
Impaired Finance Receivables With No Allowance Recorded						
North America	$13	$ 1	$18	$ 1	$12	$ 1
Europe	48	1	46	1	42	1
Asia Pacific	24	2	2	—	2	—
Mining	126	7	98	4	75	3
Latin America	64	3	47	1	31	—
Caterpillar Power Finance	221	9	270	11	170	5
Total	$496	$ 23	$481	$ 18	$332	$ 10
Impaired Finance Receivables With An Allowance Recorded						
North America	$49	$ 1	$34	$ —	$9	$ —
Europe	6	—	11	1	14	1
Asia Pacific	31	2	37	3	35	2
Mining	—	—	13	—	39	1
Latin America	99	4	66	2	56	3
Caterpillar Power Finance	180	6	50	1	115	3
Total	$365	$ 13	$211	$ 7	$268	$ 10
Total Impaired Finance Receivables						
North America	$62	$ 2	$52	$ 1	$21	$ 1
Europe	54	1	57	2	56	2
Asia Pacific	55	4	39	3	37	2
Mining	126	7	111	4	114	4
Latin America	163	7	113	3	87	3
Caterpillar Power Finance	401	15	320	12	285	8
Total	$861	$ 36	$692	$ 25	$600	$ 20

Recognition of income is suspended and the finance receivable is placed on non-accrual status when management determines that collection of future income is not probable (generally after 120 days past due). Recognition is resumed and previously suspended income is recognized when the finance receivable becomes current and collection of remaining amounts is considered probable. Payments received while the finance receivable is on non-accrual status are applied to interest and principal in accordance with the contractual terms.

As of December 31, 2017 and 2016 there were no finance receivable on non-accrual status for the Dealer portfolio segment.

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The recorded investment in Customer finance receivable on non-accrual status was as follows:

(Millions of dollars)	December 31, 2017	2016
North America	$38	$66
Europe	37	35
Asia Pacific	10	12
Mining	63	69
Latin America	192	307
Caterpillar Power Finance	343	90
Total	$683	$579

Troubled Debt Restructurings

A restructuring of a finance receivable constitutes a troubled debt restructuring (TDR) when the lender grants a concession it would not otherwise consider to a borrower experiencing financial difficulties. Concessions granted may include extended contract maturities, inclusion of interest only periods, below market interest rates, extended skip payment periods and reduction of principal and/or accrued interest.

As of December 31, 2017, there were no additional funds committed to lend to a borrower whose terms have been modified in a TDR. As of December 31, 2016, there were $11 million of additional funds committed to lend to a borrower whose terms have been modified in a TDR.

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There were no finance receivables modified as TDRs during the years ended December 31, 2017, 2016 or 2015 for the Dealer portfolio segment. Cat Financial's recorded investment in finance receivables in the Customer portfolio segment modified as TDRs during the years ended December 31, 2017, 2016 and 2015 were as follows:

(Millions of dollars)	Year ended December 31, 2017		
	Number of Contracts	Pre-TDR Recorded Investment	Post-TDR Recorded Investment
North America	43	$ 34	$ 35
Europe	4	1	1
Asia Pacific	10	39	31
Mining	2	57	56
Latin America	17	26	27
Caterpillar Power Finance [1]	68	422	407
Total	144	$ 579	$ 557

	Year ended December 31, 2016		
	Number of Contracts	Pre-TDR Recorded Investment	Post-TDR Recorded Investment
North America	25	$ 25	$ 25
Europe	43	12	9
Asia Pacific	31	29	28
Mining	4	74	66
Latin America [2]	437	118	82
Caterpillar Power Finance	34	196	177
Total	574	$ 454	$ 387

	Year ended December 31, 2015		
	Number of Contracts	Pre-TDR Recorded Investment	Post-TDR Recorded Investment
North America	14	$ 1	$ 1
Europe	23	2	2
Asia Pacific	21	26	26
Mining	4	65	65
Latin America	11	1	2
Caterpillar Power Finance	21	259	242
Total	94	$ 354	$ 338

[1] In Caterpillar Power Finance, 48 contracts with a pre-TDR recorded investment of $265 million and a post-TDR recorded investment of $258 million are related to six customers.

[2] In Latin America, 321 contracts with a pre-TDR recorded investment of $94 million and a post-TDR recorded investment of $64 million are related to four customers.

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TDRs in the Customer portfolio segment with a payment default (defined as 91+ days past due) during the years ended December 31, 2017, 2016 and 2015 which had been modified within twelve months prior to the default date, were as follows:

(Millions of dollars)	Year ended December 31, 2017		Year ended December 31, 2016		Year ended December 31, 2015	
	Number of Contracts	Post-TDR Recorded Investment	Number of Contracts	Post-TDR Recorded Investment	Number of Contracts	Post-TDR Recorded Investment
North America	4	$ 3	5	$ 2	7	$ 1
Europe	1	—	5	2	—	—
Asia Pacific	4	1	1	—	—	—
Latin America[1]	243	17	4	1	12	1
Total	252	$ 21	15	$ 5	19	$ 2

[1] In Latin America, 238 contracts with a Post-TDR recorded investment of $16 million are related to two customers for the year ended December 31, 2017.

7. Inventories

Inventories (principally using the LIFO method) are comprised of the following:

(Millions of dollars)	December 31, 2017	2016
Raw materials	$2,802	$2,102
Work-in-process	2,254	1,719
Finished goods	4,761	4,576
Supplies	201	217
Total inventories	$10,018	$8,614

During 2017, inventory quantities were reduced. This reduction resulted in a liquidation of LIFO inventory resulting mostly from closure of our facility in Gosselies, Belgium. The liquidated inventory was carried at lower costs prevailing in prior years as compared with current costs. In 2017, the effect of this reduction in inventory decreased Cost of goods sold by approximately $66 million and increased Profit by approximately $49 million or $0.08 per share.

We had long-term material purchase obligations of approximately $813 million at December 31, 2017.

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8. Property, plant and equipment

(Millions of dollars)	Useful Lives (Years)	December 31, 2017	2016
Land	—	$664	$667
Buildings and land improvements	20-45	7,515	7,383
Machinery, equipment and other	3-10	14,888	15,392
Software	3-7	1,745	1,641
Equipment leased to others	1-7	6,038	6,086
Construction-in-process	—	688	771
Total property, plant and equipment, at cost		31,538	31,940
Less: Accumulated depreciation		(17,383)	(16,618)
Property, plant and equipment–net		$14,155	$15,322

We had commitments for the purchase or construction of capital assets of approximately $293 million at December 31, 2017.

Assets recorded under capital leases: [1]

	December 31,	
(Millions of dollars)	2017	2016
Gross capital leases [2]	$ 96	$ 99
Less: Accumulated depreciation	(19)	(22)
Net capital leases	$ 77	$ 77

[1] Included in Property, plant and equipment table above.
[2] Consists primarily of machinery and equipment.

At December 31, 2017, scheduled minimum rental payments on assets recorded under capital leases were:

(Millions of dollars)					
2018	2019	2020	2021	2022	Thereafter
$8	$ 8	$ 9	$ 22	$ 7	$ 35

Equipment leased to others (primarily by Cat Financial):

	December 31,	
(Millions of dollars)	2017	2016
Equipment leased to others–at original cost	$6,038	$6,086
Less: Accumulated depreciation	(1,656)	(1,659)
Equipment leased to others–net	$4,382	$4,427

At December 31, 2017, scheduled minimum rental payments to be received for equipment leased to others were:

(Millions of dollars)					
2018	2019	2020	2021	2022	Thereafter
$879	$583	$315	$155	$ 78	$ 70

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9. Investments in unconsolidated affiliated companies

Investments in unconsolidated affiliated companies, included in Other assets in Statement 3, were as follows:

	December 31,	
(Millions of dollars)	2017	2016
Investments in equity method companies	$ 212	$ 192
Plus: Investments in cost method companies	31	57
Total investments in unconsolidated affiliated companies	$ 243	$ 249

In May 2017, we sold our equity interest in IronPlanet Holdings Inc. for $93 million. We recognized a pretax gain of $85 million (included in Other income (expense)) and derecognized the carrying value of our noncontrolling interest, which was included in Other assets in Statement 3. The gain on the disposal is included as a reconciling item between Segment profit and Consolidated profit before taxes.

10. Intangible assets and goodwill

A. Intangible assets

Intangible assets are comprised of the following:

	December 31, 2017			
(Millions of dollars)	Weighted Amortizable Life (Years)	Gross Carrying Amount	Accumulated Amortization	Net
Customer relationships	15	$2,441	$ (1,122)	$1,319
Intellectual property	11	1,538	(851)	687
Other	13	198	(93)	105
Total finite-lived intangible assets	14	$4,177	$ (2,066)	$2,111

	December 31, 2016			
	Weighted Amortizable Life (Years)	Gross Carrying Amount	Accumulated Amortization	Net
Customer relationships	15	$2,378	$ (934)	$1,444
Intellectual property	11	1,496	(706)	790
Other	14	192	(77)	115
Total finite-lived intangible assets	14	$4,066	$ (1,717)	$2,349

Finite-lived intangible assets are amortized over their estimated useful lives and tested for impairment if events or changes in circumstances indicate that the asset may be impaired.

In 2016, gross customer relationship intangibles of $96 million and related accumulated amortization of $27 million as well as gross intellectual property intangibles of $111 million and related accumulated amortization of $48 million from the Resource Industries segment were impaired. The fair value of these intangibles was determined to be insignificant based on an income approach using expected cash flows. The fair value determination is categorized as

Level 3 in the fair value hierarchy due to its use of internal projections and unobservable measurement inputs. The total impairment of $132 million was a result of restructuring activities and is included in Other operating (income) expense in Statement 1. See Note 25 for information on restructuring costs.

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Amortization expense related to intangible assets was $323 million, $326 million and $337 million for 2017, 2016 and 2015, respectively.

As of December 31, 2017, amortization expense related to intangible assets is expected to be:

(Millions of dollars)					
2018	2019	2020	2021	2022	Thereafter
$322	$316	$305	$287	$268	$ 613

B. Goodwill

There were no goodwill impairments during 2017 or 2015.

Our annual impairment tests completed in the fourth quarter of 2016 indicated the fair value of each reporting unit was substantially above its respective carrying value, including goodwill, with the exception of our Surface Mining & Technology reporting unit.

The Surface Mining & Technology reporting unit, which primarily serves the mining industry, is a part of our Resource Industries segment. The goodwill assigned to this reporting unit is largely from our acquisition of Bucyrus International, Inc. in 2011. Its product portfolio includes large mining trucks, electric rope shovels, draglines, hydraulic shovels and related parts. In addition to equipment, Surface Mining & Technology also develops and sells technology products and services to provide customer fleet management, equipment management analytics and autonomous machine capabilities. The annual impairment test completed in the fourth quarter of 2016 indicated that the fair value of Surface Mining & Technology was below its carrying value requiring the second step of the goodwill impairment test process. The fair value of Surface Mining & Technology was determined primarily using an income approach based on a discounted ten year cash flow. We assigned the fair value to Surface Mining & Technology’s assets and liabilities using various valuation techniques that required assumptions about royalty rates, dealer attrition, technological obsolescence and discount rates. The resulting implied fair value of goodwill was below the carrying value. Accordingly, we recognized a goodwill impairment charge of $595 million, which resulted in goodwill of $629 million remaining for Surface Mining & Technology as of October 1, 2016. The fair value determination is categorized as Level 3 in the fair value hierarchy due to its use of internal projections and unobservable measurement inputs. There was a $17 million tax benefit associated with this impairment charge.

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The changes in carrying amount of goodwill by reportable segment for the years ended December 31, 2017 and 2016 were as follows:

(Millions of dollars)	December 31, 2016	Acquisitions	Impairment Loss	Other Adjustments [1]	December 31, 2017
Construction Industries					
Goodwill	$ 296	$ —	$ —	$ 9	$ 305
Impairment	(22)	—	—	—	(22)
Net goodwill	274	—	—	9	283
Resource Industries					
Goodwill	4,110	—	—	122	4,232
Impairment	(1,175)	—	—	—	(1,175)
Net goodwill	2,935	—	—	122	3,057
Energy & Transportation					
Goodwill	2,756	—	—	50	2,806
All Other [2]					
Goodwill	55	—	—	(1)	54
Consolidated total					
Goodwill	7,217	—	—	180	7,397
Impairment	(1,197)	—	—	—	(1,197)
Net goodwill	$ 6,020	$ —	$ —	$ 180	$ 6,200

	December 31, 2015	Acquisitions	Impairment Loss	Other Adjustments [1]	December 31, 2016
Construction Industries					
Goodwill	$ 285	$ —	$ —	$ 11	$ 296
Impairment	(22)	—	—	—	(22)
Net goodwill	263	—	—	11	274
Resource Industries					
Goodwill	4,145	—	—	(35)	4,110
Impairment	(580)	—	(595)	—	(1,175)
Net goodwill	3,565	—	(595)	(35)	2,935
Energy & Transportation					
Goodwill	2,738	37	—	(19)	2,756
All Other [2]					
Goodwill	49	—	—	6	55
Consolidated total					
Goodwill	7,217	37	—	(37)	7,217
Impairment	(602)	—	(595)	—	(1,197)
Net goodwill	$ 6,615	$ 37	$ (595)	$ (37)	$ 6,020

[1] Other adjustments are comprised primarily of foreign currency translation.
[2] Includes All Other operating segments (See Note 23).

11. Investments in debt and equity securities

We have investments in certain debt and equity securities, primarily at Insurance Services, that have been classified as available-for-sale and recorded at fair value. In addition, Insurance Services has an equity security investment in a real estate investment trust (REIT) which is recorded at fair value based on the net asset value (NAV) of the investment. These investments are primarily included in Other assets in Statement 3. Unrealized gains and losses arising from the revaluation of debt and equity securities are included, net of applicable deferred income taxes, in equity (Accumulated other comprehensive income (loss) in Statement 3). Realized gains and losses on sales of investments are generally determined using the specific identification method for debt and equity securities and are included in Other income (expense) in Statement 1.

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The cost basis and fair value of debt and equity securities were as follows:

(Millions of dollars)	December 31, 2017			December 31, 2016		
	Cost Basis	Unrealized Pretax Net Gains (Losses)	Fair Value	Cost Basis	Unrealized Pretax Net Gains (Losses)	Fair Value
Government debt						
U.S. treasury bonds	$10	$ —	$10	$9	$ —	$9
Other U.S. and non-U.S. government bonds	42	—	42	60	—	60
Corporate bonds						
Corporate bonds	585	(1)	584	489	3	492
Asset-backed securities	67	—	67	90	—	90
Mortgage-backed debt securities						
U.S. governmental agency	265	(4)	261	225	(2)	223
Residential	8	—	8	10	—	10
Commercial	17	—	17	36	—	36
Equity securities						
Large capitalization value	287	(3)	284	280	32	312
Real estate investment trust (REIT)	104	6	110	77	2	79
Smaller company growth	40	16	56	41	15	56
Total	$1,425	$ 14	$1,439	$1,317	$ 50	$1,367

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Available-for-sale investments in an unrealized loss position that are not other-than-temporarily impaired:

	December 31, 2017					
	Less than 12 months [1]		12 months or more [1]		Total	
(Millions of dollars)	Fair Value	Unrealized Losses	Fair Value	Unrealized Losses	Fair Value	Unrealized Losses
Corporate bonds						
Corporate bonds	$312	$ 2	$ 38	$ —	$350	$ 2
Mortgage-backed debt securities						
U.S. governmental agency	129	1	110	3	239	4
Equity securities						
Large capitalization value	129	5	14	2	143	7
Smaller company growth	17	1	1	—	18	1
Total	$587	$ 9	$ 163	$ 5	$750	$ 14

	December 31, 2016					
	Less than 12 months [1]		12 months or more [1]		Total	
(Millions of dollars)	Fair Value	Unrealized Losses	Fair Value	Unrealized Losses	Fair Value	Unrealized Losses
Corporate bonds						
Corporate bonds	$131	$ 1	$ 13	$ —	$144	$ 1
Mortgage-backed debt securities						
U.S. governmental agency	167	2	11	—	178	2
Equity securities						
Large capitalization value	68	6	11	2	79	8
Smaller company growth	10	1	3	1	13	2
Total	$376	$ 10	$ 38	$ 3	$414	$ 13

[1] Indicates length of time that individual securities have been in a continuous unrealized loss position.

Corporate Bonds. The unrealized losses on our investments in corporate bonds relate to changes in interest rates and credit-related yield spreads since time of purchase. We do not intend to sell the investments and it is not likely that we will be required to sell the investments before recovery of their amortized cost basis. We do not consider these investments to be other-than-temporarily impaired as of December 31, 2017.

Mortgage-Backed Debt Securities. The unrealized losses on our investments in U.S. governmental agency mortgage-backed securities relate to changes in interest rates and credit-related yield spreads since time of purchase. We do not intend to sell the investments and it is not likely that we will be required to sell the investments before recovery of their amortized cost basis. We do not consider these investments to be other-than-temporarily impaired as of December 31, 2017.

Equity Securities. The unrealized losses on our investments in equity securities relate to inherent risks of individual holdings and/or their respective sectors. We do not consider these investments to be other-than-temporarily impaired as of December 31, 2017.

The cost basis and fair value of the available-for-sale debt securities at December 31, 2017, by contractual maturity, is shown below. Expected maturities will differ from contractual maturities because borrowers may have the right to prepay and creditors may have the right to call obligations.

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	December 31, 2017	
(Millions of dollars)	Cost Basis	Fair Value
Due in one year or less	$ 144	$ 144
Due after one year through five years	418	417
Due after five years through ten years	121	120
Due after ten years	21	22
U.S. governmental agency mortgage-backed securities	265	261
Residential mortgage-backed securities	8	8
Commercial mortgage-backed securities	17	17
Total debt securities – available-for-sale	$ 994	$ 989

Sales of Securities:

	Years Ended December 31,		
(Millions of dollars)	2017	2016	2015
Proceeds from the sale of available-for-sale securities	$ 930	$ 694	$ 351
Gross gains from the sale of available-for-sale securities	$ 109	$ 55	$ 64
Gross losses from the sale of available-for-sale securities	$ 5	$ 4	$ 2

12. Postemployment benefit plans

We provide defined benefit pension plans, defined contribution plans and/or other postretirement benefit plans (retirement health care and life insurance) to employees in many of our locations throughout the world. Our defined benefit pension plans provide a benefit based on years of service and/or the employee's average earnings near retirement. Our defined contribution plans allow employees to contribute a portion of their salary to help save for retirement, and in most cases, we provide a matching contribution. The benefit obligation related to our non-U.S. defined benefit pension plans are for employees located primarily in Europe, Japan and Brazil. For other postretirement benefits (OPEB), substantially all of our benefit obligation is for employees located in the United States.

Our U.S. defined benefit pension plans for support and management employees were frozen for certain employees on December 31, 2010, and will freeze for remaining employees on December 31, 2019. On the respective transition dates employees move to a retirement benefit that provides a frozen pension benefit and a 401(k) plan that will include a matching contribution and a new annual employer contribution.

In the first quarter of 2017, we announced the closure of our Gosselies, Belgium facility. This announcement impacted certain employees that participated in a defined benefit pension plan and resulted in a net loss of $20 million for curtailment and termination benefits. In addition during first quarter of 2017, we announced the decision to phase out production at our Aurora, Illinois, facility, which resulted in termination benefits of $9 million for certain hourly employees that participate in our U.S. hourly defined benefit pension plan.

During 2015 the company offered a voluntary retirement enhancement program to qualifying U.S. employees. This voluntary program impacted employees participating in certain U.S. pension and OPEB plans and resulted in a curtailment loss of $82 million.

All curtailments and termination benefits were recognized in Other operating (income) expenses in Statement 1.

Beginning in 2016, we elected to utilize a full yield curve approach in the estimation of service and interest costs by applying the specific spot rates along the yield curve used in the determination of the benefit obligation to the relevant projected cash flows. Service and interest costs in 2017 and 2016 were lower by $140 million and $180 million, respectively, under the new method than they would have been under the previous method. This change had no impact on our year-end defined benefit pension and OPEB obligations or our annual net periodic benefit cost as the lower service and interest costs were entirely

offset in the actuarial loss (gain) reported for the respective year. This change was accounted for prospectively as a change in accounting estimate.

A. Benefit obligations

	U.S. Pension Benefits		Non-U.S. Pension Benefits		Other Postretirement Benefits	
(Millions of dollars)	2017	2016	2017	2016	2017	2016
Change in benefit obligation:						
Benefit obligation, beginning of year	$16,218	$15,792	$4,472	$4,355	$4,088	$4,313
Service cost	115	119	95	92	78	82
Interest cost	525	517	101	117	130	131
Plan amendments	—	—	(1)	(5)	(79)	(188)
Actuarial losses (gains)	1,439	767	(75)	512	71	60
Foreign currency exchange rates	—	—	312	(369)	4	14
Participant contributions	—	—	6	7	59	57
Benefits paid - gross	(977)	(970)	(203)	(238)	(361)	(388)
Less: federal subsidy on benefits paid	—	—	—	—	10	11
Curtailments, settlements and termination benefits	6	(7)	(101)	1	2	(4)
Benefit obligation, end of year	$17,326	$16,218	$4,606	$4,472	$4,002	$4,088
Accumulated benefit obligation, end of year	$17,175	$16,034	$4,335	$4,163		
Weighted-average assumptions used to determine benefit obligation:						
Discount rate	3.5%	4.0%	2.4%	2.5%	3.6%	4.0%
Rate of compensation increase	4.0%	4.0%	4.0%	4.0%	4.6%	4.0%

The assumed discount rate is used to discount future benefit obligations back to today's dollars. The U.S. discount rate is based on a benefit cash flow-matching approach and represents the rate at which our benefit obligations could effectively be settled as of our measurement date, December 31. The benefit cash flow-matching approach involves analyzing Caterpillar's projected cash flows against a high quality bond yield curve, calculated using a wide population of corporate Aa bonds available on the measurement date. The very highest and lowest yielding bonds (top and bottom 10 percent) are excluded from the analysis. A similar process is used to determine the assumed discount rate for our most significant non-U.S. plans. This rate is sensitive to changes in interest rates. A decrease in the discount rate would increase our obligation and future expense.

B. Plan assets

	U.S. Pension Benefits		Non-U.S. Pension Benefits		Other Postretirement Benefits	
(Millions of dollars)	2017	2016	2017	2016	2017	2016
Change in plan assets:						
Fair value of plan assets, beginning of year	$11,354	$11,440	$3,887	$3,890	$ 550	$ 650
Actual return on plan assets	1,692	860	350	503	101	55
Foreign currency exchange rates	—	—	278	(392)	—	—
Company contributions	1,350	36	107	117	155	176
Participant contributions	—	—	6	7	59	57
Benefits paid	(977)	(970)	(203)	(238)	(361)	(388)
Settlements and termination benefits	(3)	(12)	(120)	—	—	—

Fair value of plan assets, end of year	$13,416	$11,354	$4,305	$3,887	$ 504	$ 550

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In general, our strategy for both the U.S. and non-U.S. pensions includes ongoing alignment of our investments to our liabilities, while reducing risk in our portfolio. The current U.S. pension target asset allocation is 30 percent equities and 70 percent fixed income. This target allocation will be revisited periodically to ensure it reflects our overall objectives. The non-U.S. pension weighted-average target allocations are 38 percent equities, 54 percent fixed income, 5 percent real estate and 3 percent other. The target allocations for each plan vary based upon local statutory requirements, demographics of plan participants and funded status. The non-U.S. plan assets are primarily invested in non-U.S. securities.

Our target allocation for the other postretirement benefit plans is 70 percent equities and 30 percent fixed income.

The U.S. plans are rebalanced to plus or minus 5 percentage points of the target asset allocation ranges on a monthly basis. The frequency of rebalancing for the non-U.S. plans varies depending on the plan. As a result of our diversification strategies, there are no significant concentrations of risk within the portfolio of investments.

The use of certain derivative instruments is permitted where appropriate and necessary for achieving overall investment policy objectives. The plans do not engage in derivative contracts for speculative purposes.

The accounting guidance on fair value measurements specifies a fair value hierarchy based upon the observability of inputs used in valuation techniques (Level 1, 2 and 3). See Note 18 for a discussion of the fair value hierarchy.

Fair values are determined as follows:

- Equity securities are primarily based on valuations for identical instruments in active markets.
- Fixed income securities are primarily based upon models that take into consideration such market-based factors as recent sales, risk-free yield curves and prices of similarly rated bonds.
- Real estate is stated at the fund's net asset value or at appraised value.
- Cash, short-term instruments and other are based on the carrying amount, which approximates fair value, or the fund's net asset value.

The fair value of the pension and other postretirement benefit plan assets by category is summarized below:

	December 31, 2017				
(Millions of dollars)	Level 1	Level 2	Level 3	Measured at NAV	Total Assets at Fair Value
U.S. Pension					
Equity securities:					
U.S. equities	$2,745	$—	$ 20	$ 165	$ 2,930
Non-U.S. equities	1,573	15	—	—	1,588
Fixed income securities:					
U.S. corporate bonds	—	5,886	60	49	5,995
Non-U.S. corporate bonds	—	1,165	—	—	1,165
U.S. government bonds	—	793	—	—	793
U.S. governmental agency mortgage-backed securities	—	369	—	—	369
Non-U.S. government bonds	—	68	—	—	68
Real estate	—	—	10	—	10
Cash, short-term instruments and other	173	101	—	224	498

Total U.S. pension assets	$4,491	$8,397	$ 90	$ 438	$ 13,416

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(Millions of dollars)	December 31, 2016 Level 1	Level 2	Level 3	Measured at NAV	Total Assets at Fair Value
U.S. Pension					
Equity securities:					
U.S. equities	$2,816	$—	$ 5	$ 174	$ 2,995
Non-U.S. equities	1,653	5	—	—	1,658
Fixed income securities:					
U.S. corporate bonds	—	4,273	31	85	4,389
Non-U.S. corporate bonds	—	710	—	—	710
U.S. government bonds	—	647	—	—	647
U.S. governmental agency mortgage-backed securities	—	491	—	—	491
Non-U.S. government bonds	—	90	—	—	90
Real estate	—	—	10	—	10
Cash, short-term instruments and other	93	74	11	186	364
Total U.S. pension assets	$4,562	$6,290	$ 57	$ 445	$ 11,354

(Millions of dollars)	December 31, 2017 Level 1	Level 2	Level 3	Measured at NAV	Total Assets at Fair Value
Non-U.S. Pension					
Equity securities:					
U.S. equities	$55	$—	$ —	$ 137	$ 192
Non-U.S. equities	400	34	—	929	1,363
Global equities [1]	116	33	—	—	149
Fixed income securities:					
U.S. corporate bonds	—	156	—	—	156
Non-U.S. corporate bonds	—	363	5	6	374
U.S. government bonds	—	64	—	—	64
Non-U.S. government bonds	—	1,229	—	—	1,229
Global fixed income [1]	—	250	—	218	468
Real estate	—	186	—	—	186
Cash, short-term instruments and other [2]	64	60	—	—	124
Total non-U.S. pension assets	$635	$2,375	$ 5	$ 1,290	$ 4,305

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	December 31, 2016				
(Millions of dollars)	Level 1	Level 2	Level 3	Measured at NAV	Total Assets at Fair Value
Non-U.S. Pension					
Equity securities:					
U.S. equities	$405	$—	$ —	$ 108	$ 513
Non-U.S. equities	639	38	—	119	796
Global equities [1]	122	34	—	—	156
Fixed income securities:					
U.S. corporate bonds	—	151	1	—	152
Non-U.S. corporate bonds	—	345	1	10	356
U.S. government bonds	—	44	—	—	44
Non-U.S. government bonds	—	1,172	—	—	1,172
Global fixed income [1]	—	221	—	199	420
Real estate	—	179	—	—	179
Cash, short-term instruments and other [2]	53	46	—	—	99
Total non-U.S. pension assets	$1,219	$2,230	$ 2	$ 436	$ 3,887

[1] Includes funds that invest in both U.S. and non-U.S. securities.

[2] Includes funds that invest in multiple asset classes, hedge funds and other.

	December 31, 2017				
(Millions of dollars)	Level 1	Level 2	Level 3	Measured at NAV	Total Assets at Fair Value
Other Postretirement Benefits					
Equity securities:					
U.S. equities	$255	$ 1	$ —	$ —	$ 256
Non-U.S. equities	103	—	—	—	103
Fixed income securities:					
U.S. corporate bonds	—	60	—	1	61
Non-U.S. corporate bonds	—	15	—	—	15
U.S. government bonds	—	17	—	—	17
U.S. governmental agency mortgage-backed securities	—	34	—	—	34
Non-U.S. government bonds	—	4	—	—	4
Cash, short-term instruments and other	—	3	—	11	14
Total other postretirement benefit assets	$358	$ 134	$ —	$ 12	$ 504

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	December 31, 2016				
(Millions of dollars)	Level 1	Level 2	Level 3	Measured at NAV	Total Assets at Fair Value
Other Postretirement Benefits					
Equity securities:					
U.S. equities	$276	$ 1	$ —	$ —	$ 277
Non-U.S. equities	110	—	—	—	110
Fixed income securities:					
U.S. corporate bonds	—	69	—	1	70
Non-U.S. corporate bonds	—	17	—	—	17
U.S. government bonds	—	16	—	—	16
U.S. governmental agency mortgage-backed securities	—	31	—	—	31
Non-U.S. government bonds	—	4	—	—	4
Cash, short-term instruments and other	5	1	—	19	25
Total other postretirement benefit assets	$391	$ 139	$ —	$ 20	$ 550

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Below are roll-forwards of assets measured at fair value using Level 3 inputs for the years ended December 31, 2017 and 2016. These instruments were valued using pricing models that, in management's judgment, reflect the assumptions a market participant would use.

(Millions of dollars)	Equities	Fixed Income	Real Estate	Other
U.S. Pension				
Balance at December 31, 2015	$ 5	$ 42	$ 9	$ 3
Unrealized gains (losses)	—	4	1	—
Realized gains (losses)	—	(5)	—	—
Purchases, issuances and settlements, net	1	(9)	—	8
Transfers in and/or out of Level 3	(1)	(1)	—	—
Balance at December 31, 2016	$ 5	$ 31	$ 10	$ 11
Unrealized gains (losses)	15	13	—	—
Realized gains (losses)	(1)	—	—	—
Purchases, issuances and settlements, net	—	16	—	(11)
Transfers in and/or out of Level 3	1	—	—	—
Balance at December 31, 2017	$ 20	$ 60	$ 10	$ —
Non-U.S. Pension				
Balance at December 31, 2015	$ 2	$ 5	$ —	$ —
Unrealized gains (losses)	—	—	—	—
Realized gains (losses)	(1)	—	—	—
Purchases, issuances and settlements, net	(1)	(1)	—	—
Transfers in and/or out of Level 3	—	(2)	—	—
Balance at December 31, 2016	$ —	$ 2	$ —	$ —
Unrealized gains (losses)	—	—	—	—
Realized gains (losses)	—	—	—	—
Purchases, issuances and settlements, net	—	2	—	—
Transfers in and/or out of Level 3	—	1	—	—
Balance at December 31, 2017	$ —	$ 5	$ —	$ —

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C. Funded status

The funded status of the plans, reconciled to the amount reported on Statement 3, is as follows:

	U.S. Pension Benefits		Non-U.S. Pension Benefits		Other Postretirement Benefits	
(Millions of dollars)	2017	2016	2017	2016	2017	2016
End of Year						
Fair value of plan assets	$13,416	$11,354	$4,305	$3,887	$504	$550
Benefit obligations	17,326	16,218	4,606	4,472	4,002	4,088
Over (under) funded status recognized in financial position	$(3,910)	$(4,864)	$(301)	$(585)	$(3,498)	$(3,538)
Components of net amount recognized in financial position:						
Other assets (non-current asset)	$19	$4	$358	$152	$—	$—
Accrued wages, salaries and employee benefits (current liability)	(38)	(35)	(20)	(20)	(163)	(162)
Liability for postemployment benefits (non-current liability)	(3,891)	(4,833)	(639)	(717)	(3,335)	(3,376)
Net liability recognized	$(3,910)	$(4,864)	$(301)	$(585)	$(3,498)	$(3,538)
Amounts recognized in Accumulated other comprehensive income (pre-tax) consist of:						
Prior service cost (credit)	$—	$—	$—	$(5)	$(138)	$(85)

The estimated amount of prior service cost (credit) that will be amortized from Accumulated other comprehensive income (loss) at December 31, 2017 into net periodic benefit cost (pre-tax) in 2018 are as follows:

(Millions of dollars)	U.S. Pension Benefits	Non-U.S. Pension Benefits	Other Postretirement Benefits
Prior service cost (credit)	$—	$—	$(35)

The following amounts relate to our pension plans with projected benefit obligations in excess of plan assets:

	U.S. Pension Benefits at Year-end		Non-U.S. Pension Benefits at Year-end	
(Millions of dollars)	2017	2016	2017	2016
Projected benefit obligation	$ 16,904	$ 16,163	$ 1,853	$ 4,098
Accumulated benefit obligation	$ 16,761	$ 15,979	$ 1,708	$ 3,835
Fair value of plan assets	$ 12,975	$ 11,295	$ 1,194	$ 3,361

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The following amounts relate to our pension plans with accumulated benefit obligations in excess of plan assets:

	U.S. Pension Benefits at Year-end		Non-U.S. Pension Benefits at Year-end	
(Millions of dollars)	2017	2016	2017	2016
Projected benefit obligation	$ 16,904	$ 16,163	$ 1,720	$ 1,707
Accumulated benefit obligation	$ 16,761	$ 15,979	$ 1,641	$ 1,607
Fair value of plan assets	$ 12,975	$ 11,295	$ 1,107	$ 1,024

The accumulated postretirement benefit obligation exceeds plan assets for all of our other postretirement benefit plans for all years presented.

D. Expected contributions and benefit payments

Information about expected contributions and benefit payments for pension and other postretirement benefit plans is as follows:

(Millions of dollars)	U.S. Pension Benefits	Non-U.S. Pension Benefits	Other Postretirement Benefits
Employer contributions:			
2018 (expected)	$ 40	$ 150	$ 175
Expected benefit payments:			
2018	$ 1,010	$ 220	$ 300
2019	990	170	300
2020	990	180	290
2021	990	180	290
2022	1,000	190	280
2023-2027	4,960	1,040	1,380
Total	$ 9,940	$ 1,980	$ 2,840

The above table reflects the total employer contributions and benefits expected to be paid from the plan or from company assets and does not include the participants' share of the cost. The expected benefit payments for our other postretirement benefits include payments for prescription drug benefits. Medicare Part D subsidy amounts expected to be received by the company which will offset other postretirement benefit payments are as follows:

(Millions of dollars)	2018	2019	2020	2021	2022	2023-2027	Total
Other postretirement benefits	$ 15	$ 15	$ 15	$ 15	$ 15	$ 60	$135

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E. Net periodic cost

	U.S. Pension Benefits			Non-U.S. Pension Benefits			Other Postretirement Benefits		
(Millions of dollars)	2017	2016	2015	2017	2016	2015	2017	2016	2015
Components of net periodic benefit cost:									
Service cost	$115	$119	$181	$95	$92	$110	$78	$82	$101
Interest cost	525	517	608	101	117	146	130	131	181
Expected return on plan assets [1]	(734)	(757)	(890)	(231)	(227)	(273)	(37)	(44)	(56)
Curtailments and termination benefits [2]	9	6	32	15	1	(1)	—	(9)	27
Amortization of prior service cost (credit) [3]	—	—	1	(2)	3	—	(23)	(59)	(54)
Actuarial loss (gain) [4]	481	664	732	(195)	262	8	15	59	(561)
Total cost (benefit) included in operating profit	$396	$549	$664	$(217)	$248	$(10)	$163	$160	$(362)
Other changes in plan assets and benefit obligations recognized in other comprehensive income (pre-tax):									
Current year prior service cost (credit)	$—	$—	$—	$3	$(3)	$(8)	$(77)	$(184)	$16
Amortization of prior service (cost) credit	—	—	(1)	2	(3)	—	23	59	54
Total recognized in other comprehensive income	—	—	(1)	5	(6)	(8)	(54)	(125)	70
Total recognized in net periodic cost and other comprehensive income	$396	$549	$663	$(212)	$242	$(18)	$109	$35	$(292)
Weighted-average assumptions used to determine net cost:									
Discount rate used to measure service cost	4.2%	4.5%	3.8%	2.4%	2.9%	3.3%	3.9%	4.2%	3.9%
Discount rate used to measure interest cost	3.3%	3.4%	3.8%	2.3%	2.8%	3.3%	3.3%	3.3%	3.9%
Expected rate of return on plan assets [5]	6.7%	6.9%	7.4%	5.9%	6.1%	6.8%	7.5%	7.5%	7.8%
Rate of compensation increase	4.0%	4.0%	4.0%	4.0%	3.6%	4.0%	4.0%	4.0%	4.0%

[1] Expected return on plan assets developed using the fair value of plan assets.

[2] Curtailments and termination benefits were recognized in Other operating (income) expenses in Statement 1.

[3] Prior service cost (credit) for both pension and other postretirement benefits are generally amortized using the straight-line method over the average remaining service period of active employees expected to receive benefits from the plan. For pension plans in which all or almost all of the plan's participants are inactive and other postretirement benefit plans in which all or almost all of the plan's participants are fully eligible for benefits under the plan, prior service cost (credit) are amortized using the straight-line method over the remaining life expectancy of those participants.

[4]

Actuarial loss (gain) represent the effects of actual results differing from our assumptions and the effects of changing assumptions. We recognize actuarial loss (gain) immediately through earnings upon the annual remeasurement in the fourth quarter, or on an interim basis as triggering events warrant remeasurement.

5 The weighted-average rates for 2018 are 6.3 percent and 5.2 percent for U.S. and non-U.S. pension plans, respectively.

The discount rates used in the determination of our service and interest cost components are determined by utilizing a full yield curve approach which applies specific spot rates along the yield curve used in the determination of the benefit obligation to the relevant projected cash flows. In 2015, the discount rates used to determine these cost components were based on a single weighted-average discount rate based on the yield curve used to measure the benefit obligation at the beginning of the period.

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Our U.S. expected long-term rate of return on plan assets is based on our estimate of long-term passive returns for equities and fixed income securities weighted by the allocation of our pension assets. Based on historical performance, we increase the passive returns due to our active management of the plan assets. To arrive at our expected long-term return, the amount added for active management was 0.80 percent for 2017 and 0.90 percent for 2016 and 0.95 percent for 2015. A similar process is used to determine this rate for our non-U.S. plans.

The assumed health care trend rate represents the rate at which health care costs are assumed to increase. We assumed a weighted-average increase of 6.6 percent in our calculation of 2017 benefit expense. We expect a weighted-average increase of 6.1 percent during 2018. The 2018 rates are assumed to decrease gradually to the ultimate health care trend rate of 5 percent in 2022. This rate represents 3 percent general inflation plus 2 percent additional health care inflation.

Assumed health care cost trend rates have a significant effect on the amounts reported for the health care plans. A one-percentage-point change in assumed health care cost trend rates would have the following effects:

(Millions of dollars)	One-percentage-point increase	One-percentage-point decrease
Effect on 2017 service and interest cost components of other postretirement benefit cost	$ 14	$ (12)
Effect on accumulated postretirement benefit obligation	$ 161	$ (136)

F. Other postemployment benefit plans

We offer long-term disability benefits, continued health care for disabled employees, survivor income benefit insurance and supplemental unemployment benefits to substantially all U.S. employees.

G. Defined contribution plans

We have both U.S. and non-U.S. employee defined contribution plans to help employees save for retirement. Our primary U.S. 401(k) plan allows eligible employees to contribute a portion of their cash compensation to the plan on a tax-deferred basis. Employees with frozen defined benefit pension accruals are eligible for matching contributions equal to 100 percent of employee contributions to the plan up to 6 percent of cash compensation and an annual employer contribution that ranges from 3 to 5 percent of cash compensation (depending on years of service and age). Employees that are still accruing benefits under a defined benefit pension plan are eligible for matching contributions equal to 50 percent of employee contributions up to 6 percent of cash compensation. These 401(k) plans include various investment funds, including a non-leveraged employee stock ownership plan (ESOP). As of December 31, 2017 and December 31, 2016, the ESOP held 17.7 million and 21.3 million shares, respectively. All of the shares held by the ESOP were allocated to participant accounts. Dividends paid to participants are automatically reinvested into company shares unless the participant elects to have all or a portion of the dividend paid to the participant. Various other U.S. and non-U.S. defined contribution plans allow eligible employees to contribute a portion of their salary to the plans, and in most cases, we provide a matching contribution to the funds.

Total company costs related to U.S. and non-U.S. defined contribution plans were as follows:

(Millions of dollars)	2017	2016	2015
U.S. plans	$375	$301	$267
Non-U.S. plans	73	68	76
	$448	$369	$343

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H. Summary of long-term liability:

	December 31,	
(Millions of dollars)	2017	2016
Pensions:		
U.S. pensions	$3,891	$4,833
Non-U.S. pensions	639	717
Total pensions	4,530	5,550
Postretirement benefits other than pensions	3,335	3,376
Other postemployment benefits	109	106
Defined contribution	391	325
	$8,365	$9,357

13. Short-term borrowings

	December 31,	
(Millions of dollars)	2017	2016
Machinery, Energy & Transportation:		
Notes payable to banks	$1	$59
Commercial paper	—	150
	1	209
Financial Products:		
Notes payable to banks	675	553
Commercial paper	3,680	5,985
Demand notes	481	556
	4,836	7,094
Total short-term borrowings	$4,837	$7,303

The weighted-average interest rates on short-term borrowings outstanding were:

	December 31,	
	2017	2016
Notes payable to banks	5.2 %	7.0 %
Commercial paper	1.1 %	0.9 %
Demand notes	1.1 %	0.9 %

Please refer to Note 18 and Table III for fair value information on short-term borrowings.

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14. Long-term debt

(Millions of dollars)	Effective Yield to Maturity [1]	December 31, 2017	2016
Machinery, Energy & Transportation:			
Notes—$1,250 million of 3.900% due 2021[2]	4.01%	$1,246	$1,245
Notes—$759 million of 5.200% due 2041[2]	5.27%	752	752
Debentures—$900 million of 7.900% due 2018[2][4]	7.98%	—	899
Debentures—$120 million of 9.375% due 2021	9.41%	120	120
Debentures—$500 million of 2.600% due 2022[2]	2.70%	498	498
Debentures—$82 million of 8.000% due 2023	8.06%	82	82
Debentures—$1,000 million of 3.400% due 2024	3.46%	997	996
Debentures—$193 million of 6.625% due 2028[2]	6.68%	192	192
Debentures—$242 million of 7.300% due 2031[2]	7.38%	241	241
Debentures—$307 million of 5.300% due 2035[2]	8.64%	216	214
Debentures—$460 million of 6.050% due 2036[2]	6.12%	456	456
Debentures—$65 million of 8.250% due 2038[2]	8.38%	64	64
Debentures—$160 million of 6.950% due 2042[2]	7.02%	159	159
Debentures—$1,722 million of 3.803% due 2042[2]	6.39%	1,236	1,218
Debentures—$500 million of 4.300% due 2044	4.39%	493	493
Debentures—$500 million of 4.750% due 2064	4.81%	494	494
Debentures—$246 million of 7.375% due 2097[2]	7.51%	242	242
Capital lease obligations[3]		437	68
Other		4	3
Total Machinery, Energy & Transportation		7,929	8,436
Financial Products:			
Medium-term notes		15,415	13,869
Other		503	513
Total Financial Products		15,918	14,382
Total long-term debt due after one year		$23,847	$22,818

[1] Effective yield to maturity includes the impact of discounts, premiums and debt issuance costs.

[2] Redeemable at our option in whole or in part at any time at a redemption price equal to the greater of (i) 100% of the principal amount or (ii) the discounted present value of the notes or debentures, calculated in accordance with the terms of such notes or debentures.

[3] Includes $360 million related to a financing transaction in Japan entered into in 2017.

[4] On October 10, 2017, we called for redemption of all $900 million in aggregate principal amount of our outstanding 7.90% senior notes due in December 2018, payable in cash. The redemption date occurred on November 10, 2017 and included a prepayment fee of $58 million.

All outstanding notes and debentures are unsecured and rank equally with one another.

Cat Financial's medium-term notes are offered by prospectus and are issued through agents at fixed and floating rates. Medium-term notes due after one year have a weighted average interest rate of 1.8% with remaining maturities up to 9 years at December 31, 2017. During September 2016, $381 million of medium-term notes with varying interest rates and maturity dates were exchanged for $366 million of 1.93% medium-term notes due in 2021 and $15 million in cash. In addition, a debt exchange premium of $33 million was paid.

The above table includes $148 million of medium-term notes that can be called at par.

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The aggregate amounts of maturities of long-term debt during each of the years 2018 through 2022, including amounts due within one year and classified as current, are:

	December 31,				
(Millions of dollars)	2018	2019	2020	2021	2022
Machinery, Energy & Transportation	$6	$40	$6	$1,388	$504
Financial Products	6,188	5,681	4,290	1,740	2,048
	$6,194	$5,721	$4,296	$3,128	$2,552

Interest paid on short-term and long-term borrowings for 2017, 2016 and 2015 was $1,131 million, $1,075 million and $1,047 million, respectively. Interest paid in 2017 includes a prepayment fee of $58 million related to the early retirement of our 7.90% senior notes due December 2018.

Please refer to Note 18 and Table III for fair value information on long-term debt.

15. Credit commitments

	December 31, 2017		
(Millions of dollars)	Consolidated	Machinery, Energy & Transportation	Financial Products
Credit lines available:			
Global credit facilities	$10,500	$ 2,750	$ 7,750
Other external	4,591	1	4,590
Total credit lines available	15,091	2,751	12,340
Less: Commercial paper outstanding	(3,680)	—	(3,680)
Less: Utilized credit	(1,479)	(1)	(1,478)
Available credit	$9,932	$ 2,750	$ 7,182

We have three global credit facilities with a syndicate of banks totaling $10.50 billion (Credit Facility) available in the aggregate to both Caterpillar and Cat Financial for general liquidity purposes. Based on management's allocation decision, which can be revised from time to time, the portion of the Credit Facility available to ME&T as of December 31, 2017 was $2.75 billion. Our three Credit Facilities are:

- The 364-day facility of $3.15 billion (of which $0.82 billion is available to ME&T) expires in September 2018.
- The three-year facility, as amended and restated in September 2017, of $2.73 billion (of which $0.72 billion is available to ME&T) expires in September 2020.
- The five-year facility, as amended and restated in September 2017, of $4.62 billion (of which $1.21 billion is available to ME&T) expires in September 2022.

Other consolidated credit lines with banks as of December 31, 2017 totaled $4.59 billion. These committed and uncommitted credit lines, which may be eligible for renewal at various future dates or have no specified expiration date, are used primarily by our subsidiaries for local funding requirements. Caterpillar or Cat Financial may guarantee subsidiary borrowings under these lines.

At December 31, 2017, Caterpillar's consolidated net worth was $13.72 billion, which was above the $9.00 billion required under the Credit Facility. The consolidated net worth is defined as the consolidated shareholder's equity

including preferred stock but excluding the pension and other postretirement benefits balance within Accumulated other comprehensive income (loss).

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At December 31, 2017, Cat Financial's covenant interest coverage ratio was 1.88 to 1. This is above the 1.15 to 1 minimum ratio, calculated as (1) profit excluding income taxes, interest expense and net gain/(loss) from interest rate derivatives to (2) interest expense calculated at the end of each calendar quarter for the rolling four quarter period then most recently ended, required by the Credit Facility.

In addition, at December 31, 2017, Cat Financial's six-month covenant leverage ratio was 7.38 to 1 and year-end covenant leverage ratio was 7.71 to 1. This is below the maximum ratio of debt to net worth of 10 to 1, calculated (1) on a monthly basis as the average of the leverage ratios determined on the last day of each of the six preceding calendar months and (2) at each December 31, required by the Credit Facility.

In the event Caterpillar or Cat Financial does not meet one or more of their respective financial covenants under the Credit Facility in the future (and are unable to obtain a consent or waiver), the syndicate of banks may terminate the commitments allocated to the party that does not meet its covenants. Additionally, in such event, certain of Cat Financial's other lenders under other loan agreements where similar financial covenants or cross default provisions are applicable, may, at their election, choose to pursue remedies under those loan agreements, including accelerating the repayment of outstanding borrowings. At December 31, 2017, there were no borrowings under the Credit Facility.

16. Profit per share

Computations of profit per share:			
(Dollars in millions except per share data)	2017	2016	2015
Profit (loss) for the period (A) [1]	$754	$(67)	$2,512
Determination of shares (in millions):			
Weighted average number of common shares outstanding (B)	591.8	584.3	594.3
Shares issuable on exercise of stock awards, net of shares assumed to be purchased out of proceeds at average market price	7.5	—	7.0
Average common shares outstanding for fully diluted computation (C) [2,3]	599.3	584.3	601.3
Profit (loss) per share of common stock:			
Assuming no dilution (A/B)	$1.27	$(0.11)	$4.23
Assuming full dilution (A/C) [2,3]	$1.26	$(0.11)	$4.18
Shares outstanding as of December 31 (in millions)	597.6	586.5	582.3

[1] Profit (loss) attributable to common shareholders.

[2] Diluted by assumed exercise of stock-based compensation awards using the treasury stock method.

[3] In 2016, the assumed exercise of stock-based compensation awards was not considered because the impact would be antidilutive.

For the year ended December 31, 2017, no outstanding SARs and stock options were excluded from the computation of diluted earnings per share because all outstanding SARs and stock options had a dilutive effect. SARs and stock options to purchase 32,064,790 and 22,169,133 common shares were outstanding in 2016 and 2015, respectively, which were not included in the computation of diluted earnings per share because the effect would have been antidilutive.

In January 2014, the Board of Directors approved an authorization to repurchase up to $10.0 billion of Caterpillar common stock, which will expire on December 31, 2018.

In July 2015, we entered into a definitive agreement with Citibank, N.A. to purchase shares of our common stock under an accelerated stock repurchase transaction (July 2015 ASR Agreement), which was completed in September 2015. Pursuant to the terms of the July 2015 ASR Agreement, a total of approximately 19.6 million shares of our

common stock were repurchased at an aggregate cost to Caterpillar of $1.5 billion. For the year ended December 31, 2015, a total of 25.8 million shares of our common stock were repurchased at an aggregate cost to Caterpillar of $2.0 billion.

We did not purchase any Caterpillar common stock during 2017 or 2016. Through the end of 2017, approximately $4.5 billion of the $10.0 billion authorization was spent.

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17. Accumulated other comprehensive income (loss)

Comprehensive income and its components are presented in Statement 2. Changes in Accumulated other comprehensive income (loss), net of tax, included in Statement 4, consisted of the following:

(Millions of dollars)	Foreign currency translation	Pension and other postretirement benefits	Derivative financial instruments	Available-for-sale securities	Total
Balance at December 31, 2014	$ (992)	$ (31)	$ (119)	$ 83	$ (1,059)
Other comprehensive income (loss) before reclassifications	(961)	(3)	(19)	(10)	(993)
Amounts reclassified from accumulated other comprehensive (income) loss	—	(35)	88	(36)	17
Other comprehensive income (loss)	(961)	(38)	69	(46)	(976)
Balance at December 31, 2015	$ (1,953)	$ (69)	$ (50)	$ 37	$ (2,035)
Other comprehensive income (loss) before reclassifications	(34)	118	(62)	26	48
Amounts reclassified from accumulated other comprehensive (income) loss	17	(35)	(3)	(31)	(52)
Other comprehensive income (loss)	(17)	83	(65)	(5)	(4)
Balance at December 31, 2016	$ (1,970)	$ 14	$ (115)	$ 32	$ (2,039)
Other comprehensive income (loss) before reclassifications	752	48	(3)	41	838
Amounts reclassified from accumulated other comprehensive (income) loss	13	(16)	77	(65)	9
Other comprehensive income (loss)	765	32	74	(24)	847
Balance at December 31, 2017	$ (1,205)	$ 46	$ (41)	$ 8	$ (1,192)

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The effect of the reclassifications out of Accumulated other comprehensive income (loss) on Statement 1 is as follows:

(Millions of dollars)	Classification of income (expense)	Year ended December 31, 2017	2016	2015
Foreign currency translation:				
Gain (loss) on foreign currency translation	Other income (expense)	$(13)	$(17)	$—
Tax (provision) benefit		—	—	—
Reclassifications net of tax		$(13)	$(17)	$—
Pension and other postretirement benefits:				
Amortization of prior service credit (cost)	Note 12 [1]	$25	$56	$53
Tax (provision) benefit		(9)	(21)	(18)
Reclassifications net of tax		$16	$35	$35
Derivative financial instruments:				
Foreign exchange contracts	Other income (expense)	$(121)	$14	$(127)
Foreign exchange contracts	Interest expense of Financial Products	6	—	—
Interest rate contracts	Interest expense excluding Financial Products	(9)	(6)	(6)
Interest rate contracts	Interest expense of Financial Products	3	(3)	(6)
Reclassifications before tax		(121)	5	(139)
Tax (provision) benefit		44	(2)	51
Reclassifications net of tax		$(77)	$3	$(88)
Available-for-sale securities:				
Realized gain (loss) on sale of securities	Other income (expense)	$100	$46	$56
Tax (provision) benefit		(35)	(15)	(20)
Reclassifications net of tax		$65	$31	$36
Total reclassifications from Accumulated other comprehensive income (loss)		$(9)	$52	$(17)

[1] Amounts are included in the calculation of net periodic benefit cost. See Note 12 for additional information.

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18. Fair value disclosures

A. Fair value measurements

The guidance on fair value measurements defines fair value as the exchange price that would be received for an asset or paid to transfer a liability (an exit price) in the principal or most advantageous market for the asset or liability in an orderly transaction between market participants. This guidance also specifies a fair value hierarchy based upon the observability of inputs used in valuation techniques. Observable inputs (highest level) reflect market data obtained from independent sources, while unobservable inputs (lowest level) reflect internally developed market assumptions. In accordance with this guidance, fair value measurements are classified under the following hierarchy:

- Level 1 – Quoted prices for identical instruments in active markets.

- Level 2 – Quoted prices for similar instruments in active markets; quoted prices for identical or similar instruments in markets that are not active; and model-derived valuations in which all significant inputs or significant value-drivers are observable in active markets.

- Level 3 – Model-derived valuations in which one or more significant inputs or significant value-drivers are unobservable.

When available, we use quoted market prices to determine fair value, and we classify such measurements within Level 1. In some cases where market prices are not available, we make use of observable market based inputs to calculate fair value, in which case the measurements are classified within Level 2. If quoted or observable market prices are not available, fair value is based upon valuations in which one or more significant inputs are unobservable, including internally developed models that use, where possible, current market-based parameters such as interest rates, yield curves and currency rates. These measurements are classified within Level 3.

Fair value measurements are classified according to the lowest level input or value-driver that is significant to the valuation. A measurement may therefore be classified within Level 3 even though there may be significant inputs that are readily observable.

Fair value measurement includes the consideration of nonperformance risk. Nonperformance risk refers to the risk that an obligation (either by a counterparty or Caterpillar) will not be fulfilled. For financial assets traded in an active market (Level 1 and certain Level 2), the nonperformance risk is included in the market price. For certain other financial assets and liabilities (certain Level 2 and Level 3), our fair value calculations have been adjusted accordingly.

Investments in debt and equity securities
Investments in certain debt and equity securities, primarily at Insurance Services, have been classified as available-for-sale and recorded at fair value. Fair values for our U.S. treasury bonds and large capitalization value and smaller company growth equity securities are based upon valuations for identical instruments in active markets. Fair values for other government bonds, corporate bonds and mortgage-backed debt securities are based upon models that take into consideration such market-based factors as recent sales, risk-free yield curves and prices of similarly rated bonds.

In addition, Insurance Services has an equity investment in a real estate investment trust (REIT) which is recorded at fair value based on the net asset value (NAV) of the investment.

See Note 11 for additional information on our investments in debt and equity securities.

Derivative financial instruments

The fair value of interest rate contracts is primarily based on models that utilize the appropriate market-based forward swap curves and zero-coupon interest rates to determine discounted cash flows. The fair value of foreign currency and commodity forward, option and cross currency contracts is based on a valuation model that discounts cash flows resulting from the differential between the contract price and the market-based forward rate.

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Assets and liabilities measured on a recurring basis at fair value, primarily related to Financial Products, included in Statement 3 as of December 31, 2017 and 2016 are summarized below:

	December 31, 2017			
(Millions of dollars)	Level 1	Level 2	Level 3	Total Assets / Liabilities, at Fair Value
Assets				
Available-for-sale securities				
Government debt				
U.S. treasury bonds	$10	$ —	$ —	$ 10
Other U.S. and non-U.S. government bonds	—	42	—	42
Corporate bonds				
Corporate bonds	—	584	—	584
Asset-backed securities	—	67	—	67
Mortgage-backed debt securities				
U.S. governmental agency	—	261	—	261
Residential	—	8	—	8
Commercial	—	17	—	17
Equity securities				
Large capitalization value	284	—	—	284
Smaller company growth	56	—	—	56
Total available-for-sale securities	350	979	—	1,329
REIT	—	—	110	110
Total Assets	$350	$ 979	$ 110	$ 1,439
Liabilities				
Derivative financial instruments, net	$—	$ 19	$ —	$ 19
Total Liabilities	$—	$ 19	$ —	$ 19

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	December 31, 2016			
(Millions of dollars)	Level 1	Level 2	Level 3	Total Assets / Liabilities, at Fair Value
Assets				
Available-for-sale securities				
Government debt				
U.S. treasury bonds	$9	$ —	$ —	$ 9
Other U.S. and non-U.S. government bonds	—	60	—	60
Corporate bonds				
Corporate bonds	—	492	—	492
Asset-backed securities	—	90	—	90
Mortgage-backed debt securities				
U.S. governmental agency	—	223	—	223
Residential	—	10	—	10
Commercial	—	36	—	36
Equity securities				
Large capitalization value	312	—	—	312
Smaller company growth	56	—	—	56
Total available-for-sale securities	377	911	—	1,288
REIT	—	—	79	79
Total Assets	$377	$ 911	$ 79	$ 1,367
Liabilities				
Derivative financial instruments, net	$—	$ 72	$ —	$ 72
Total Liabilities	$—	$ 72	$ —	$ 72

The fair value of our REIT investment is measured based on NAV, which is considered a Level 3 input. A roll-forward of our REIT investment for the year ended December 31, 2017 is as follows:

(Millions of dollars)	
Balance at December 31, 2016	$79
Purchases of securities	27
Sale of securities	—
Gains (losses) included in Accumulated other comprehensive income (loss)	4
Balance at December 31, 2017	$110

In addition to the amounts above, Cat Financial impaired loans are subject to measurement at fair value on a nonrecurring basis and are classified as Level 3 measurements. A loan is considered impaired when management determines that collection of contractual amounts due is not probable. In these cases, an allowance for credit losses may be established based either on the present value of expected future cash flows discounted at the receivables' effective interest rate, the fair value of the collateral for collateral-dependent receivables, or the observable market price of the receivable. In determining collateral value, Cat Financial estimates the current fair market value of the

collateral less selling costs. Cat Financial had impaired loans with a fair value of $341 million and $137 million for the years ended December 31, 2017 and 2016, respectively.

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B. Fair values of financial instruments

In addition to the methods and assumptions we use to record the fair value of financial instruments as discussed in the Fair value measurements section above, we used the following methods and assumptions to estimate the fair value of our financial instruments:

Cash and short-term investments
Carrying amount approximated fair value.

Restricted cash and short-term investments
Carrying amount approximated fair value. Restricted cash and short-term investments are included in Prepaid expenses and other current assets in Statement 3.

Finance receivables
Fair value was estimated by discounting the future cash flows using current rates, representative of receivables with similar remaining maturities.

Wholesale inventory receivables
Fair value was estimated by discounting the future cash flows using current rates, representative of receivables with similar remaining maturities.

Short-term borrowings
Carrying amount approximated fair value.

Long-term debt
Fair value for fixed and floating rate debt was estimated based on quoted market prices.

Guarantees
The fair value of guarantees is based upon our estimate of the premium a market participant would require to issue the same guarantee in a stand-alone arms-length transaction with an unrelated party. If quoted or observable market prices are not available, fair value is based upon internally developed models that utilize current market-based assumptions.

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Please refer to the table below for the fair values of our financial instruments.

TABLE III—Fair Values of Financial Instruments

(Millions of dollars)	2017 Carrying Amount	2017 Fair Value	2016 Carrying Amount	2016 Fair Value	Fair Value Levels	Reference
Assets at December 31,						
Cash and short-term investments	$8,261	$8,261	$7,168	$7,168	1	Statement 3
Restricted cash and short-term investments	194	194	31	31	1	Statement 3
Investments in debt and equity securities	1,439	1,439	1,367	1,367	1, 2 & 3	Notes 11 & 19
Finance receivables–net (excluding finance leases[1])	15,452	15,438	16,172	16,056	3	Notes 6 & 19
Wholesale inventory receivables–net (excluding finance leases [1])	1,153	1,123	1,500	1,464	3	Notes 6 & 19
Interest rate swaps–net	1	1	3	3	2	Notes 3 & 19
Commodity contracts–net	21	21	10	10	2	Notes 3 & 19
Liabilities at December 31,						
Short-term borrowings	4,837	4,837	7,303	7,303	1	Note 13
Long-term debt (including amounts due within one year):						
Machinery, Energy & Transportation	7,935	9,863	8,943	10,348	2	Note 14
Financial Products	22,106	22,230	20,537	20,724	2	Note 14
Foreign currency contracts–net	41	41	85	85	2	Notes 3 & 19
Guarantees	8	8	8	8	3	Note 21

[1] Total excluded items have a net carrying value at December 31, 2017 and 2016 of $7,063 million and $6,111 million, respectively.

19. Concentration of credit risk

Financial instruments with potential credit risk consist primarily of trade and finance receivables and short-term and long-term investments. Additionally, to a lesser extent, we have a potential credit risk associated with counterparties to derivative contracts.

Trade receivables are primarily short-term receivables from independently owned and operated dealers and customers which arise in the normal course of business. We perform regular credit evaluations of our dealers and customers. Collateral generally is not required, and the majority of our trade receivables are unsecured. We do, however, when deemed necessary, make use of various devices such as security agreements and letters of credit to protect our interests. No single dealer or customer represents a significant concentration of credit risk.

Finance receivables and wholesale inventory receivables primarily represent receivables under installment sales contracts, receivables arising from leasing transactions and notes receivable. We generally maintain a secured interest in the equipment financed. No single customer or dealer represents a significant concentration of credit risk.

Short-term and long-term investments are held with high quality institutions and, by policy, the amount of credit exposure to any one institution is limited. Long-term investments, primarily included in Other assets in Statement 3, are comprised primarily of available-for-sale securities at Insurance Services.

For derivative contracts, collateral is generally not required of the counterparties or of our company. The company generally enters into International Swaps and Derivatives Association (ISDA) master netting agreements within Machinery, Energy & Transportation and Financial Products that permit the net settlement of amounts owed under their respective derivative contracts. Our exposure to credit loss in the event of nonperformance by the counterparties is limited to only those gains that we have recorded, but for which we have not yet received cash payment. The master netting agreements reduce the amount of loss the company would incur should the counterparties fail to meet their obligations. At December 31, 2017 and 2016, the maximum exposure to credit loss was $74 million and $96 million, respectively, before the application of any master netting agreements.

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Please refer to Note 18 and Table III above for fair value information.

20. Operating leases

We lease certain property, computer and communications equipment, transportation equipment and other equipment through operating leases. Total rental expense for operating leases was $331 million, $375 million and $371 million for 2017, 2016 and 2015, respectively.

Minimum payments for operating leases having initial or remaining non-cancelable terms in excess of one year are:

Years ended December 31, (Millions of dollars)						
2018	2019	2020	2021	2022	Thereafter	Total
$211	$142	$104	$ 74	$ 58	$ 169	$758

21. Guarantees and product warranty

Caterpillar dealer performance guarantees
We have provided an indemnity to a third-party insurance company for potential losses related to performance bonds issued on behalf of Caterpillar dealers. The bonds have varying terms and are issued to insure governmental agencies against nonperformance by certain dealers. We also provided guarantees to third-parties related to the performance of contractual obligations by certain Caterpillar dealers. These guarantees have varying terms and cover potential financial losses incurred by the third-parties resulting from the dealers' nonperformance.

In 2016, we provided a guarantee to an end user related to the performance of contractual obligations by a Caterpillar dealer. Under the guarantee, which expires in 2025, non-performance by the Caterpillar dealer could require Caterpillar to satisfy the contractual obligations by providing goods, services or financial compensation to the end user up to an annual designated cap.

Customer loan guarantees
We provide loan guarantees to third-party lenders for financing associated with machinery purchased by customers. These guarantees have varying terms and are secured by the machinery. In addition, Cat Financial participates in standby letters of credit issued to third parties on behalf of their customers. These standby letters of credit have varying terms and beneficiaries and are secured by customer assets.

Supplier consortium performance guarantees
We have provided guarantees to a customer in Brazil and a customer in Europe related to the performance of contractual obligations by supplier consortiums to which our Caterpillar subsidiaries are members. The guarantees cover potential damages incurred by the customers resulting from the supplier consortiums' non-performance. The damages are capped except for failure of the consortiums to meet certain obligations outlined in the contract in the normal course of business. The guarantees will expire when the supplier consortiums perform all their contractual obligations, which are expected to be completed in 2022 for the customer in Europe and 2025 for the customer in Brazil.

Third party logistics business lease guarantees
We have provided guarantees to third-party lessors for certain properties leased by a third party logistics business, formerly Caterpillar Logistics Services LCC, in which we sold our equity interest in 2015. The guarantees are for the possibility that the third party logistics business would default on real estate lease payments. The guarantees were

granted at lease inception and generally will expire at the end of the lease terms.

We have dealer performance guarantees and third party performance guarantees that do not limit potential payment to end users related to indemnities and other commercial contractual obligations. In addition, we have entered into contracts involving industry standard indemnifications that do not limit potential payment. For these unlimited guarantees, we are unable to estimate a maximum potential amount of future payments that could result from claims made.

No significant loss has been experienced or is anticipated under any of these guarantees. At both December 31, 2017 and 2016, the related liability was $8 million. The maximum potential amount of future payments (undiscounted and without

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reduction for any amounts that may possibly be recovered under recourse or collateralized provisions) we could be required to make under the guarantees at December 31 are as follows:

(Millions of dollars)	2017	2016
Caterpillar dealer performance guarantees	$1,313	$1,384
Customer loan guarantees	40	51
Supplier consortium performance guarantees	565	278
Third party logistics business lease guarantees	69	87
Other guarantees	118	56
Total guarantees	$2,105	$1,856

Cat Financial provides guarantees to repurchase certain loans of Caterpillar dealers from a special-purpose corporation (SPC) that qualifies as a variable interest entity. The purpose of the SPC is to provide short-term working capital loans to Caterpillar dealers. This SPC issues commercial paper and uses the proceeds to fund its loan program. Cat Financial has a loan purchase agreement with the SPC that obligates Cat Financial to purchase certain loans that are not paid at maturity. Cat Financial receives a fee for providing this guarantee, which provides a source of liquidity for the SPC. Cat Financial is the primary beneficiary of the SPC as its guarantees result in Cat Financial having both the power to direct the activities that most significantly impact the SPC’s economic performance and the obligation to absorb losses, and therefore Cat Financial has consolidated the financial statements of the SPC. As of December 31, 2017 and 2016, the SPC’s assets of $1,107 million and $1,088 million, respectively, were primarily comprised of loans to dealers, and the SPC’s liabilities of $1,106 million and $1,087 million, respectively, were primarily comprised of commercial paper. The assets of the SPC are not available to pay Cat Financial's creditors. Cat Financial may be obligated to perform under the guarantee if the SPC experiences losses. No loss has been experienced or is anticipated under this loan purchase agreement.

Cat Financial is party to agreements in the normal course of business with selected customers and Caterpillar dealers in which they commit to provide a set dollar amount of financing on a pre-approved basis. They also provide lines of credit to certain customers and Caterpillar dealers, of which a portion remains unused as of the end of the period. Commitments and lines of credit generally have fixed expiration dates or other termination clauses. It has been Cat Financial's experience that not all commitments and lines of credit will be used. Management applies the same credit policies when making commitments and granting lines of credit as it does for any other financing.

Cat Financial does not require collateral for these commitments/lines, but if credit is extended, collateral may be required upon funding. The amount of the unused commitments and lines of credit for dealers as of December 31, 2017 and 2016 was $10,993 million and $12,775 million, respectively. The amount of the unused commitments and lines of credit for customers as of December 31, 2017 and 2016 was $3,092 million and $3,340 million, respectively.

Our product warranty liability is determined by applying historical claim rate experience to the current field population and dealer inventory. Generally, historical claim rates are based on actual warranty experience for each product by machine model/engine size by customer or dealer location (inside or outside North America). Specific rates are developed for each product shipment month and are updated monthly based on actual warranty claim experience.

(Millions of dollars)	2017	2016
Warranty liability, January 1	$1,258	$1,354
Reduction in liability (payments)	(860)	(909)
Increase in liability (new warranties)	1,021	813
Warranty liability, December 31	$1,419	$1,258

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22. Environmental and legal matters

The Company is regulated by federal, state and international environmental laws governing our use, transport and disposal of substances and control of emissions. In addition to governing our manufacturing and other operations, these laws often impact the development of our products, including, but not limited to, required compliance with air emissions standards applicable to internal combustion engines. We have made, and will continue to make, significant research and development and capital expenditures to comply with these emissions standards.

We are engaged in remedial activities at a number of locations, often with other companies, pursuant to federal and state laws. When it is probable we will pay remedial costs at a site, and those costs can be reasonably estimated, the investigation, remediation, and operating and maintenance costs are accrued against our earnings. Costs are accrued based on consideration of currently available data and information with respect to each individual site, including available technologies, current applicable laws and regulations, and prior remediation experience. Where no amount within a range of estimates is more likely, we accrue the minimum. Where multiple potentially responsible parties are involved, we consider our proportionate share of the probable costs. In formulating the estimate of probable costs, we do not consider amounts expected to be recovered from insurance companies or others. We reassess these accrued amounts on a quarterly basis. The amount recorded for environmental remediation is not material and is included in Accrued expenses. We believe there is no more than a remote chance that a material amount for remedial activities at any individual site, or at all the sites in the aggregate, will be required.

On January 7, 2015, the Company received a grand jury subpoena from the U.S. District Court for the Central District of Illinois. The subpoena requests documents and information from the Company relating to, among other things, financial information concerning U.S. and non-U.S. Caterpillar subsidiaries (including undistributed profits of non-U.S. subsidiaries and the movement of cash among U.S. and non-U.S. subsidiaries). The Company has received additional subpoenas relating to this investigation requesting additional documents and information relating to, among other things, the purchase and resale of replacement parts by Caterpillar Inc. and non-U.S. Caterpillar subsidiaries, dividend distributions of certain non-U.S. Caterpillar subsidiaries, and Caterpillar SARL and related structures. On March 2-3, 2017, agents with the Department of Commerce, the Federal Deposit Insurance Corporation and the Internal Revenue Service executed search and seizure warrants at three facilities of the Company in the Peoria, Illinois area, including its former corporate headquarters. The warrants identify, and agents seized, documents and information related to, among other things, the export of products from the United States, the movement of products between the United States and Switzerland, the relationship between Caterpillar Inc. and Caterpillar SARL, and sales outside the United States. It is the Company’s understanding that the warrants, which concern both tax and export activities, are related to the ongoing grand jury investigation. The Company is continuing to cooperate with this investigation. The Company is unable to predict the outcome or reasonably estimate any potential loss; however, we currently believe that this matter will not have a material adverse effect on the Company’s consolidated results of operations, financial position or liquidity.

On March 20, 2014, Brazil’s Administrative Council for Economic Defense (CADE) published a Technical Opinion which named 18 companies and over 100 individuals as defendants, including two subsidiaries of Caterpillar Inc., MGE - Equipamentos e Serviços Ferroviários Ltda. (MGE) and Caterpillar Brasil Ltda. The publication of the Technical Opinion opened CADE's official administrative investigation into allegations that the defendants participated in anticompetitive bid activity for the construction and maintenance of metro and train networks in Brazil. While companies cannot be held criminally liable for anticompetitive conduct in Brazil, criminal charges have been brought against two current employees of MGE and one former employee of MGE involving the same conduct alleged by CADE. The Company has responded to all requests for information from the authorities. The Company is unable to predict the outcome or reasonably estimate the potential loss; however, we currently believe that this matter will not have a material adverse effect on the Company's consolidated results of operations, financial position or liquidity.

On October 24, 2013, Progress Rail received a grand jury subpoena from the U.S. District Court for the Central District of California related to the former railcar repair operations of its subsidiary, United Industries, LLC ("United") at the intermodal rail yard at Terminal Island, California ("Terminal Island"). United complied with the subpoena and cooperated with the U.S. Attorney. After investigation, the U.S. Attorney alleged that United engaged in unnecessary and improper railcar repair activities and disposed of railcar parts by hand in the water surrounding its former Terminal Island operation. On December 7, 2017, United entered a guilty plea in U.S. District Court for the Central District of California to a single misdemeanor violation of the Refuse Act. As part of the agreement to enter the plea, United has paid $25 million in fines and restitution.

In addition, we are involved in other unresolved legal actions that arise in the normal course of business. The most prevalent of these unresolved actions involve disputes related to product design, manufacture and performance liability (including claimed asbestos and welding fumes exposure), contracts, employment issues, environmental matters, intellectual property rights, tax and securities laws. The aggregate range of reasonably possible losses in excess of accrued liabilities, if any,

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associated with these unresolved legal actions is not material. In some cases, we cannot reasonably estimate a range of loss because there is insufficient information regarding the matter. However, we believe there is no more than a remote chance that any liability arising from these matters would be material. Although it is not possible to predict with certainty the outcome of these unresolved legal actions, we believe that these actions will not individually or in the aggregate have a material adverse effect on our consolidated results of operations, financial position or liquidity.

23. Segment information

A. Basis for segment information

Our Executive Office is comprised of a Chief Executive Officer (CEO), five Group Presidents, a General Counsel & Corporate Secretary and a Chief Human Resources Officer. Group Presidents are accountable for a related set of end-to-end businesses that they manage. The General Counsel & Corporate Secretary leads the Law and Public Policy Division. The Chief Human Resources Officer leads the Human Resources Organization. The CEO allocates resources and manages performance at the Group President level. As such, the CEO serves as our Chief Operating Decision Maker and operating segments are primarily based on the Group President reporting structure.

Three of our operating segments, Construction Industries, Resource Industries and Energy & Transportation are led by Group Presidents. One operating segment, Financial Products, is led by a Group President who also has responsibility for Corporate Services. Corporate Services is a cost center primarily responsible for the performance of certain support functions globally and to provide centralized services; it does not meet the definition of an operating segment. One Group President leads two smaller operating segments that are included in the All Other operating segments. The Law and Public Policy Division and the Human Resources Organization are cost centers and do not meet the definition of an operating segment.

B. Description of segments

We have six operating segments, of which four are reportable segments. Following is a brief description of our reportable segments and the business activities included in the All Other operating segments:

Construction Industries: A segment primarily responsible for supporting customers using machinery in infrastructure, forestry and building construction applications. Responsibilities include business strategy, product design, product management and development, manufacturing, marketing and sales and product support. The product portfolio includes backhoe loaders, small wheel loaders, small track-type tractors, skid steer loaders, compact track loaders, multi-terrain loaders, mini excavators, compact wheel loaders, telehandlers, select work tools, small, medium and large track excavators, wheel excavators, medium wheel loaders, medium track-type tractors, track-type loaders, motor graders, pipelayers, forestry and paving products and related parts. Inter-segment sales are a source of revenue for this segment.

Resource Industries: A segment primarily responsible for supporting customers using machinery in mining, quarry and aggregates, waste and material handling applications. Responsibilities include business strategy, product design, product management and development, manufacturing, marketing and sales and product support. The product portfolio includes large track-type tractors, large mining trucks, hard rock vehicles, longwall miners, electric rope shovels, draglines, hydraulic shovels, rotary drills, large wheel loaders, off-highway trucks, articulated trucks, wheel tractor scrapers, wheel dozers, landfill compactors, soil compactors, hardrock continuous mining systems, select work tools, machinery components, electronics and control systems and related parts. In addition to equipment, Resource Industries also develops and sells technology products and services to provide customers fleet management, equipment management analytics and autonomous machine capabilities. Resource Industries also manages areas that provide services to other parts of the company, including integrated manufacturing and research and development, as

well as global procurement. Inter-segment sales are a source of revenue for this segment.

Energy & Transportation: A segment primarily responsible for supporting customers using reciprocating engines, turbines, diesel-electric locomotives and related parts across industries serving power generation, industrial, oil and gas and transportation applications, including marine and rail-related businesses. Responsibilities include business strategy, product design, product management and development, manufacturing, marketing and sales and product support of turbines and turbine-related services, reciprocating engine-powered generator sets, integrated systems used in the electric power generation industry, reciprocating engines and integrated systems and solutions for the marine and oil and gas industries; reciprocating engines supplied to the industrial industry as well as Cat machinery; the remanufacturing of Cat engines and components and remanufacturing services for other companies; the business strategy, product design, product management and development, manufacturing, remanufacturing, leasing and service of diesel-electric locomotives and components and other rail-related products and services and product support of on-highway vocational trucks for North America. Inter-segment sales are a source of revenue for this segment.

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Financial Products Segment: Provides financing alternatives to customers and dealers around the world for Caterpillar products, as well as financing for vehicles, power generation facilities and marine vessels that, in most cases, incorporate Caterpillar products. Financing plans include operating and finance leases, installment sale contracts, working capital loans and wholesale financing plans. The segment also provides insurance and risk management products and services that help customers and dealers manage their business risk. Insurance and risk management products offered include physical damage insurance, inventory protection plans, extended service coverage for machines and engines, and dealer property and casualty insurance. The various forms of financing, insurance and risk management products offered to customers and dealers help support the purchase and lease of our equipment.

All Other operating segments: Primarily includes activities such as: business strategy, product management and development, and manufacturing of filters and fluids, undercarriage, tires and rims, ground engaging tools, fluid transfer products, precision seals, and rubber sealing and connecting components primarily for Cat products; parts distribution; distribution services responsible for dealer development and administration including a wholly owned dealer in Japan, dealer portfolio management and ensuring the most efficient and effective distribution of machines, engines and parts; digital investments for new customer and dealer solutions that integrate data analytics with state-of-the art digital technologies while transforming the buying experience. Results for the All Other operating segments are included as a reconciling item between reportable segments and consolidated external reporting.

C. Segment measurement and reconciliations

There are several methodology differences between our segment reporting and our external reporting. The following is a list of the more significant methodology differences:

- Machinery, Energy & Transportation segment net assets generally include inventories, receivables, property, plant and equipment, goodwill, intangibles, accounts payable and customer advances. Liabilities other than accounts payable and customer advances are generally managed at the corporate level and are not included in segment operations. Financial Products Segment assets generally include all categories of assets.

- Segment inventories and cost of sales are valued using a current cost methodology.

- Goodwill allocated to segments is amortized using a fixed amount based on a 20 year useful life. This methodology difference only impacts segment assets; no goodwill amortization expense is included in segment profit. In addition, only a portion of goodwill for certain acquisitions made in 2011 or later has been allocated to segments.

- The present value of future lease payments for certain Machinery, Energy & Transportation operating leases is included in segment assets. The estimated financing component of the lease payments is excluded.

- Currency exposures for Machinery, Energy & Transportation are generally managed at the corporate level and the effects of changes in exchange rates on results of operations within the year are not included in segment profit. The net difference created in the translation of revenues and costs between exchange rates used for U.S. GAAP reporting and exchange rates used for segment reporting is reported as a methodology difference.

- Stock-based compensation expense is not included in segment profit.

- Postretirement benefit expenses are split; segments are generally responsible for service and prior service costs, with the remaining elements of net periodic benefit cost included as a methodology difference.

-

Machinery, Energy & Transportation segment profit is determined on a pretax basis and excludes interest expense and other income/expense items. Financial Products Segment profit is determined on a pretax basis and includes other income/expense items.

Reconciling items are created based on accounting differences between segment reporting and our consolidated external reporting. Please refer to pages 147 to 152 for financial information regarding significant reconciling items. Most of our reconciling items are self-explanatory given the above explanations. For the reconciliation of profit, we have grouped the reconciling items as follows:

- Corporate costs: These costs are related to corporate requirements primarily for compliance and legal functions for the benefit of the entire organization.

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- Restructuring costs: Primarily costs for employee separation, long-lived asset impairments and contract terminations. These costs are included in Other Operating (Income) Expenses. Restructuring costs also include other exit-related costs primarily for accelerated depreciation, project management costs, equipment relocation and inventory write-downs, and also LIFO inventory decrement benefits from inventory liquidations at closed facilities (all of which are primarily included in Cost of goods sold). A table, Reconciliation of Restructuring costs on page 149, has been included to illustrate how segment profit would have been impacted by the restructuring costs. See Note 25 for more information.

- Methodology differences: See previous discussion of significant accounting differences between segment reporting and consolidated external reporting.

- Timing: Timing differences in the recognition of costs between segment reporting and consolidated external reporting. For example, certain costs are reported on the cash basis for segment reporting and the accrual basis for consolidated external reporting.

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Segment Information
(Millions of dollars)
Reportable Segments:

	External sales and revenues	Inter-segment sales and revenues	Total sales and revenues	Depreciation and amortization	Segment profit (loss)	Segment assets at December 31	Capital expenditures
2017							
Construction Industries	$ 19,133	$ 107	$ 19,240	$ 400	$ 3,258	$ 4,838	$ 228
Resource Industries	7,504	357	7,861	514	690	6,403	183
Energy & Transportation	15,964	3,418	19,382	653	2,883	7,564	527
Machinery, Energy & Transportation	$ 42,601	$ 3,882	$ 46,483	$ 1,567	$ 6,831	$ 18,805	$ 938
Financial Products Segment	3,093	—	3,093	820	792	34,893	1,373
Total	$ 45,694	$ 3,882	$ 49,576	$ 2,387	$ 7,623	$ 53,698	$ 2,311
2016							
Construction Industries	$ 15,612	$ 78	$ 15,690	$ 458	$ 1,650	$ 5,367	$ 186
Resource Industries	5,726	284	6,010	607	(1,047)	7,135	243
Energy & Transportation	14,411	2,540	16,951	677	2,222	7,791	519
Machinery, Energy & Transportation	$ 35,749	$ 2,902	$ 38,651	$ 1,742	$ 2,825	$ 20,293	$ 948
Financial Products Segment	2,993	—	2,993	849	702	35,224	1,638
Total	$ 38,742	$ 2,902	$ 41,644	$ 2,591	$ 3,527	$ 55,517	$ 2,586
2015							
Construction Industries	$ 17,797	$ 109	$ 17,906	$ 505	$ 1,865	$ 6,176	$ 276
Resource Industries	7,739	332	8,071	643	1	8,931	303
Energy & Transportation	18,519	2,877	21,396	690	3,390	8,769	869
Machinery, Energy & Transportation	$ 44,055	$ 3,318	$ 47,373	$ 1,838	$ 5,256	$ 23,876	$ 1,448
Financial Products Segment	3,078	—	3,078	848	809	35,729	1,465
Total	$ 47,133	$ 3,318	$ 50,451	$ 2,686	$ 6,065	$ 59,605	$ 2,913

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Reconciliation of Sales and Revenues:

(Millions of dollars)	Machinery, Energy & Transportation	Financial Products	Consolidating Adjustments	Consolidated Total
2017				
Total external sales and revenues from reportable segments	$ 42,601	$ 3,093	$ —	$ 45,694
All Other operating segments	178	—	—	178
Other	(103)	74	(381) [1]	(410)
Total sales and revenues	$ 42,676	$ 3,167	$ (381)	$ 45,462
2016				
Total external sales and revenues from reportable segments	$ 35,749	$ 2,993	$ —	$ 38,742
All Other operating segments	139	—	—	139
Other	(115)	72	(301) [1]	(344)
Total sales and revenues	$ 35,773	$ 3,065	$ (301)	$ 38,537
2015				
Total external sales and revenues from reportable segments	$ 44,055	$ 3,078	$ —	$ 47,133
All Other operating segments	203	—	—	203
Other	(111)	101	(315) [1]	(325)
Total sales and revenues	$ 44,147	$ 3,179	$ (315)	$ 47,011

[1] Elimination of Financial Products revenues from Machinery, Energy & Transportation.

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Reconciliation of consolidated profit before taxes:

(Millions of dollars)	Machinery, Energy & Transportation	Financial Products	Consolidated Total
2017			
Total profit from reportable segments	$ 6,831	$ 792	$ 7,623
All Other operating segments	(43)	—	(43)
Cost centers	22	—	22
Corporate costs	(633)	—	(633)
Timing	(151)	—	(151)
Restructuring costs	(1,253)	(3)	(1,256)
Methodology differences:			
Inventory/cost of sales	(77)	—	(77)
Postretirement benefit expense	(165)	—	(165)
Stock-based compensation expense	(198)	(8)	(206)
Financing costs	(524)	—	(524)
Currency	(218)	—	(218)
Other income/expense methodology differences	(181)	—	(181)
Other methodology differences	(96)	(13)	(109)
Total consolidated profit before taxes	$ 3,314	$ 768	$ 4,082
2016			
Total profit from reportable segments	$ 2,825	$ 702	$ 3,527
All Other operating segments	(77)	—	(77)
Cost centers	8	—	8
Corporate costs	(527)	—	(527)
Timing	40	—	40
Restructuring costs	(1,014)	(5)	(1,019)
Methodology differences:			
Inventory/cost of sales	—	—	—
Postretirement benefit expense	(788)	—	(788)
Stock-based compensation expense	(209)	(9)	(218)
Financing costs	(517)	—	(517)
Currency	(22)	—	(22)
Other income/expense methodology differences	(225)	—	(225)
Other methodology differences	(47)	4	(43)
Total consolidated profit before taxes	$ (553)	$ 692	$ 139
2015			
Total profit from reportable segments	$ 5,256	$ 809	$ 6,065
All Other operating segments	(75)	—	(75)
Cost centers	20	—	20
Corporate costs	(600)	—	(600)
Timing	95	—	95
Restructuring costs	(881)	(17)	(898)
Methodology differences:			
Inventory/cost of sales	(100)	—	(100)
Postretirement benefit expense	131	—	131
Stock-based compensation expense	(270)	(13)	(283)

Financing costs	(524)	—	(524)
Currency	(261)	—	(261)
Other income/expense methodology differences	(95)	—	(95)
Other methodology differences	(79)	43	(36)
Total consolidated profit before taxes	$ 2,617	$ 822	$ 3,439

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Reconciliation of Restructuring costs:

As noted above, restructuring costs are a reconciling item between Segment profit and Consolidated profit before taxes. Had we included the amounts in the segments' results, the profit would have been as shown below:

Reconciliation of Restructuring costs:

(Millions of dollars)	Segment profit (loss)	Restructuring costs	Segment profit (loss) with restructuring costs
2017			
Construction Industries	$3,258	$ (719)	$ 2,539
Resource Industries	690	(276)	414
Energy & Transportation	2,883	(115)	2,768
Financial Products Segment	792	(3)	789
All Other operating segments	(43)	(39)	(82)
Total	$7,580	$ (1,152)	$ 6,428
2016			
Construction Industries	$1,650	$ (41)	$ 1,609
Resource Industries	(1,047)	(540)	(1,587)
Energy & Transportation	2,222	(248)	1,974
Financial Products Segment	702	(5)	697
All Other operating segments	(77)	(45)	(122)
Total	$3,450	$ (879)	$ 2,571
2015			
Construction Industries	$1,865	$ (123)	$ 1,742
Resource Industries	1	(305)	(304)
Energy & Transportation	3,390	(109)	3,281
Financial Products Segment	809	(17)	792
All Other operating segments	(75)	(129)	(204)
Total	$5,990	$ (683)	$ 5,307

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Reconciliation of Assets:

(Millions of dollars)	Machinery, Energy & Transportation	Financial Products	Consolidating Adjustments	Consolidated Total
2017				
Total assets from reportable segments	$ 18,805	$34,893	$ —	$ 53,698
All Other operating segments	1,312	—	—	1,312
Items not included in segment assets:				
Cash and short-term investments	7,381	—	—	7,381
Intercompany receivables	1,733	—	(1,733)	—
Investment in Financial Products	4,064	—	(4,064)	—
Deferred income taxes	2,166	—	(574)	1,592
Goodwill and intangible assets	4,210	—	—	4,210
Property, plant and equipment – net and other assets	2,341	—	—	2,341
Operating lease methodology difference	(191)	—	—	(191)
Inventory methodology differences	(2,287)	—	—	(2,287)
Liabilities included in segment assets	9,352	—	—	9,352
Other	(399)	(14)	(33)	(446)
Total assets	$ 48,487	$34,879	$ (6,404)	$ 76,962
2016				
Total assets from reportable segments	$ 20,293	$35,224	$ —	$ 55,517
All Other operating segments	1,381	—	—	1,381
Items not included in segment assets:				
Cash and short-term investments	5,257	—	—	5,257
Intercompany receivables	1,713	—	(1,713)	—
Investment in Financial Products	3,638	—	(3,638)	—
Deferred income taxes	3,648	—	(947)	2,701
Goodwill and intangible assets	3,883	—	—	3,883
Property, plant and equipment – net and other assets	1,645	—	—	1,645
Operating lease methodology difference	(186)	—	—	(186)
Inventory methodology differences	(2,373)	—	—	(2,373)
Liabilities included in segment assets	7,400	—	—	7,400
Other	(436)	(29)	(56)	(521)
Total assets	$ 45,863	$35,195	$ (6,354)	$ 74,704
2015				
Total assets from reportable segments	$ 23,876	$35,729	$ —	$ 59,605
All Other operating segments	1,405	—	—	1,405
Items not included in segment assets:				
Cash and short-term investments	5,340	—	—	5,340
Intercompany receivables	1,087	—	(1,087)	—
Investment in Financial Products	3,888	—	(3,888)	—
Deferred income taxes	3,208	—	(793)	2,415
Goodwill and intangible assets	3,571	—	—	3,571
Property, plant and equipment – net and other assets	1,585	—	—	1,585
Operating lease methodology difference	(213)	—	—	(213)
Inventory methodology differences	(2,646)	—	—	(2,646)
Liabilities included in segment assets	8,017	—	—	8,017

Other	(567)	(93)	(77)	(737)
Total assets	$ 48,551	$35,636	$ (5,845)	$ 78,342

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Reconciliation of Depreciation and amortization:

(Millions of dollars)	Machinery, Energy & Transportation	Financial Products	Consolidated Total
2017			
Total depreciation and amortization from reportable segments	$ 1,567	$ 820	$ 2,387
Items not included in segment depreciation and amortization:			
All Other operating segments	220	—	220
Cost centers	143	—	143
Other	86	41	127
Total depreciation and amortization	$ 2,016	$ 861	$ 2,877
2016			
Total depreciation and amortization from reportable segments	$ 1,742	$ 849	$ 2,591
Items not included in segment depreciation and amortization:			
All Other operating segments	219	—	219
Cost centers	156	—	156
Other	27	41	68
Total depreciation and amortization	$ 2,144	$ 890	$ 3,034
2015			
Total depreciation and amortization from reportable segments	$ 1,838	$ 848	$ 2,686
Items not included in segment depreciation and amortization:			
All Other operating segments	205	—	205
Cost centers	154	—	154
Other	(33)	34	1
Total depreciation and amortization	$ 2,164	$ 882	$ 3,046

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Reconciliation of Capital expenditures:

(Millions of dollars)	Machinery, Energy & Transportation	Financial Products	Consolidating Adjustments	Consolidated Total
2017				
Total capital expenditures from reportable segments	$ 938	$ 1,373	$ —	$ 2,311
Items not included in segment capital expenditures:				
All Other operating segments	134	—	—	134
Cost centers	84	—	—	84
Timing	(96)	—	—	(96)
Other	(144)	80	(33)	(97)
Total capital expenditures	$ 916	$ 1,453	$ (33)	$ 2,336
2016				
Total capital expenditures from reportable segments	$ 948	$ 1,638	$ —	$ 2,586
Items not included in segment capital expenditures:				
All Other operating segments	182	—	—	182
Cost centers	72	—	—	72
Timing	153	—	—	153
Other	(149)	133	(49)	(65)
Total capital expenditures	$ 1,206	$ 1,771	$ (49)	$ 2,928
2015				
Total capital expenditures from reportable segments	$ 1,448	$ 1,465	$ —	$ 2,913
Items not included in segment capital expenditures:				
All Other operating segments	169	—	—	169
Cost centers	195	—	—	195
Timing	37	—	—	37
Other	(219)	194	(28)	(53)
Total capital expenditures	$ 1,630	$ 1,659	$ (28)	$ 3,261

Enterprise-wide Disclosures:

Information about Geographic Areas:

	External sales and revenues [1]			Property, plant and equipment - net December 31,	
(Millions of dollars)	2017	2016	2015	2017	2016
Inside United States	$18,552	$15,956	$19,218	$ 8,126	$ 8,537
Outside United States	26,910	22,581	27,793	6,029	6,785
Total	$45,462	$38,537	$47,011	$ 14,155	$ 15,322

[1] Sales of Machinery, Energy & Transportation are based on dealer or customer location. Revenues from services provided are based on where service is rendered.

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24. Acquisitions

Kemper Valve & Fittings Corp.

On December 15, 2016, we acquired 100 percent of the equity in privately held Kemper Valve & Fittings Corp. (Kemper). Kemper is headquartered in Island Lake, Illinois and designs, manufactures, sells, and services high pressure flow iron to the well service segment of the Oil & Gas industry. This acquisition provides Caterpillar with a new product offering which complements its existing products in the Oil & Gas industry. The purchase price, net of $12 million of acquired cash, consisted of $92 million paid at closing, $1 million paid in 2017, and $8 million payable in 2018. In addition, there is contingent consideration with a fair value of $38 million as of the acquisition date which is comprised of two components: 1) our expected use of a charitable contribution carry forward for U.S. tax purposes acquired from Kemper which has an estimated maximum payment of $20 million and 2) a specified industry performance index price target during the period from January 1, 2017 to December 31, 2021 which is capped at $20 million per year. The contingent consideration is being remeasured each reporting period at its estimated fair value with any adjustment included in Other operating (income) expenses in Statement 1.

The transaction was financed with available cash. Tangible assets as of the acquisition date were $147 million, recorded at their fair values, and included cash of $12 million, receivables of $7 million, short term investments of $3 million, net deferred tax assets of $21 million, inventories of $63 million, and property, plant and equipment of $41 million. Finite-lived intangible assets acquired of $8 million included customer relationships, developed technology and trade names. The finite lived intangible assets are being amortized on a straight-line basis over an amortization period of 10 years. Liabilities assumed as of the acquisition date were $6 million, which represented their fair values. Goodwill of $1 million, non-deductible for income tax purposes, represented the excess of the consideration transferred over the net assets recognized and represented the estimated future economic benefits arising from other assets acquired that could not be individually identified and separately recognized. The results of the acquired business for the period from the acquisition date are included in the accompanying consolidated financial statements and reported in the Energy & Transportation segment in Note 23. Assuming this transaction had been made at the beginning of any period presented, the consolidated pro forma results would not be materially different from reported results.

RDS Manufacturing, Inc.

In December 2015, we acquired 100 percent of the stock of RDS Manufacturing, Inc. (RDS). RDS, located in Broken Arrow, Oklahoma, is a privately owned manufacturer of highly engineered turbomachinery parts, primarily for the turbine engine and aerospace markets. The acquisition of RDS is expected to help grow our turbine business and deepen our manufacturing expertise. The purchase price, net of $1 million of acquired cash and $5 million of trade receivables due from Caterpillar, was approximately $85 million. We paid $74 million at closing with an additional $11 million paid in December 2017.

The transaction was financed with available cash. Tangible assets acquired of $28 million, recorded at their fair values, were primarily inventories of $12 million and property, plant and equipment of $16 million. Liabilities assumed as of the acquisition date were $2 million, which represented their fair values. Goodwill of $59 million, substantially all of which is deductible for income tax purposes, represented the excess of the consideration transferred over the net assets recognized and represented the estimated future economic benefits arising from other assets acquired that could not be individually identified and separately recognized. Factors that contributed to a purchase price resulting in the recognition of goodwill include RDS’s strategic fit into our manufacturing and product portfolio and the acquired assembled workforce. The results of the acquired business for the period from the acquisition date are included in the accompanying consolidated financial statements and are reported in the Energy & Transportation

segment. Assuming this transaction had been made at the beginning of any period presented, the consolidated pro forma results would not be materially different from reported results.

Rail Product Solutions, Inc.

In October 2015, we acquired 100 percent of the stock in privately owned Rail Product Solutions, Inc. (RPS) from Amsted Rail Company, Inc. RPS is a leading North American provider of mission critical track fastening products and integrated fastening systems. The acquisition of RPS expands our portfolio of track related products and allows us to provide more comprehensive solutions to our customers. The purchase price was $165 million.

The transaction was financed with available cash. Tangible assets acquired of $41 million, recorded at their fair values, were primarily receivables of $9 million, inventories of $6 million, property, plant and equipment of $17 million and an investment in an unconsolidated affiliated company of $9 million. Finite-lived intangible assets acquired of $82 million were primarily customer relationships and are being amortized on a straight-line basis over a weighted average period of approximately 15

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years. Liabilities assumed as of the acquisition date were $11 million, which represented their fair values. Goodwill of $53 million, substantially all of which is deductible for income tax purposes, represented the excess of the consideration transferred over the net assets recognized and represented the estimated future economic benefits arising from other assets acquired that could not be individually identified and separately recognized. Factors that contributed to a purchase price resulting in the recognition of goodwill include RPS's strategic fit into our product and services portfolio and the acquired assembled workforce. The results of the acquired business for the period from the acquisition date are included in the accompanying consolidated financial statements and are reported in the Energy & Transportation segment. Assuming this transaction had been made at the beginning of any period presented, the consolidated pro forma results would not be materially different from reported results.

25. Restructuring costs

Our accounting for employee separations is dependent upon how the particular program is designed. For voluntary programs, eligible separation costs are recognized at the time of employee acceptance unless the acceptance requires explicit approval by the company. For involuntary programs, eligible costs are recognized when management has approved the program, the affected employees have been properly notified and the costs are estimable.

Restructuring costs for 2017, 2016 and 2015 were as follows:

(Millions of dollars)	2017	2016	2015
Employee separations [1]	$525	$297	$641
Contract terminations [1]	183	62	—
Long-lived asset impairments [1]	346	391	127
Defined benefit plan curtailments and termination benefits [1]	29	7	82
Other [2]	173	262	48
Total restructuring costs	$1,256	$1,019	$898

[1] Recognized in Other operating (income) expenses.
[2] Represents costs related to our restructuring programs, primarily for accelerated depreciation, project management costs, equipment relocation and inventory write-downs, and also LIFO inventory decrement benefits from inventory liquidations at closed facilities (all of which are primarily included in Cost of goods sold).

In 2017, about half of the restructuring costs were related to the closure of the facility in Gosselies, Belgium, within Construction Industries, and the remainder was related to other restructuring actions across the company. The restructuring costs in 2016 were primarily related to actions in Resource Industries in response to continued weakness in the mining industry. In addition, costs in 2016 resulted from our decision to discontinue production of on-highway vocational trucks within Energy & Transportation and other restructuring actions across the company. The restructuring costs in 2015 were primarily related to several restructuring programs across the company.

Restructuring costs are a reconciling item between Segment profit and Consolidated profit before taxes. See Note 23 for more information.

The following table summarizes the 2016 and 2017 employee separation activity:

(Millions of dollars)

Liability balance at December 31, 2015	$483
Increase in liability (separation charges)	297
Reduction in liability (payments)	(633)
Liability balance at December 31, 2016	$147
Increase in liability (separation charges)	525
Reduction in liability (payments)	(423)
Liability balance at December 31, 2017	$249

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Most of the remaining liability balance as of December 31, 2017 is expected to be paid in 2018 and primarily includes employee separation payments related to closure of the Gosselies, Belgium, facility.

In March 2017, Caterpillar informed Belgian authorities of the decision to proceed to a collective dismissal, which will lead to the closure of the Gosselies site, impacting about 2,000 employees. Production of Caterpillar products at the Gosselies site ended during the second quarter of 2017. The other operations and functions at the Gosselies site are expected to be gradually phased out by the end of the second quarter of 2018. We estimate restructuring costs incurred under this program to be about $675 million. In 2017, we recognized $653 million of restructuring costs which included $436 million of employee separation costs, $205 million for long-lived asset impairments and $77 million of other costs partially offset by a $65 million LIFO inventory decrement benefit. The remaining costs are expected to be recognized in 2018.

Restructuring costs for the year ended December 31, 2016 were $1,019 million. Throughout 2016, we initiated the following restructuring plans:

- In February 2016, we made the decision to discontinue production of on-highway vocational trucks. Based on the business climate in the truck industry and a thorough evaluation of the business, the company decided it would withdraw from this market. We recognized $104 million of restructuring costs, primarily related to long-lived asset impairments and sales discounts, which is substantially all the costs expected under this program.

- In the second half of 2016, we took additional restructuring actions in Resource Industries, including ending the production of track drills; pursuing strategic alternatives related to room and pillar products; consolidation of two product development divisions; and additional actions in response to ongoing weakness in the mining industry. For the year ended December 31, 2016, we incurred $369 million of restructuring costs for these plans primarily related to long-lived asset impairments, employee separation costs and inventory write-downs.

In September 2015, we announced a large scale restructuring plan (the Plan) including a voluntary retirement enhancement program for qualifying U.S. employees, several voluntary separation programs outside of the U.S., additional involuntary programs throughout the company and manufacturing facility consolidations and closures expected to occur through 2018. The largest action among those included in the Plan was related to our European manufacturing footprint which led to the Gosselies, Belgium, facility, closure as discussed above. We incurred $817 million, $281 million and $569 million in 2017, 2016 and 2015, respectively, for a total of $1,667 million. We expect to recognize approximately $200 million of additional restructuring costs related to the Plan in 2018.

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26. Selected quarterly financial results (unaudited)

	2017 Quarter				
(Dollars in millions except per share data)	1st	2nd	3rd	4th	
Sales and revenues	$9,822	$11,331	$11,413	$12,896	
Less: Revenues	(692)	(692)	(700)	(702)	
Sales	9,130	10,639	10,713	12,194	
Cost of goods sold	6,758	7,769	7,633	8,889	
Gross margin	2,372	2,870	3,080	3,305	
Profit (loss) [1]	$192	$802	$1,059	$(1,299)	[4,6,7]
Profit (loss) per common share	$0.33	$1.36	$1.79	$(2.18)	
Profit (loss) per common share–diluted [2]	$0.32	$1.35	$1.77	$(2.18)	[3]

	2016 Quarter				
	1st	2nd	3rd	4th	
Sales and revenues	$9,461	$10,342	$9,160	$9,574	
Less: Revenues	(681)	(697)	(697)	(689)	
Sales	8,780	9,645	8,463	8,885	
Cost of goods sold	6,822	7,419	6,527	7,541	
Gross margin	1,958	2,226	1,936	1,344	
Profit (loss) [1]	$271	$550	$283	$(1,171)	[4,5,6]
Profit (loss) per common share	$0.46	$0.94	$0.48	$(2.00)	
Profit (loss) per common share–diluted [2]	$0.46	$0.93	$0.48	$(2.00)	[3]

[1] Profit (loss) attributable to common shareholders.

[2] Diluted by assumed exercise of stock-based compensation awards using the treasury stock method.

[3] The assumed exercise of stock-based compensation awards was not considered because the impact would be antidilutive.

[4] The fourth quarter of 2017 and fourth quarter of 2016 include pre-tax pension and other postretirement benefit plan actuarial losses of $301 million and $985 million, respectively. See Note 12 for additional information on these costs.

[5] The fourth quarter of 2016 includes a pre-tax goodwill impairment charge of $595 million. See Note 10 for additional information.

[6] The fourth quarter of 2017 includes a benefit of $111 million from reductions in the valuation allowance against U.S. state deferred tax assets. The fourth quarter of 2016 includes a charge of $141 million from increases in the valuation allowance against U.S. state deferred tax assets. See Note 5 for additional information.

[7] The fourth quarter of 2017 includes a charge of $2,371 million due to the enactment of U.S. tax reform legislation on December 22, 2017. See Note 5 for additional information.

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

Not Applicable.

Item 9A. Controls and Procedures.

Disclosure Controls and Procedures

An evaluation was performed under the supervision and with the participation of the company's management, including the Chief Executive Officer (CEO) and Chief Financial Officer (CFO), of the effectiveness of the design and operation of the company's disclosure controls and procedures, as that term is defined in Rule 13a-15(e) under the Exchange Act, as of the end of the period covered by this annual report. Based on that evaluation, the CEO and CFO concluded that the company's disclosure controls and procedures are effective as of the end of the period covered by this annual report.

Management’s Report on Internal Control Over Financial Reporting

The management of Caterpillar Inc. (company) is responsible for establishing and maintaining adequate internal control over financial reporting as such term is defined in Rule 13a-15(f) under the Exchange Act. Our internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of our financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. Our 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.

Management assessed the effectiveness of the company’s internal control over financial reporting as of December 31, 2017. In making this assessment, we used the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission (COSO) in Internal Control—Integrated Framework (2013). Based on our assessment we concluded that, as of December 31, 2017, the company’s internal control over financial reporting was effective based on those criteria.
The effectiveness of the company’s internal control over financial reporting as of December 31, 2017 has been audited by PricewaterhouseCoopers LLP, an independent registered public accounting firm. Their report appears on pages 73-74 of Part II, Item 8 "Financial Statements and Supplementary Data."

Changes in Internal Control over Financial Reporting

During the last fiscal quarter, there has been no significant change in the company’s internal control over financial reporting that has materially affected, or is reasonably likely to materially affect, the company’s internal control over financial reporting.

Item 9B. Other Information.

Not Applicable.

PART III

Item 10. Directors, Executive Officers and Corporate Governance.

Identification of Directors and Business Experience

Information required by this Item is incorporated by reference from the 2018 Proxy Statement.

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Identification of Executive Officers and Business Experience

Information required by this Item appears in Item 1C of this Form 10-K.

Family Relationships

There are no family relationships between the officers and directors of the company.

Legal Proceedings Involving Officers and Directors

Information required by this Item is incorporated by reference from the 2018 Proxy Statement.

Audit Committee Financial Expert

Information required by this Item is incorporated by reference from the 2018 Proxy Statement.

Identification of Audit Committee

Information required by this Item is incorporated by reference from the 2018 Proxy Statement.

Shareholder Recommendation of Board Nominees

Information required by this Item is incorporated by reference from the 2018 Proxy Statement.

Compliance with Section 16(a) of the Exchange Act

Information required by this Item relating to compliance with Section 16(a) of the Exchange Act is incorporated by reference from the 2018 Proxy Statement.

Code of Ethics

Our Worldwide Code of Conduct (Code), first published in 1974 and most recently updated in 2015, sets a high standard for honesty and ethical behavior by every employee, including the principal executive officer, principal financial officer, controller and principal accounting officer. The Code is posted on our website at www.Caterpillar.com/code. To obtain a copy of the Code at no charge, submit a written request to the Corporate Secretary at 510 Lake Cook Road, Suite 100, Deerfield, IL 60015-4971. We post on our website at www.Caterpillar.com/code any required amendments to or waivers granted under our Code pursuant to SEC or New York Stock Exchange disclosure rules.

Item 11. Executive Compensation.

Information required by this Item is incorporated by reference from the 2018 Proxy Statement.

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

Information required by this Item relating to security ownership of certain beneficial owners and management is incorporated by reference from the 2018 Proxy Statement.

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Information required by this Item relating to securities authorized for issuance under equity compensation plans is included in the following table:

Equity Compensation Plan Information
(as of December 31, 2017)

Plan category	(a) Number of securities to be issued upon exercise of outstanding options, warrants and rights	(b) Weighted-average exercise price of outstanding options, warrants and rights	(c) Number of securities remaining available for future issuance under equity compensation plans (excluding securities reflected in column (a))
Equity compensation plans approved by security holders	25,204,464	$ 86.86	47,352,427
Equity compensation plans not approved by security holders	N/A	N/A	N/A
Total	25,204,464	$ 86.86	47,352,427

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

Information required by this Item is incorporated by reference from the 2018 Proxy Statement.

Item 14. Principal Accountant Fees and Services.

Information required by this Item is incorporated by reference from the 2018 Proxy Statement.

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PART IV

Item 15. Exhibits and Financial Statement Schedules.

Exhibits:

3.1	Restated Certificate of Incorporation, effective June 13, 2012 (incorporated by reference from Exhibit 3.1 to the Company's Form 10-Q filed for the quarter ended June 30, 2012)
3.2	Bylaws amended and restated as of June 8, 2016 (incorporated by reference from Exhibit 3.1 to the Company's Current Report on Form 8-K filed June 10, 2016)
4.1	Indenture dated as of May 1, 1987, between Caterpillar Inc. and The First National Bank of Chicago, as Trustee (incorporated by reference from Exhibit 4.1 to Form S-3 (Registration No. 333-22041) filed February 19, 1997)
4.2	First Supplemental Indenture, dated as of June 1, 1989, between Caterpillar Inc. and The First National Bank of Chicago, as Trustee (incorporated by reference from Exhibit 4.2 to Form S-3 (Registration No. 333-22041) filed February 19, 1997)
4.3	Appointment of Citibank, N.A. as Successor Trustee, dated October 1, 1991, under the Indenture, as supplemented, dated as of May 1, 1987 (incorporated by reference from Exhibit 4.3 to Form S-3 (Registration No. 333-22041) filed February 19, 1997)
4.4	Second Supplemental Indenture, dated as of May 15, 1992, between Caterpillar Inc. and Citibank, N.A., as Successor Trustee (incorporated by reference from Exhibit 4.4 to Form S-3 (Registration No. 333-22041) filed February 19, 1997)
4.5	Third Supplemental Indenture, dated as of December 16, 1996, between Caterpillar Inc. and Citibank, N.A., as Successor Trustee (incorporated by reference from Exhibit 4.5 to Form S-3 (Registration No. 333-22041) filed February 19, 1997)
4.6	Tri-Party Agreement, dated as of November 2, 2006, between Caterpillar Inc., Citibank, N.A. and U.S. Bank National Association appointing U.S. Bank as Successor Trustee under the Indenture dated as of May 1, 1987, as amended and supplemented (incorporated by reference from Exhibit 4.6 to the Company's Annual Report on Form 10-K for the year ended December 31, 2006)
4.7	Form of 2.600% Senior Note due 2022 (incorporated by reference from Exhibit 4.3 to the Company's Current Report on Form 8-K, filed June 25, 2012)
4.8	Form of 3.803% Rule 144A Global Debenture due 2042 (incorporated by reference from Exhibit 4.1 to the Company's Current Report on Form 8-K, filed August 28, 2012)
4.9	Form of 3.803% Regulation S Global Debenture due 2042 (incorporated by reference from Exhibit 4.2 to Form 8-K, filed August 28, 2012)
4.10	Form of 3.803% Global Debenture due 2042 (incorporated by reference from Exhibit 4.9 to Form S-4 filed on September 7, 2012)
4.11	Form of 3.40% Senior Note due 2024 (incorporated by reference from Exhibit 4.1 to the Company's Current Report on Form 8-K, filed on May 8, 2014)
4.12	Form of 4.30% Senior Note due 2044 (incorporated by reference from Exhibit 4.2 to the Company's Current Report on Form 8-K, filed on May 8, 2014)
4.13	Form of 4.75% Senior Note due 2064 (incorporated by reference from Exhibit 4.3 to the Company's Current Report on Form 8-K, filed on May 8, 2014)
10.1	Caterpillar Inc. 2006 Long-Term Incentive Plan as amended and restated through second amendment, dated August 22, 2013 (incorporated by reference from Exhibit 10.6 to the Company's Quarterly Report on Form 10-Q for the quarter ended September 30, 2013)*
10.2	Caterpillar Inc. 2014 Long-Term Incentive Plan, amended and restated effective June 14, 2017 (incorporated by reference from the Company's Definitive Proxy Statement, filed April 26, 2017)*
10.3	Caterpillar Inc. Executive Office Annual Incentive Plan (formerly known as the Caterpillar Inc. Executive Short Term Incentive Plan), dated June 11, 2014 (incorporated by reference from Exhibit 10.2 to the Company's Current Report on Form 8-K, filed June 12, 2014)*
10.4	First Amendment to the Caterpillar Inc. Executive Office Annual Incentive Plan , dated December 10, 2015**

10.5	Form of Restricted Stock Unit Award under Chairman’s Award Program pursuant to the 2006 Long-Term Incentive Plan, dated March 5, 2012 (incorporated by reference from Exhibit 10.3 to the Company's Annual Report on Form 10-K for the year ended December 31, 2012)*
10.6	Form of Stock Appreciation Right Award pursuant to the 2006 Long-Term Incentive Plan, dated March 5, 2012 (incorporated by reference from Exhibit 10.4 to the Company's Annual Report on Form 10-K for the year ended December 31, 2012)*
10.7	Form of Stock Appreciation Right Award pursuant to the 2014 Long-Term Incentive Plan (incorporated by reference from Exhibit 10.7 to the Company's Annual Report on Form 10-K for the year ended December 31, 2016)*

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10.8	Form of Nonqualified Stock Option Award pursuant to the 2006 Long-Term Incentive Plan, dated March 5, 2012 (incorporated by reference from Exhibit 10.5 to the Company's Annual Report on Form 10-K for the year ended December 31, 2012)*
10.9	Form of Restricted Stock Unit Award pursuant to the 2014 Long-Term Incentive Plan (incorporated by reference from Exhibit 10.8 to the Company's Annual Report on Form 10-K for the year ended December 31, 2014)*
10.10	Form of Restricted Stock Unit Award pursuant to the 2014 Long-Term Incentive Plan for awards granted after 2016 (incorporated by reference from Exhibit 10.10 to the Company's Annual Report on Form 10-K for the year ended December 31, 2016)*
10.11	Form of Restricted Stock Unit Award for Directors pursuant to the 2014 Long-Term Incentive Plan (incorporated by reference from Exhibit 10.11 to the Company's Annual Report on Form 10-K for the year ended December 31, 2014)*
10.12	Form of Restricted Stock Unit Award for Directors pursuant to the 2014 Long-Term Incentive Plan for awards granted after 2016 (incorporated by reference from Exhibit 10.12 to the Company's Annual Report on Form 10-K for the year ended December 31, 2016)*
10.13	Form of Nonqualified Stock Option Award pursuant to the 2014 Long-Term Incentive Plan (incorporated by reference from Exhibit 10.9 to the Company's Annual Report on Form 10-K for the year ended December 31, 2014)*
10.14	Form of Nonqualified Stock Option Award pursuant to the 2014 Long-Term Incentive Plan for awards granted after 2015 (incorporated by reference from Exhibit 10.12 to the Company's Annual Report on Form 10-K for the year ended December 31, 2015)*
10.15	Form of Nonqualified Stock Option Award pursuant to the 2014 Long-Term Incentive Plan for awards granted after 2016 (incorporated by reference from Exhibit 10.15 to the Company's Annual Report on Form 10-K for the year ended December 31, 2016)*
10.16	Form of Performance-Based Restricted Stock Unit Award pursuant to the 2014 Long-Term Incentive Plan (incorporated by reference from Exhibit 10.10 to the Company's Annual Report on Form 10-K for the year ended December 31, 2014)*
10.17	Form of Performance-Based Restricted Stock Unit Award pursuant to the 2014 Long-Term Incentive Plan for awards granted after 2015 (incorporated by reference from Exhibit 10.14 to the Company's Annual Report on Form 10-K for the year ended December 31, 2015)*
10.18	Form of Performance-Based Restricted Stock Unit Award pursuant to the 2014 Long-Term Incentive Plan for awards granted after 2016 (incorporated by reference from Exhibit 10.18 to the Company's Annual Report on Form 10-K for the year ended December 31, 2016)*
10.19	Caterpillar Inc. Supplemental Retirement Plan (formerly known as the Caterpillar Inc. Supplemental Pension Benefit Plan), amended and restated as of May 15, 2017 (incorporated by reference from Exhibit 10.2 to the Company's Quarterly Report on Form 10-Q for the quarter ended June 30, 2017)*
10.20	Sixth Amendment to the Caterpillar Inc. Supplemental Retirement Plan, dated December 10, 2015 (incorporated by reference from Exhibit 10.16 to the Company's Annual Report on Form 10-K for the year ended December 31, 2015)*
10.21	Caterpillar Inc. Supplemental Employees' Investment Plan, amended and restated as of May 15, 2017 (incorporated by reference from Exhibit 10.3 to the Company's Quarterly Report on Form 10-Q for the quarter ended June 30, 2017)*
10.22	First Amendment to the Caterpillar Inc. Supplement Employees' Investment Plan, effective as of July, 24, 2017*
10.23	Caterpillar Inc. Directors' Deferred Compensation Plan, as amended and restated effective January 1, 2005 (incorporated by reference from Exhibit 10.6 to the Company's Annual Report on Form 10-K for the year ended December 31, 2006)*
10.24	Caterpillar Inc. Directors' Charitable Award Program, as amended and restated effective April 1, 2008 (incorporated by reference from Exhibit 10.7 to the Company's Annual Report on Form 10-K for the year ended

	December 31, 2008)*
10.25	Caterpillar Inc. Deferred Employees' Investment Plan amended and restated as of May 15, 2017 (incorporated by reference from Exhibit 10.4 to the Company's Quarterly Report on Form 10-Q for the quarter ended June 30, 2017)*
10.26	First Amendment to the Caterpillar Inc. Deferred Employees' Investment Plan, effective as of July 24, 2017*
10.27	Caterpillar Inc. Supplemental Deferred Compensation Plan amended and restated as of May 15, 2017 (incorporated by reference from Exhibit 10.5 to the Company's Quarterly Report on Form 10-Q for the quarter ended June 30, 2017)*
10.28	First Amendment to the Caterpillar Inc. Supplemental Deferred Compensation Plan, effective as of July 24, 2017*
10.29	Solar Turbines Incorporated Managerial Retirement Objective Plan, as amended and restated through first amendment, dated December 10, 2014 (incorporated by reference from Exhibit 10.19 to the Company's Annual Report on Form 10-K for the year ended December 31, 2014)*

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10.30	Solar Turbines Incorporated Pension Plan for European Foreign Service Employees, as amended and restated, effective January 1, 2015 (incorporated by reference from Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q for the quarter ended March 31, 2015)*
10.31	Retention and Retirement Agreement dated July 31, 2017 (incorporated by reference from Exhibit 10.1 to the Company's Current Report on Form 8-K filed August 1, 2017)*
10.32	Time Share Agreement dated January 10, 2017 (incorporated by reference from Exhibit 10.29 to the Company's Annual Report on Form 10-K filed December 31, 2016)*
10.33	364-Day Facility dated September 7, 2017 (Credit Agreement) among the Company, Caterpillar Financial Services Corporation, Caterpillar Finance Designated Activity Company, Caterpillar Finance Kabushiki Kaisha, certain financial institutions named therein, Citibank, N.A., as Agent, Citibank Europe plc, as Local Currency Agent, and The Bank of Tokyo-Mitsubishi UFJ, Ltd., as Japan Local Currency Agent (incorporated by reference from Exhibit 99.1 to the Company's Current Report on Form 8-K filed September 12, 2017)
10.34	Local Currency Addendum, to the 364-Day Facility dated September 7, 2017, (Credit Agreement) among Caterpillar Financial Services Corporation, Caterpillar International Finance Designated Activity Company, the Local Currency Banks named therein, Citibank, N.A., as Agent, and Citibank Europe plc, as Local Currency Agent (incorporated by reference from Exhibit 99.2 to the Company's Current Report on Form 8-K filed September 12, 2017)
10.35	Japan Local Currency Addendum to the 364-Day Facility dated September 7, 2017 (Credit Agreement) among Caterpillar Financial Services Corporation, Caterpillar Finance Kabushiki Kaisha, the Japan Local Currency Banks named therein, Citibank, N.A., as Agent, and The Bank of Tokyo-Mitsubishi UFJ, Ltd.,as Local Currency Agent (incorporated by reference from Exhibit 99.3 to the Company's Current Report on Form 8-K filed September 12, 2017)
10.36	Amended and Restated Credit Agreement (3-Year Facility), dated September 10, 2015, by and among the Company, Caterpillar Financial Services Corporation, Caterpillar International Finance Limited and Caterpillar Finance Corporation, the Banks named therein, Local Currency Banks and Japan Local Currency Banks party thereto, Citibank, N.A., as Agent, Citibank International Limited, as Local Currency Agent, and The Bank of Tokyo-Mitsubishi UFJ, Ltd., as Japan Local Currency Agent (incorporated by reference from Exhibit 99.4 to the Company's Current Report on Form 8-K filed September 16, 2015)
10.37	Local Currency Addendum to the 3-Year Facility among the Company, Caterpillar Financial Services Corporation, Caterpillar International Finance Limited, the Local Currency Banks named therein, Citibank, N.A. and Citibank International Limited (incorporated by reference from Exhibit 99.5 to the Company's Current Report on Form 8-K filed September 16, 2015)
10.38	Japan Local Currency Addendum to the 3-Year Facility among the Company, Caterpillar Financial Services Corporation, Caterpillar Finance Corporation, the Japan Local Currency Banks named therein, Citibank, N.A. and Japan Local Currency Banks (incorporated by reference from Exhibit 99.6 to the Company's Current Report on Form 8-K filed September 16, 2015)
10.39	Omnibus Amendment No. 2 to the Amended and Restated Credit Agreement (Three-Year Facility) and Amendment No. 2 to the Japan Local Currency Addendum , dated as of September 8, 2017 among the Company, Caterpillar Financial Services Corporation, Caterpillar Finance Kabushiki Kaisha, Caterpillar International Finance Designated Activity Company, the banks named therein, Japan Local Currency Banks, The Bank of Tokyo-Mitsubishi UFJ, Ltd., as Japan Local Currency Agent, Citibank Europe plc, as Local Currency Agent, and Citibank, N.A., as Agent (incorporated by reference from Exhibit 99.4 to the Company's Current Report on Form 8-K filed September 12, 2017)
10.40	Amended and Restated Credit Agreement (Five-Year Facility), dated as of September 10, 2015, by and among the Company, Caterpillar Financial Services Corporation, Caterpillar International Finance Limited and Caterpillar Finance Corporation, the Banks named therein, Local Currency Banks and Japan Local Currency Banks party thereto, Citibank, N.A., as Agent, Citibank International Limited, as Local Currency Agent, and The Bank of Tokyo-Mitsubishi UFJ, Ltd., as Japan Local Currency Agent (incorporated by reference from Exhibit 99.7 to the Company's Current Report on Form 8-K filed September 16, 2015)

10.41	Local Currency Addendum to the Five-Year Facility among the Company, Caterpillar Financial Services Corporation, Caterpillar International Finance Limited, the Local Currency Banks named therein, Citibank, N.A. and Citibank International Limited (incorporated by reference from Exhibit 99.8 to the Company's Current Report on Form 8-K, filed September 16, 2015)
10.42	Japan Local Currency Addendum to the 5-Year Facility among the Company, Caterpillar Financial Services Corporation, Caterpillar Finance Corporation, the Japan Local Currency Banks named therein, Citibank, N.A. and The Bank of Tokyo-Mitsubishi UFJ, Ltd. (incorporated by reference from Exhibit 99.9 to the Company's Current Report on Form 8-K, filed September 16, 2015)
10.43	Omnibus Amendment No. 1 to the Amended and Restated 5-Year Facility, Amendment No. 1 to the Local Currency Addendum and Amendment No. 1 to the Japan Local Currency Addendum, dated as of September 8, 2016 (incorporated by reference from Exhibit 99.5 to the Company's Current Report on Form 8-K filed September 14, 2016)

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10.44	Omnibus Amendment No. 2 to the Amended and Restated Credit Agreement (Five-Year Facility) and Amendment No. 2 to Japan Local Currency Addendum dated September 8, 2017 among the Company, Caterpillar Financial Services Corporation, Caterpillar Finance Kabushiki Kaisha, Caterpillar International Finance Designated Activity Company, the banks named therein, Japan Local Currency Banks, The Bank of Tokyo-Mitsubishi UFJ, Ltd., as Local Currency Agent, Citibank Europe plc, as Local Currency Agent, and Citibank, N.A., as Agent (incorporated by reference from Exhibit 99.5 from the Company's Current Report on Form 8-K, filed September 12, 2017)
11	Information required to be presented in Exhibit 11 is provided in Note 16 — "Profit per share" of Part II, Item 8 "Financial Statements and Supplementary Data"
12	Computation of Ratios of Earnings to Fixed Charges
21	Subsidiaries and Affiliates of the Registrant
23	Consent of Independent Registered Public Accounting Firm
31.1	Certification of D. James Umpleby III, Chief Executive Officer of Caterpillar Inc., pursuant to Section 302 of the Sarbanes-Oxley Act of 2002
31.2	Certification of Bradley M. Halverson, Group President and Chief Financial Officer of Caterpillar Inc., pursuant to Section 302 of the Sarbanes-Oxley Act of 2002
32	Certification of D. James Umpleby III, Chief Executive Officer of Caterpillar Inc. and Bradley M. Halverson, Group President and Chief Financial Officer of Caterpillar Inc., pursuant to Section 906 of the Sarbanes-Oxley Act of 2002
101.INS	XBRL Instance Document
101.SCH	XBRL Taxonomy Extension Schema Document
101.CAL	XBRL Taxonomy Extension Calculation Linkbase Document
101.DEF	XBRL Taxonomy Extension Definition Linkbase Document
101.LAB	XBRL Taxonomy Extension Label Linkbase Document
101.PRE	XBRL Taxonomy Extension Presentation Linkbase Document

*Management contracts and compensatory plans and arrangements required to be filed as exhibits pursuant to Item 15(b) of this report.

** Corrected version of exhibit previously filed as Exhibit 10.5 to the Company's Annual Report on Form 10-K for the year ended December 31, 2015.

Unless otherwise indicated, all filings referenced above on Forms 10-K, 10-Q and 8-K are contained in SEC File No. 001-00768.

Item 16. Form 10-K Summary.

None.

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Form 10-K

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.

CATERPILLAR INC.
Registrant

February 15, 2018 By: /s/ Suzette M. Long
Suzette M. Long, General Counsel & Corporate Secretary

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.

February 15, 2018	/s/ D. James Umpleby III D. James Umpleby III	Chief Executive Officer and Director
February 15, 2018	/s/ Bradley M. Halverson Bradley M. Halverson	Group President and Chief Financial Officer
February 15, 2018	/s/ Jananne A. Copeland Jananne A. Copeland	Chief Accounting Officer
February 15, 2018	/s/ Kelly A. Ayotte Kelly A. Ayotte	Director
February 15, 2018	/s/ David. L. Calhoun David L. Calhoun	Chairman of the Board and Director

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February 15, 2018	/s/ Daniel M. Dickinson Daniel M. Dickinson	Director
February 15, 2018	/s/ Juan Gallardo Juan Gallardo	Director
February 15, 2018	/s/ Dennis A. Muilenburg Dennis A. Muilenburg	Director
February 15, 2018	/s/ William A. Osborn William A. Osborn	Director
February 15, 2018	/s/ Debra L. Reed Debra L. Reed	Director
February 15, 2018	/s/ Edward B. Rust, Jr. Edward B. Rust, Jr.	Director
February 15, 2018	/s/ Susan C. Schwab Susan C. Schwab	Director
February 15, 2018	/s/ Miles D. White Miles D. White	Director
February 15, 2018	/s/ Rayford Wilkins, Jr. Rayford Wilkins, Jr.	Director