

CATERPILLAR INC  
Form 10-K  
February 15, 2017  
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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, 2016

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.)

100 NE Adams Street, Peoria, Illinois 61629  
(Address of principal executive offices) (Zip Code)

Registrant's telephone number, including area code: (309) 675-1000

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) <sup>(1)</sup>	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

<sup>(1)</sup> 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

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

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

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

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

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K 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.

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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  Accelerated filer

Non-accelerated filer  Smaller Reporting Company

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

As of June 30, 2016, there were 584,231,181 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 \$44.1 billion.

As of December 31, 2016, there were 586,486,024 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 2017 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 2016 sales and revenues of \$38.537 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 product 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 Financial Insurance Services (Insurance Services) and their respective subsidiaries.

Other information about our operations in 2016, 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 2016 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., and Hyundai Construction Equipment (part of Hyundai Heavy Industries). 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., Xiamen XGMA Machinery Co., Ltd., XCMG Group, The Shandong Heavy Industry Group Co., Ltd. (Shantui Construction Machinery Co., Ltd.), Strong Construction Machinery Co., Ltd., 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:

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

Resource Industries

The Resource Industries segment is primarily responsible for supporting customers using machinery in mining, quarry, waste and material handling applications. Caterpillar offers mining customers the broadest product range in the industry. 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., Joy Global, Inc., Hitachi Construction Machinery Co., Ltd., Volvo Construction Equipment, Atlas Copco AB, and Sandvik Mining. Our global underground competitors include Joy Global, Inc., Atlas Copco AB, Liebherr-International AG, Sandvik Mining 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
- track and rotary drills
- highwall miners
- hard rock vehicles
- continuous miners
- large track-type tractors
- large mining trucks
- longwall miners
- large wheel loaders
- off-highway trucks
- articulated trucks
- scoops and haulers
- 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 Oil & Gas, GE Power, Deutz AG and Wärtsilä Corp. Other competitors, such as MAN Diesel & Turbo SE, Siemens Energy, 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 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 activities is conducted in North America. Cat Financial also has offices and subsidiaries in Asia/Pacific, Europe and Latin America.

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 55 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 (14 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 (18 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 12 percent\*) include:

• Inventory/rental programs, which provide assistance to dealers by financing their new Caterpillar inventory and rental fleets (4 percent\*).

• Short-term receivables Cat Financial purchased from Caterpillar at a discount (8 percent\*).

Cat Financial's retail notes receivables (33 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, 2016. 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."

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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 and the District of Columbia. 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 of our 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. 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 \$12.1 billion at December 31, 2016 and \$13.0 billion at December 31, 2015. Compared with year-end 2015, the order backlog declined about \$900 million. The decrease was in Energy & Transportation and Construction Industries, partially offset by an increase in Resource Industries. Of the total backlog at December 31, 2016, approximately \$3.4 billion was not expected to be filled in 2017.

### Dealers and Distributors

Our machines are distributed principally through a worldwide organization of dealers (dealer network), 49 located in the United States and 123 located outside the United States, serving 190 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 96 distributors covering 179 countries. The FG Wilson branded electric power generation systems manufactured by our subsidiary Caterpillar Northern Ireland Limited are sold through its worldwide network of 184



distributors covering 145 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 85% 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 2016, 2015 and 2014, we spent \$1,951 million, \$2,119 million and \$2,380 million, or 5.1, 4.5 and 4.3 percent of our sales and revenues, respectively, on our research and development programs.

#### Employment

As of December 31, 2016, we employed about 95,400 full-time persons of whom approximately 54,500 were located outside the United States. In the United States, we employed approximately 40,900 employees, most of whom are at-will employees and, therefore, not subject to any type of employment contract or agreement. Full-time employment at the end of 2015 includes approximately 2,100 employees who participated in the U.S. voluntary retirement enhancement program in the U.S. and left the company January 1, 2016. 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

	2016	2015
Inside U.S.	40,900	47,700
Outside U.S.	54,500	58,000
Total	95,400	105,700

#### By Region:

North America	41,200	48,000
EAME	20,000	21,300
Latin America	11,400	12,300
Asia/Pacific	22,800	24,100
Total	95,400	105,700

As of December 31, 2016, there were approximately 7,400 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 5,600 of such employees are covered by collective bargaining agreements with the UAW that expire on March 1, 2017 and December 17, 2018. 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 2016 and 2015 and 62 percent for 2014.

### 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 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); and registration statements on Forms S-3 and S-8, as necessary; and other forms or reports as required. The public may read and copy any materials the company has filed with the SEC at the SEC's Public Reference Room at 100 F Street, N.E., Washington, DC 20549. The public may obtain information on the operation of the Public Reference Room by calling the SEC at (800) SEC-0330. The SEC maintains a website ([www.sec.gov](http://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](http://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](http://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](http://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](http://www.Caterpillar.com/materialsrequest)

Historical information -

view/download on-line at [www.Caterpillar.com/historical](http://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 is highly sensitive to global and regional economic conditions and economic conditions in the industries we serve.

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, 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 levels, 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 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 secure material, particularly steel, 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. On the other hand, if demand for our products is less than we expect, we may experience excess inventories and be forced to incur additional charges 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 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 impact 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 depreciation lives and the amount of money users of our products can retain, 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 June 2016 vote to leave 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 a number of 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;

- imposition of burdensome tariffs or quotas;

- changes in trade agreements;

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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 innovation. 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 severe 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 attributable to industry overcapacity 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 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 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, 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,

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development and engineering, and increased cybersecurity protection and remediation costs, which in turn could adversely affect our competitiveness and results of operations.

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.

On September 24, 2015, we announced significant restructuring and cost reduction actions expected to occur through 2018 to lower our operating costs in response to current economic and business conditions. We expect to take additional restructuring actions to optimize our cost structure and improve the efficiency of our operation, which will 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 cost-reduction initiatives, 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 and to reduce costs, 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, incremental cost savings 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:

- 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;

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

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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 of our 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 and 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 debt 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 could adversely affect Caterpillar's and Cat Financial's cost of funds, 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.

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

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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 thus 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, as reported in our financial statements.

We conduct operations in many areas of the world, 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.

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

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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 of our subsidiaries, including Cat Financial. These covenants include maintaining a minimum consolidated net worth (defined as the consolidated stockholder'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 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 sanctions, could disrupt our business, and result in an adverse effect on our reputation, business and results of operations or financial condition.

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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 foreign jurisdictions. Our domestic and international tax liabilities are dependent upon the location of earnings among these different 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 countries 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, repatriation of cash to the United States, changes in generally accepted accounting principles, changes in the valuation of deferred tax assets and liabilities, changes in the amount of earnings indefinitely reinvested offshore, 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 an inherent business risk of exposure to various types of claims, lawsuits and government investigations. We are involved in various intellectual property, product liability, product warranty and environmental claims and lawsuits 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, will 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.

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 of Cat Financial's 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, 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 also 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
Douglas R. Oberhelman (63)	Chairman (2010)	Chief Executive Officer (2010-2016)
D. James Umpleby III (58)	Chief Executive Officer (2017)	Vice President (2010-2012), Group President (2013-2016)
Bradley M. Halverson (56)	Group President and Chief Financial Officer (2013)	Vice President (2010-2012)
Robert B. Charter (53)	Group President (2015)	Vice President (2009-2015)
Thomas A. Pellette (54)	Group President (2015)	Vice President (2013-2015), Vice President, Customer Services, Solar (2010-2013)
Denise C. Johnson (50)	Group President (2016)	Vice President (2012-2016), General Manager, Specialty Products (2011-2012)
Bob De Lange (47)	Group President (2017)	Vice President (2015-2016), Worldwide Product Manager, Medium Wheel Loaders, (2013-2014), Regional Product Manager, Medium Wheel Loaders (2010-2013)
James B. Buda (69)	Executive Vice President, Law and Public Policy (2012)	Senior Vice President and Chief Legal Officer (2011 - 2012)
Jananne A. Copeland (54)	Chief Accounting Officer (2007)	Chief Accounting Officer and Corporate Controller (2010 - 2012)

## 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 currently in Peoria, Illinois. On January 31, 2017, we announced plans to establish a corporate headquarters in the Chicago, Illinois area. Additional marketing and operating headquarters are located both inside and outside the United States including San Diego, California; Geneva, Switzerland; Beijing, China; Singapore,

Republic of Singapore; Piracicaba, Brazil, and Tokyo, Japan. Our Financial Products business is headquartered in leased offices located 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, 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; Dortmund, Germany; Lunen, Germany; 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	<p>Arkansas: North Little Rock</p> <p>Illinois: Aurora, Decatur, East Peoria</p> <p>North Carolina: Clayton, Sanford</p> <p>Texas: Victoria</p> <p>Georgia: Athens, LaGrange</p>	<p>Belgium: Gosselies</p> <p>Brazil: Campo Largo, Piracicaba</p> <p>China: Suzhou, Wujiang, Xuzhou, Qingzhou</p> <p>France: Grenoble, Echirrolles</p> <p>Hungary: Godollo</p> <p>India: Thiruvallar</p> <p>Indonesia: Jakarta</p> <p>Italy: Minerbio</p> <p>Japan: Akashi, Sagamihara</p> <p>Poland: Janow, Sosnowiec</p> <p>Russia: Tosno, Novosibirsk</p> <p>United Kingdom: Desford, Stockton</p> <p>Thailand: Rayong</p>
Resource Industries	<p>Illinois: Aurora, Decatur, East Peoria, Joliet</p> <p>Pennsylvania: Houston</p> <p>South Carolina: Sumter</p> <p>Tennessee: Dyersburg</p> <p>Texas: Denison</p> <p>Wisconsin: South Milwaukee</p>	<p>China: Langfang, Tongzhou, Wuxi, Zhengzhou</p> <p>France: Arras</p> <p>Germany: Dortmund, Lunen</p> <p>India: Hosur, Thiruvallar</p> <p>Indonesia: Batam</p> <p>Italy: Jesi</p> <p>Japan: Sagamihara</p> <p>Mexico: Acuna, Monterrey, Reynosa, Torreon</p> <p>Russia: Tosno</p> <p>Thailand: Rayong</p>
Energy & Transportation	<p>Alabama: Albertville, Montgomery</p> <p>California: San Diego</p> <p>Colorado: Denver</p> <p>Georgia: Griffin</p> <p>Illinois: Island Lake, LaGrange, Mossville, Mapleton, Pontiac</p> <p>Indiana: Lafayette, Muncie</p> <p>Oklahoma: Broken Arrow</p> <p>North Carolina: Winston-Salem</p> <p>Kentucky: Decoursey, Mayfield</p> <p>South Carolina: Newberry</p> <p>Texas: Channelview, De Soto, Mabank, San Antonio, Schertz, Seguin, Sherman</p>	<p>Australia: Revesby</p> <p>Belgium: Gosselies</p> <p>Brazil: Curitiba, Hortolandia, Piracicaba, Sete Lagoas</p> <p>China: Tianjin, Wuxi</p> <p>Czech Republic: Zatec</p> <p>Germany: Kiel, Mannheim, Rostock</p> <p>India: Hosur, Aurangabad</p> <p>Mexico: San Luis Potosi, Tijuana</p> <p>Republic of Singapore: Singapore</p> <p>Sweden: Ockero Islands</p> <p>Switzerland: Riazzino</p> <p>United Kingdom: Larne, Monkstown, Peterborough, Sandiacre, Shoreham, South Queensferry, Springvale, Stafford, Wimborne</p>



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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:

	2016		2015	
Quarter	High	Low	High	Low
First	\$77.25	\$56.36	\$92.37	\$78.19
Second	\$80.89	\$69.04	\$89.62	\$79.39
Third	\$88.98	\$73.46	\$85.45	\$62.99
Fourth	\$97.40	\$80.33	\$75.93	\$63.10

Number of Stockholders: Stockholders of record at year-end totaled 29,394, compared with 30,274 at the end of 2015.

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Performance Graph: Total Cumulative Stockholder Return for Five-Year Period Ending December 31, 2016

The graph below shows the cumulative stockholder return assuming an investment of \$100 on December 31, 2011, and reinvestment of dividends issued thereafter.

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	2011	2012	2013	2014	2015	2016
Caterpillar Inc.	\$100.00	\$101.58	\$105.08	\$108.69	\$83.74	\$119.01
S&P 500	\$100.00	\$115.98	\$153.51	\$174.47	\$176.88	\$197.98
S&P 500 Machinery	\$100.00	\$177.09	\$148.67	\$155.05	\$131.84	\$176.40

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, 2016, we had 27 employee stock purchase plans (the "EIP Plans") administered outside the United States for our non-U.S. employees, which had approximately 13,000 active participants in the aggregate. During the fourth quarter of 2016, approximately 71,000 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 2016.

## Other Purchases of Equity Securities

Period	Total number of Shares Purchased <sup>(1)</sup>	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, 2016	1,775	\$ 69.03	N/A	N/A
November 1-30, 2016	1,381	\$ 95.13	N/A	N/A
December 1-31, 2016	292	\$ 95.72	N/A	N/A
Total	3,448	\$ 81.74		

<sup>(1)</sup> 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)

	2016	2015	<sup>6</sup> 2014	<sup>6</sup> 2013	<sup>6</sup> 2012	<sup>6</sup>
Years ended December 31,						
Sales and revenues	\$38,537	\$47,011	\$55,184	\$55,656	\$65,875	
Percent inside the United States	41 %	41 %	38 %	33 %	31 %	
Percent outside the United States	59 %	59 %	62 %	67 %	69 %	
Sales	\$35,773	\$44,147	\$52,142	\$52,694	\$63,068	
Revenues	\$2,764	\$2,864	\$3,042	\$2,962	\$2,807	
Profit (loss) <sup>4</sup>	\$(67 )	\$2,512	\$2,452	\$6,556	\$5,397	
Profit (loss) per common share <sup>1</sup>	\$(0.11 )	\$4.23	\$3.97	\$10.16	\$8.27	
Profit (loss) per common share—diluted <sup>2,5</sup>	\$(0.11 )	\$4.18	\$3.90	\$9.95	\$8.06	
Dividends declared per share of common stock	\$3.08	\$3.01	\$2.70	\$2.32	\$2.02	
Return on average common stockholders' equity <sup>3</sup>	(0.5 )%	15.8 %	13.0 %	34.1 %	35.4 %	
Capital expenditures:						
Property, plant and equipment	\$1,109	\$1,388	\$1,539	\$2,522	\$3,350	
Equipment leased to others	\$1,819	\$1,873	\$1,840	\$1,924	\$1,726	
Depreciation and amortization	\$3,034	\$3,046	\$3,163	\$3,087	\$2,813	
Research and development expenses	\$1,951	\$2,119	\$2,380	\$1,552	\$2,491	
As a percent of sales and revenues	5.1 %	4.5 %	4.3 %	2.8 %	3.8 %	
Average number of employees	99,500	110,800	115,600	122,500	127,800	
December 31,						
Total assets	\$74,704	\$78,342	\$84,498	\$84,755	\$88,833	
Long-term debt due after one year:						
Consolidated	\$22,818	\$25,169	\$27,696	\$26,643	\$27,672	
Machinery, Energy & Transportation	\$8,436	\$8,960	\$9,445	\$7,961	\$8,624	
Financial Products	\$14,382	\$16,209	\$18,251	\$18,682	\$19,048	
Total debt:						
Consolidated	\$36,783	\$38,013	\$39,195	\$37,672	\$40,060	
Machinery, Energy & Transportation	\$9,152	\$9,486	\$9,964	\$8,737	\$10,372	
Financial Products	\$27,631	\$28,527	\$29,231	\$28,935	\$29,688	

<sup>1</sup> Computed on weighted-average number of shares outstanding.<sup>2</sup> Computed on weighted-average number of shares outstanding diluted by assumed exercise of stock-based compensation awards, using the treasury stock method.<sup>3</sup> Represents profit (loss) divided by average stockholders' equity (beginning of year stockholders' equity plus end of year stockholders' equity divided by two).<sup>4</sup> Profit (loss) attributable to common stockholders.<sup>5</sup> In 2016, the assumed exercise of stock-based compensation awards was not considered because the impact would be antidilutive.<sup>6</sup> Reflects the change in accounting principle for pension and other postretirement benefit plans (see Note 1B) and changes from the adoption of new accounting guidance (see Note 1K).

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 2016 Form 10-K.

OVERVIEW

Our sales and revenues for 2016 were \$38.537 billion, down \$8.474 billion, or 18 percent, from \$47.011 billion in 2015. Sales declined across the company reflecting weak end-user demand in most of the industries we serve including in construction, oil and gas, mining and rail. A loss of \$67 million was incurred in 2016, compared with profit of \$2.512 billion in 2015. The decline was primarily due to lower sales volume, the unfavorable impact of higher mark-to-market losses related to remeasurement of our pension and other postemployment benefits (OPEB) plans, unfavorable price realization and a goodwill impairment charge in Resource Industries. These unfavorable items were partially offset by lower costs resulting from restructuring and other cost reduction actions.

Fourth-quarter 2016 sales and revenues were \$9.574 billion, a 13 percent decrease from \$11.030 billion in the fourth quarter of 2015. A loss of \$1.171 billion was incurred in the fourth quarter of 2016 compared with a loss of \$94 million in the fourth quarter of 2015. The loss was \$2.00 per share in the fourth quarter of 2016 compared with a loss per share of \$0.16 in the fourth quarter of 2015. Profit declined primarily due to the unfavorable impact of increased mark-to-market losses related to remeasurement of our pension and OPEB plans, a goodwill impairment charge and lower sales volume. These unfavorable items were partially offset by lower costs resulting from restructuring and other cost reduction actions and lower restructuring costs.

Highlights for 2016 include:

• Sales and revenues in 2016 were \$38.537 billion, down 18 percent from 2015. Sales declined in all segments and all regions.

• Results for both 2015 and 2016 included significant restructuring costs and 2016 also included three large non-cash items.

• Restructuring costs were \$1.019 billion in 2016, or \$1.16 per share, compared with restructuring costs of \$898 million in 2015, or \$0.98 per share.

• Mark-to-market losses related to remeasurement of our pension and OPEB plans were \$985 million in 2016, or \$1.15 per share, a significant increase from mark-to-market losses in 2015 of \$179 million, or \$0.19 per share.

• Results for 2016 included a goodwill impairment charge in Resource Industries of \$595 million, or \$0.98 per share.

• Results for 2016 included a \$141 million charge to increase deferred tax valuation allowances, or \$0.24 per share.

The loss per share was \$0.11 for 2016, and excluding the above items, adjusted profit was \$3.42 per share. For 2015, profit per share was \$4.18, and excluding restructuring costs and mark-to-market losses, adjusted profit was \$5.35 per share.

• Inventory declined about \$900 million during the fourth quarter of 2016. For the full year, inventory decreased about \$1.1 billion.

• Machinery, Energy & Transportation (ME&T) operating cash flow for 2016 was about \$3.9 billion, more than sufficient to cover capital expenditures and dividends.

Restructuring Costs

In 2016, we continued to undertake a wide range of actions across the enterprise to lower our cost structure in response to weak economic conditions. Restructuring costs of \$395 million in the fourth quarter of 2016 were related to restructuring programs across the company. During 2016, we incurred \$1.019 billion in restructuring costs, primarily related to Resource Industries and Energy & Transportation. In 2017, we expect restructuring actions to continue and anticipate costs of about \$500 million.

Notes:

Effective January 1, 2016, we made several changes that impacted the accounting for pension and other postemployment benefits. We also made changes to organizational accountabilities and internal reporting that impacted segment results. Our 2015 financial information has been recast to be consistent with the 2016 presentation.

Glossary of terms included on pages 47 to 49; first occurrence of terms shown in bold italics.  
Information on non-GAAP financial measures is included on pages 62-63.

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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. We do not expect dealers will reduce inventories in 2017 as much as they did in 2016. We believe the level of dealer inventories at the end of 2017 will depend on dealer expectations for business in 2018.

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 is primarily due to lower sales volume, including an unfavorable mix of products. Our expectation is that sales mix will continue to be unfavorable in 2017. The decrease in profit also includes 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. While we do not expect substantial price improvement in the coming months, we do expect price realization to be neutral to slightly positive in 2017.

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 compared to the decrease 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. For 2017, we expect short-term incentive compensation expense will be significantly higher than 2016.

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

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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 is primarily due to the negative impact from the portion of the Surface Mining & Technology goodwill impairment not deductible for tax purposes offsetting a favorable geographic mix of profits from a tax perspective. The effective tax rate related to 2016 full-year adjusted profit before tax is 26 percent.

The provision for income taxes for 2016 also includes 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 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 <sup>1</sup>	\$ 15,612	(12 )%	\$ 7,529	(16 )%	\$ 1,059	(32 )%	\$ 3,270	(17 )%	\$ 3,754	13 %
Resource Industries <sup>2</sup>	5,726	(26 )%	2,068	(30 )%	1,001	(19 )%	1,179	(33 )%	1,478	(17 )%
Energy & Transportation <sup>3</sup>	14,411	(22 )%	6,680	(19 )%	1,104	(33 )%	4,201	(22 )%	2,426	(26 )%
All Other Segments <sup>4</sup>	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							