

TEXAS INSTRUMENTS INC  
Form 10-K  
February 23, 2017

UNITED STATES

SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM 10-K

ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934  
for the fiscal year ended December 31, 2016

OR

TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF  
1934  
for the transition period from \_\_\_\_\_ to \_\_\_\_\_

Commission File Number 1-3761

TEXAS INSTRUMENTS INCORPORATED

(Exact name of Registrant as specified in its charter)

Delaware 75-0289970  
(State of Incorporation) (I.R.S. Employer Identification No.)

12500 TI Boulevard, Dallas, Texas 75243  
(Address of Principal Executive Offices) (Zip Code)  
Registrant's Telephone Number, Including Area Code: 214-479-3773

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

Title of each class	Name of each exchange on which registered
Common Stock, par value \$1.00	The NASDAQ Global Select Market

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

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

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

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

Indicate by check mark whether the Registrant has submitted electronically and posted on its corporate website, 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 (§229.405 of this chapter) is not contained herein, and will not be contained, to the best of the Registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K.

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

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 Act). Yes No

The aggregate market value of voting stock held by non-affiliates of the Registrant was approximately \$62,805,040,210 as of June 30, 2016.

999,639,733 (Number of shares of common stock outstanding as of February 21, 2017)

Part III hereof incorporates information by reference to the Registrant's proxy statement for the 2017 annual meeting of stockholders.

## PART I

### ITEM 1. Business.

We design and make semiconductors that we sell to electronics designers and manufacturers all over the world. We began operations in 1930. We are incorporated in Delaware, headquartered in Dallas, Texas, and have design, manufacturing or sales operations in more than 30 countries. We have two reportable segments: Analog and Embedded Processing. We report the results of our remaining business activities in Other. In 2016, we generated \$13.37 billion of revenue.

We focus our resources on Analog and Embedded Processing because we believe that these segments' long product life cycles, intrinsic diversity and need for less capital-intensive manufacturing provide a combination of stability, profitability and strong cash generation. This business model is the foundation of our capital management strategy, which is based on our belief that free cash flow growth is important for maximizing shareholder value over the long term. We also believe that free cash flow will be valued only if it is productively invested in the business or returned to shareholders. Free cash flow is cash flow from operations less capital expenditures.

#### Product information

Semiconductors are electronic components that serve as the building blocks inside modern electronic systems and equipment. Semiconductors, generally known as "chips," combine multiple transistors to form a complete electronic circuit. We have tens of thousands of products that are used to accomplish many different things, such as converting and amplifying signals, interfacing with other devices, managing and distributing power, processing data, canceling noise and improving signal resolution. This broad portfolio includes products that are integral to almost all electronic equipment.

Our segments represent groups of similar products that are combined on the basis of similar design and development requirements, product characteristics, manufacturing processes and distribution channels. Our segments also reflect how management allocates resources and measures results. Additional information regarding each segment follows.

#### Analog

Analog generated \$8.54 billion of revenue in 2016. Analog semiconductors change real-world signals, such as sound, temperature, pressure or images, by conditioning them, amplifying them and often converting them to a stream of digital data that can be processed by other semiconductors, such as embedded processors. Analog semiconductors also are used to manage power in all electronic equipment by converting, distributing, storing, discharging, isolating and

measuring electrical energy, whether the equipment is plugged into a wall or running off a battery. Our Analog products are used in many markets, particularly personal electronics and industrial.

Sales of our Analog products generated about 64 percent of our revenue in 2016. According to external sources, the market for analog semiconductors was about \$48 billion in 2016. Our Analog segment's revenue in 2016 was about 18 percent of this fragmented market, the leading position. We believe we are well positioned to increase our market share over time.

In 2016, our Analog segment included the following major product lines: High Volume Analog & Logic (HVAL), Power Management (Power), High Performance Analog (HPA) and Silicon Valley Analog (SVA).

#### HVAL

HVAL included high-volume integrated products that support applications like automotive safety systems, touchscreen controllers, low-voltage motor drivers and integrated motor controllers.

#### Power

Power included products that help customers manage power in electronic systems. Our broad portfolio of Power products is designed to manage power requirements using battery management solutions, portable power components, power supply controls and point-of-load products.

## HPA

HPA included products that we market to many different customers who use them in manufacturing a wide range of end products. HPA products included high-speed data converters, amplifiers, sensors, high-reliability products, interface products and precision products that are typically used in systems that require high performance. HPA products generally have long life cycles, often more than 10 years.

## SVA

SVA included a broad portfolio of industrial, high-voltage power management, data converter, interface and operational amplifier products used in manufacturing a wide range of electronic systems. SVA products support applications like video and data interface products, high voltage power conversion, and mobile lighting and display systems. SVA products generally have long life cycles, often more than 10 years. SVA consisted primarily of products that we acquired through our purchase of National Semiconductor Corporation in 2011.

## Embedded Processing

Embedded Processing generated \$3.02 billion of revenue in 2016. Embedded Processing products are the “brains” of many types of electronic equipment. Embedded processors are designed to handle specific tasks and can be optimized for various combinations of performance, power and cost, depending on the application. Our devices vary from simple, low-cost microcontrollers used in electric toothbrushes to highly specialized, complex devices used in automotive applications such as infotainment systems and advanced driver assistance systems (ADAS). Our Embedded Processing products are used in many markets, particularly industrial, automotive and communications equipment.

An important characteristic of our Embedded Processing products is that our customers often invest their own research and development (R&D) to write software that operates on our products. This investment tends to increase the length of our customer relationships because many customers prefer to re-use software from one product generation to the next.

Sales of Embedded Processing products generated about 23 percent of our revenue in 2016. According to external sources, the market for embedded processors was about \$18 billion in 2016. Our Embedded Processing segment’s revenue in 2016 was about 17 percent of this fragmented market, among the leaders. We believe we are well positioned to increase our market share over time.

In 2016, our Embedded Processing segment included the following major product lines: Processors, Microcontrollers and Connectivity.

### Processors

Processors included digital signal processors (DSPs) and applications processors. DSPs perform mathematical computations almost instantaneously to process or improve digital data. Applications processors are designed for specific computing activity.

### Microcontrollers

Microcontrollers included self-contained systems with a processor core, memory and peripherals that are designed to control a set of specific tasks for electronic equipment. Microcontrollers tend to have minimal requirements for memory and program length, with no operating system and low software complexity. Analog components that control or interface with sensors and other systems are often integrated into microcontrollers.

### Connectivity

Connectivity included products that enable electronic equipment to connect and transfer data wirelessly, with the requirements for speed, data capability, distance, power and security varying depending on the application. Our Connectivity products support many wireless technologies to meet these requirements, including low-power wireless network standards like Sub-1GHz, Zigbee® and other technologies like Bluetooth® and WiFi.

## Other

We report the results of our remaining business activities in Other, which included operating segments that do not meet the quantitative thresholds for individually reportable segments and cannot be aggregated with other operating segments. Other generated \$1.81 billion of revenue in 2016 and included revenue from DLP® products (primarily used in projectors to create high-definition images), calculators, certain custom semiconductors known as application-specific integrated circuits (ASICs) and royalties received from agreements involving license rights to our patent portfolio.

In Other, we also included items that are not used in evaluating the results of or in allocating resources to our segments. Examples of these items include acquisition charges; restructuring charges; and certain corporate-level items, such as litigation expenses, environmental costs, insurance settlements, and gains and losses from other activities, including asset dispositions.

Financial information with respect to our segments and our operations outside the United States is contained in Note 1 to the financial statements, which is included in Item 8, "Financial Statements and Supplementary Data." Risks attendant to our foreign operations are described in Item 1A, "Risk Factors."

Markets for our products

The table below lists the major markets that used our products in 2016 and the estimated percentage of our 2016 revenue that the market represented. The chart also lists, in declining order of our revenue, the sectors within each market.

Market	Sector
Industrial  (33% of TI revenue)	Factory automation and control
	Medical/healthcare/fitness
	Building automation
	Grid infrastructure
	Test and measurement
	Space/avionics/defense
	Motor drives
	Electronic point of sale
	Appliances
	Power delivery
	Display
	Industrial transportation
	Lighting
Industrial other	
Automotive  (18% of TI revenue)	Infotainment and cluster
	Passive safety
	Advanced Driver Assistance Systems (ADAS)
	Hybrid/electric vehicle and powertrain
Personal electronics	Mobile phones



(26% of TI revenue)	<ul style="list-style-type: none"> <li>Personal and notebook computers</li> <li>Storage</li> <li>Portable electronics</li> <li>Tablets</li> <li>Home theater and entertainment</li> <li>Printers and other peripherals</li> <li>TV</li> <li>Wearables (non-medical)</li> <li>Gaming</li> </ul>
Communications equipment	Wireless infrastructure
(13% of TI revenue)	<ul style="list-style-type: none"> <li>Telecom infrastructure</li> <li>Enterprise switching</li> <li>Residential</li> </ul>
Enterprise systems	Projectors
(6% of TI revenue)	<ul style="list-style-type: none"> <li>Servers</li> <li>High-performance computing</li> <li>Multi-function printers</li> <li>Thin client</li> </ul>
Other (calculators, royalties and other)	
(4% of TI revenue)	

## Market characteristics

### Competitive landscape

Despite recent consolidation, the analog and embedded processing markets remain highly fragmented. As a result, we face significant global competition from dozens of large and small companies, including both broad-based suppliers and niche suppliers. Our competitors also include emerging companies, particularly in Asia, that sell products into the same markets in which we operate.

We believe that competitive performance in the semiconductor market generally depends on several factors, including the breadth of a company's product line, the strength and depth of its channels to market, technological innovation, product development execution, technical support, customer service, quality, reliability, price and scale. The primary competitive factors for our Analog products include design proficiency, a diverse product portfolio to meet wide-ranging customer needs, manufacturing process technologies that provide differentiated levels of performance, applications and sales support, and manufacturing expertise and capacity. The primary competitive factors for our Embedded Processing products are the ability to design and cost-effectively manufacture products, system-level knowledge about targeted end markets, the installed base of software, software expertise, applications and sales support, and a product's performance, integration and power characteristics.

### Product cycle

The global semiconductor market is characterized by constant, though generally incremental, advances in product designs and manufacturing processes. Semiconductor prices and manufacturing costs tend to decline over time as manufacturing processes and product life cycles mature.

### Market cycle

The "semiconductor cycle" refers to the ebb and flow of supply and demand and the building and depleting of inventories. The semiconductor market historically has been characterized by periods of tight supply caused by strengthening demand and/or insufficient manufacturing capacity, followed by periods of surplus inventory caused by weakening demand and/or excess manufacturing capacity. These are typically referred to as upturns and downturns in the semiconductor cycle. The semiconductor cycle could be affected by the significant time and money required to build and maintain semiconductor manufacturing facilities.

We employ several strategies to dampen the effect of the semiconductor cycle on TI. We acquire our manufacturing facilities and equipment ahead of demand, which usually allows us to acquire this capacity at lower costs. We focus our resources on our Analog and Embedded Processing segments, which serve diverse markets and diverse customers. This diversity reduces our dependence on the performance of a single market or small group of customers. Additionally, we utilize consignment inventory programs with our customers and distributors that give us improved insight into customer demand.

### Seasonality

Our revenue is subject to some seasonal variation. Historically, our sequential revenue growth rate tends to be weaker in the first and fourth quarters when compared to the second and third quarters.

### Manufacturing

Semiconductor manufacturing begins with a sequence of photolithographic and chemical processing steps that fabricate a number of semiconductor devices on a thin silicon wafer. Each device on the wafer is packaged and tested. The entire process takes place in highly specialized facilities and requires an average of 12 weeks, with most products completing within 7 to 15 weeks.

The cost and lifespan of the equipment and processes we use to manufacture semiconductors vary by technology. Our Analog products and most of our Embedded Processing products can be manufactured using mature and stable, and therefore less expensive, equipment than is needed for manufacturing advanced logic products, such as some of our processor products.

We own and operate semiconductor manufacturing facilities in North America, Asia, Japan and Europe. These include both wafer fabrication and assembly/test facilities. Our facilities require substantial investment to construct and are largely fixed-cost assets once in operation. We own much of our manufacturing capacity; therefore, a significant portion of our operating cost is fixed and changes in factory loadings can cause short-term variations in profit margins. When factory loadings decrease, our fixed costs are spread over reduced output and, absent other circumstances, our profit margins decrease. Conversely, as factory loadings increase, our fixed costs are spread over increased output and, absent other circumstances, our profit margins increase. Our operating focus is more on

maximizing long-term free cash flow than minimizing short-term variations in profit margins caused by factory loadings. To this end, we seek to maximize long-term free cash flow by keeping capital expenditures low through opportunistic purchases of facilities and equipment ahead of demand.

We expect to maintain sufficient internal manufacturing capacity to meet the vast majority of our production needs. To supplement our manufacturing capacity and maximize our responsiveness to customer demand and return on capital, we utilize the capacity of outside suppliers, commonly known as foundries, and subcontractors. In 2016, we sourced about 20 percent of our total wafers from external foundries and about 40 percent of our assembly/test services from subcontractors.

### Customers

We estimate that we sell our products to about 100,000 customers. Our customer base is diverse, with more than one-third of our revenue deriving from customers outside our largest 100.

### Sales and distribution

We market and sell our semiconductor products through direct sales and distributors, and online. We have sales or marketing offices in more than 30 countries and we continue to expand our online presence. About 60 percent of our sales are fulfilled through distribution channels. Our distributors maintain an inventory of our products and sell directly to a wide range of customers. They also sell products from our competitors.

### Inventory

Our inventory practices differ by product, but we generally maintain inventory levels that are consistent with our expectations of customer demand. We carry proportionally more inventory of products with long life cycles and a broad customer base. Additionally, we sometimes maintain product inventory in unfinished wafer form, as well as higher finished-goods inventory of low-volume products, allowing greater flexibility in periods of high demand.

About 60 percent of TI revenue is fulfilled from consignment inventory programs that we have in place for our large customers and distributors. With these programs, we own inventory that is stored at our customers' and distributors' locations, and we recognize revenue when the product is pulled from consigned inventory. These consignment programs give us improved insight into demand, allowing us to better manage our factory loadings. About 65 percent

of our distributor revenue is generated from sales of consigned inventory.

## Backlog

We define backlog as of a particular date as purchase orders with a customer-requested delivery date within a specified length of time. Our backlog at any particular date may not be indicative of revenue for any future period. As customer requirements and industry conditions change, orders may be subject to cancellation or modification of terms such as pricing, quantity or delivery date. Customer order placement practices continually evolve based on customers' individual business needs and capabilities, as well as industry supply and capacity considerations. Further, our consignment programs do not result in backlog because the order occurs at the same time as delivery, i.e., when the customer pulls the product from consigned inventory. Our backlog of orders was \$1.09 billion at December 31, 2016, and \$0.95 billion at December 31, 2015.

## Acquisitions, divestitures and investments

From time to time we consider acquisitions and divestitures that may strengthen our strategic position. We also make investments directly or indirectly in private companies. Investments are focused primarily on next-generation technologies and markets strategic to us.

## Raw materials

We purchase materials, parts and supplies from a number of suppliers. In some cases we purchase such items from sole source suppliers. The materials, parts and supplies essential to our business are generally available at present, and we believe that such materials, parts and supplies will be available in the foreseeable future.

## Intellectual property

We own many patents, and have many patent applications pending, in the United States and other countries in fields relating to our business. We have developed a strong, broad-based patent portfolio and continually add patents to that portfolio. We also have license agreements, which vary in duration, involving rights to our portfolio or those of other companies. We do not consider our business materially dependent upon any one patent or patent license.

We often participate in industry initiatives to set technical standards. Our competitors may participate in the same initiatives. Participation in these initiatives may require us to license certain of our patents to other companies on reasonable and non-discriminatory terms.

We own trademarks that are used in the conduct of our business. These trademarks are valuable assets, the most important of which are “Texas Instruments” and our corporate monogram.

## Research and development

Our R&D expense was \$1.37 billion in 2016, compared with \$1.28 billion in 2015 and \$1.36 billion in 2014. Our primary areas of R&D investment are Analog and Embedded Processing products.

We conduct most of our R&D internally. However, we also closely engage with a wide range of third parties, including software suppliers, universities and select industry consortia, and we collaborate with our foundry suppliers on semiconductor manufacturing technology.

## Executive officers of the Registrant

The following is an alphabetical list of the names and ages of the executive officers of the company and the positions or offices with the company held by each person named:

Name	Age	Position
Niels Anderskov*	47	Senior Vice President
Stephen A. Anderson	55	Senior Vice President
Ellen L. Barker*	54	Senior Vice President and Chief Information Officer
Brian T. Crutcher	44	Executive Vice President and Chief Operating Officer

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R. Gregory Delagi	54	Senior Vice President
Haviv Ilan*	48	Senior Vice President
Rafael R. Lizardi**	44	Senior Vice President and Chief Financial Officer
Kevin P. March**	59	Senior Vice President, Principal Financial Officer and Chief Accounting Officer
Kevin J. Ritchie	60	Senior Vice President
Richard K. Templeton	58	Director; Chairman of the Board, President and Chief Executive Officer
Cynthia Hoff Trochu	53	Senior Vice President, Secretary and General Counsel
Julie M. Van Haren***	48	Senior Vice President
Teresa L. West***	56	Senior Vice President
Darla H. Whitaker	51	Senior Vice President
Bing Xie	49	Senior Vice President

\* Effective January 19, 2017.

\*\* Effective February 1, 2017, Mr. Lizardi succeeded Mr. March as chief financial officer. Mr. Lizardi will assume the responsibilities of chief accounting officer effective March 1, 2017, at which time Mr. March will cease to be principal financial officer. Mr. March will retire from the company later this year.

\*\*\* Effective January 1, 2017, Ms. Van Haren succeeded Ms. West, who will retire from the company on February 28, 2017.

The term of office of these officers is from the date of their election until their successor shall have been elected and qualified. All have been employees of the company for more than five years. Messrs. Anderson, Crutcher, Delagi, March, Ritchie and Templeton and Meses. West and Whitaker have served as executive officers of the company for more than five years. Ms. Trochu and Mr. Xie became executive officers of the company in 2015.

## Employees

At December 31, 2016, we had 29,865 employees.

## Available information

Our internet address is [www.ti.com](http://www.ti.com). Information on our website is not a part of this report. We make available free of charge through our Investor Relations website our reports on Forms 10-K, 10-Q and 8-K, and amendments to those reports, as soon as reasonably practicable after they are filed with the SEC. Also available through the TI Investor Relations website are reports filed by our directors and executive officers on Forms 3, 4 and 5, and amendments to those reports.

Available on our website at [www.ti.com/corporategovernance](http://www.ti.com/corporategovernance) are: (i) our Corporate Governance Guidelines; (ii) charters for the Audit, Compensation, and Governance and Stockholder Relations Committees of our board of directors; (iii) our Code of Conduct; and (iv) our Code of Ethics for TI Chief Executive Officer and Senior Finance Officers. Stockholders may request copies of these documents free of charge by writing to Texas Instruments Incorporated, P.O. Box 660199, MS 8657, Dallas, Texas, 75266-0199, Attention: Investor Relations.

## ITEM 1A. Risk Factors.

You should read the following risk factors in conjunction with the factors discussed elsewhere in this and other of our filings with the Securities and Exchange Commission (SEC) and in materials incorporated by reference into these filings. These risk factors are intended to highlight certain factors that may affect our financial condition and results of operations and are not meant to be an exhaustive discussion of risks that apply to TI, a company with broad international operations. Like other companies, we are susceptible to macroeconomic downturns in the United States or abroad that may affect the general economic climate and our performance and the performance of our customers. Similarly, the price of our securities is subject to volatility due to fluctuations in general market conditions, actual financial results that do not meet our and/or the investment community's expectations, changes in our and/or the investment community's expectations for our future results and other factors, many of which are beyond our control.

We face substantial competition that requires us to respond rapidly to product development and pricing pressures.

We face intense technological and pricing competition in the markets in which we operate. We expect this competition will continue to increase from large competitors and from small competitors serving niche markets, and also from emerging companies, particularly in Asia, that sell products into the same markets in which we operate. For example, we may face increased competition as a result of China actively promoting and reshaping its domestic



semiconductor industry through policy changes and investment. These actions may restrict us from participating in the China market or may prevent us from competing effectively with Chinese companies. Certain of our competitors possess sufficient financial, technical and management resources to develop and market products that may compete favorably against our products, and consolidation among our competitors may allow them to compete more effectively. Additionally, traditional intellectual property licensors are increasingly providing functionality, designs and complete hardware or software solutions that compete with our products. The price and product development pressures that result from competition may lead to reduced profit margins and lost business opportunities in the event that we are unable to match the price declines or cost efficiencies, or meet the technological, product, support, software or manufacturing advancements of our competitors.

Rapid technological change in markets we serve requires us to develop new technologies and products.

Rapid technological change in markets we serve could contribute to shortened product life cycles and a decline in average selling prices of our products. Our results of operations depend in part upon our ability to successfully develop, manufacture and market innovative products. We make significant investments in research and development to develop new technologies and products to meet changing customer demands, and we might not realize a return on our investments because they are generally made before commercial viability can be assured. Further, projects that are commercially viable may not contribute significant revenue until at least a few years after they are completed.

Changes in expected demand for our products could have a material adverse effect on our results of operations.

Our customers include companies in a wide range of end markets and sectors within those markets. If demand in one or more sectors within our end markets declines or grows at a significantly slower pace than management expects, our results of operations may be adversely affected. The cyclical nature of the semiconductor market may lead to significant and often rapid increases and decreases in product demand. Additionally, the loss or significant curtailment of purchases by one or more of our large customers, including

curtailments due to a change in the design or manufacturing sourcing policies or practices of these customers, or the timing of customer or distributor inventory adjustments, may adversely affect our results of operations and financial condition.

Our results of operations also might suffer because of a general decline in customer demand resulting from, for example: uncertainty regarding the stability of global credit and financial markets; natural events or domestic or international political, social, economic or other conditions; breaches of customer information technology systems that disrupt customer operations; or a customer's inability to access credit markets and other sources of needed liquidity.

Our ability to match inventory and production with the product mix needed to fill orders may affect our ability to meet a quarter's revenue forecast. In addition, when responding to customers' requests for shorter shipment lead times, we manufacture products based on forecasts of customers' demands. These forecasts are based on multiple assumptions. If we inaccurately forecast customer demand, we may hold inadequate, excess or obsolete inventory that would reduce our profit margins and adversely affect our results of operations and financial condition.

Our global operations subject us to risks associated with domestic or international political, social, economic or other conditions.

We have facilities in more than 30 countries. About 85 percent of our revenue comes from shipments to locations outside the United States; in particular, shipments of products into China typically represent a large portion of our revenue. We are exposed to political, social and economic conditions, security risks, terrorism or other hostile acts, health conditions, labor conditions, and possible disruptions in transportation, communications and information technology networks of the various countries in which we operate, including the United States. Additionally, certain countries where we operate have experienced, and other countries may experience, increasing protectionism that may impact global trade. This could result in an adverse effect on our operations and our financial results. In addition, our global operations expose us to periods when the U.S. dollar significantly fluctuates in relation to the non-U.S. currencies in which we transact business. The remeasurement of non-U.S. dollar transactions can have an adverse effect on our results of operations and financial condition.

Our results of operations could be affected by natural events in the locations in which we operate.

We have manufacturing, data and design facilities and other operations in locations subject to natural occurrences such as severe weather, geological events or health epidemics that could disrupt operations. A natural disaster that results in a prolonged disruption to our operations may adversely affect our results and financial condition.

Our operating results and our reputation could be adversely affected by breaches or disruptions of our information technology systems.

Breaches or disruptions of our information technology systems could be caused by computer viruses, system failures, unauthorized access, sabotage, vandalism or terrorism. These events could compromise our information technology networks; result in lost data or the unauthorized release of our, our customers' or our suppliers' confidential or proprietary information; cause a disruption to our manufacturing and other operations; result in the release of employee personal data; or cause us to incur increased information technology protection costs, any of which could adversely affect our operating results and our reputation.

We face supply chain and manufacturing risks.

We rely on third parties to supply us with goods and services in a cost-effective and timely manner. Our access to needed goods and services may be adversely affected by potential disputes with suppliers or disruptions in our suppliers' operations as a result of, for example: quality excursions; uncertainty regarding the stability of global credit and financial markets; domestic or international political, social, economic and other conditions; natural events in the locations in which our suppliers operate; or limited or delayed access to key raw materials, natural resources, and utilities. Additionally, a breach of our suppliers' information technology systems could result in a release of our confidential or proprietary information. If our suppliers are unable to access credit markets and other sources of needed liquidity, we may be unable to obtain needed supplies, collect accounts receivable or access needed technology.

In particular, our manufacturing processes and critical manufacturing equipment require that certain key raw materials, natural resources and utilities be available. Limited or delayed access to and high costs of these items could adversely affect our results of operations. Our products contain materials that are subject to conflict minerals reporting requirements. Our relationships with customers and suppliers may be adversely affected if we are unable to describe our products as conflict-free. Additionally, our costs may increase if one or more of our customers demand that we change the sourcing of materials we cannot identify as conflict-free.

Our inability to timely implement new manufacturing technologies or install manufacturing equipment could adversely affect our results of operations. We subcontract a portion of our wafer fabrication and assembly and testing of our products, and we depend on third parties to provide advanced logic manufacturing process technology development. We do not have long-term contracts with all of these suppliers, and the number of alternate suppliers is limited. Reliance on these suppliers involves risks, including possible shortages of capacity in periods of high demand, suppliers' inability to develop and deliver advanced logic manufacturing process technology in a timely, cost effective, and appropriate manner and the possibility of suppliers' imposition of increased costs on us.

Our operations could be affected by the complex laws, rules and regulations to which our business is subject.

We are subject to complex laws, rules and regulations affecting our domestic and international operations relating to, for example, the environment, safety and health; exports and imports; bribery and corruption; tax; data privacy and protection; labor and employment; competition; and intellectual property ownership and infringement. Compliance with these laws, rules and regulations may be onerous and expensive and could restrict our ability to manufacture or ship our products and operate our business. If we fail to comply or if we become subject to enforcement activity, we could be subject to fines, penalties or other legal liability. Furthermore, should these laws, rules and regulations be amended or expanded, or new ones enacted, we could incur materially greater compliance costs or restrictions on our ability to manufacture our products and operate our business.

Some of these complex laws, rules and regulations – for example, those related to environmental, safety and health requirements – may particularly affect us in the jurisdictions in which we manufacture products, especially if such laws and regulations: require the use of abatement equipment beyond what we currently employ; require the addition or elimination of a raw material or process to or from our current manufacturing processes; or impose costs, fees or reporting requirements on the direct or indirect use of energy, natural resources, or materials or gases used or emitted into the environment in connection with the manufacture of our products. A substitute for a prohibited raw material or process might not be available, or might not be available at reasonable cost.

Our results of operations and our reputation could be affected by warranty claims, product liability claims, product recalls or legal proceedings.

We could be subject to claims based on warranty, product liability, epidemic or delivery failures, or other grounds relating to our products, manufacturing, services, designs or communications that could lead to significant expenses as we defend such claims or pay damage awards or settlements. In the event of a claim, we may also incur costs if we decide to compensate the affected customer or end consumer. We maintain product liability insurance, but there is no guarantee that such insurance will be available or adequate to protect against all such claims. In addition, it is possible for one of our customers to recall a product containing a TI part, for example, with respect to products used in automotive applications or handheld electronics, which may cause us to incur costs and expenses relating to the recall. Any of these events could adversely affect our results of operations, financial condition and our reputation.

Our results of operations could be affected by changes in tax-related matters.

We have facilities in more than 30 countries and as a result are subject to taxation and audit by a number of taxing authorities. Tax rates vary among the jurisdictions in which we operate. If our tax rate increases, our results of operations could be adversely affected. A number of factors could cause our taxes to increase, including a change in the jurisdictions in which our profits are earned and taxed; a change in the mix of profits from those jurisdictions; changes in available tax credits; changes in applicable tax rates; changes in tariff regulations or surcharges; or adverse resolution of audits by taxing authorities.

In addition, we are subject to laws and regulations in various jurisdictions that determine how much profit has been earned and when it is subject to taxation in that jurisdiction. Changes in these laws and regulations could affect the locations where we are deemed to earn income, which could in turn affect our results of operations. We have deferred tax assets on our balance sheet. Changes in applicable tax laws and regulations or in our business performance could affect our ability to realize those deferred tax assets, which could also affect our results of operations. Each quarter we forecast our tax liability based on our forecast of our performance for the year. If that performance forecast changes, our forecasted tax liability will change.

We have not made a provision for U.S. income tax on the portion of our undistributed earnings of our non-U.S. subsidiaries that is considered permanently reinvested outside the United States. If in the future we repatriate any of these foreign earnings, we might incur incremental U.S. income tax, which could affect our results of operations.

Our results of operations and financial condition could be adversely affected if a customer or a distributor suffers a loss with respect to our inventory.

We have consignment inventory programs in place for some of our largest customers and distributors. If a customer or distributor were to experience a loss with respect to TI-consigned inventory, our results of operations and financial condition may be adversely affected if we do not recover the full value of the lost inventory from the customer, distributor or insurer, or if our recovery is delayed.

Our results of operations could be adversely affected by our distributors' promotion of competing product lines or our distributors' financial performance.

In 2016, about 60 percent of our revenue was generated from sales of our products through distributors. Our distributors carry competing product lines, and our sales could be affected if our distributors promote competing products over our products. Moreover, our results of operations could be affected if our distributors suffer financial difficulties that result in their inability to pay amounts owed to us. Disputes with or the loss of a significant number of distributors could be disruptive or harmful to our current business.

Our margins may vary over time.

Our profit margins may be adversely affected by a number of factors, including decreases in customer demand and shipment volume; obsolescence of our inventory; shifts in our product mix; and changes in tariffs. In addition, we operate in a highly competitive market environment that might adversely affect pricing for our products. Because we own much of our manufacturing capacity, a significant portion of our operating costs is fixed. In general, these fixed costs do not decline with reductions in customer demand or factory loadings, and can adversely affect profit margins as a result.

Our performance depends in part on our ability to enforce our intellectual property rights and to maintain freedom of operation.

Access to worldwide markets depends in part on the continued strength of our intellectual property portfolio. There can be no assurance that, as our business expands into new areas, we will be able to independently develop the technology, software or know-how necessary to conduct our business or that we can do so without infringing the intellectual property rights of others. To the extent that we have to rely on licensed technology from others, there can be no assurance that we will be able to obtain licenses at all or on terms we consider reasonable. We may, directly or indirectly, face infringement claims from third parties, including non-practicing entities that have acquired patents to

pursue enforcement actions against other companies. These assertions, whether or not of any merit, could expose us to claims for damages and/or injunctions from third parties, as well as claims for indemnification by our customers in instances where we have a contractual or other legal obligation to indemnify them against damages resulting from infringement claims.

We actively enforce and protect our own intellectual property rights. However, our efforts cannot prevent all misappropriation or improper use of our protected technology, including, for example, third parties' use of our patented technology in their products without the right to do so or third parties' sale of counterfeit products bearing our trademark. Moreover, the laws of countries where we operate may not protect our intellectual property rights to the same extent as U.S. laws.

Our debt could affect our operations and financial condition.

From time to time, we issue debt securities with various interest rates and maturities. While we believe we will have the ability to service this debt, our ability to make principal and interest payments when due depends upon our future performance, which will be subject to general economic conditions, industry cycles, and business and other factors affecting our operations, including the other risk factors described under Item 1A, many of which are beyond our control. In addition, our obligation to make principal and interest payments could divert funds that otherwise would be invested in our operations or returned to shareholders, or could cause us to raise funds by, for example, issuing new debt or equity or selling assets.

Our results of operations and liquidity could be affected by changes in the financial markets.

We maintain bank accounts, one or more multi-year revolving credit agreements, and a portfolio of investments to support the financing needs of the company. Our ability to fund our operations, invest in our business, make strategic acquisitions, service our debt obligations and meet our cash return objectives depends upon continuous access to our bank and investment accounts, and may depend on access to our bank credit lines that support commercial paper borrowings and provide additional liquidity through short-term bank loans. If we are unable to access these accounts and credit lines (for example, due to instability in the financial markets), our results of operations and financial condition could be adversely affected and our ability to access the capital markets or redeem our investments could be restricted.

Increases in health care and pension benefit costs could affect our results of operations and financial condition.

Federal and state health care reform programs could increase our costs with regard to medical coverage of our employees, which could reduce profitability and affect our results of operations and financial condition. In addition, obligations related to our pension and other postretirement plans reflect assumptions that affect the planned funding and costs of these plans, including the actual return on plan assets, discount rates, plan participant population demographics and changes in pension regulations. Changes in these assumptions may affect plan funding, cash flow and results of operations, and our costs and funding obligations could increase significantly if our plans' actual experience differs from these assumptions.

Our continued success depends in part on our ability to retain and recruit a sufficient number of qualified employees in a competitive environment.

Our continued success depends in part on the retention and recruitment of skilled personnel, including engineering, management, marketing, technical and staff personnel. Skilled and experienced personnel in our industry are in high demand, and competition for their talents is intense. There can be no assurance that we will be able to successfully retain and recruit the key engineering, management and technical personnel that we require to execute our business strategy. Our ability to recruit internationally or deploy employees to various locations may be limited by immigration laws.

Our ability to successfully implement business and organizational changes could affect our business plans and results of operations.

From time to time, we undertake business and organizational changes, including acquisitions, divestitures and restructuring actions, to support or carry out our strategic objectives. Our failure to successfully implement these changes could adversely affect our business plans and operating results. For example, we may not realize the expected benefits of an acquisition if we are unable to timely and successfully integrate acquired operations, product lines and technology, and our pre-acquisition due diligence may not identify all possible issues and risks that might arise with respect to an acquisition. Further, we may not achieve or sustain the expected growth or cost savings benefits of business and organizational changes, and restructuring charges could differ materially in amount and timing from our expectations.

Material impairments of our goodwill or intangible assets could adversely affect our results of operations.



We have a significant amount of goodwill and intangible assets on our consolidated balance sheet. Charges associated with impairments of goodwill or intangible assets could adversely affect our financial condition and results of operations.

ITEM 1B. Unresolved Staff Comments.

Not applicable.

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## ITEM 2. Properties.

Our principal executive offices are located at 12500 TI Boulevard, Dallas, Texas. The following table indicates the general location of our principal manufacturing and design operations and the reportable segments that make major use of them. Except as otherwise indicated, we own these facilities.

	Embedded	
	Analog	Processing
Dallas, Texas	X	X
Houston, Texas		X
Sherman, Texas	X	
Tucson, Arizona*	X	
Santa Clara, California	X	
South Portland, Maine	X	
Chengdu, China <sup>†</sup>	X	X
Shanghai, China*	X	X
Freising, Germany	X	X
Bangalore, India <sup>†</sup>	X	X
Aizu, Japan	X	X
Miho, Japan	X	X
Kuala Lumpur, Malaysia <sup>†</sup>	X	X
Melaka, Malaysia <sup>†</sup>	X	
Aguascalientes, Mexico*	X	
Baguio, Philippines <sup>†</sup>	X	X
Pampanga (Clark), Philippines <sup>†</sup>	X	X
Greenock, Scotland	X	
Taipei, Taiwan <sup>†</sup>	X	X

\*Leased.

Portions of the facilities are leased and owned. This may include land leases, particularly for our non-U.S. sites.

Our facilities in the United States contained approximately 13.1 million square feet at December 31, 2016, of which approximately 0.7 million square feet were leased. Our facilities outside the United States contained approximately 10.2 million square feet at December 31, 2016, of which approximately 1.5 million square feet were leased.

At the end of 2016, we occupied substantially all of the space in our facilities.

Leases covering our currently occupied leased facilities expire at varying dates, generally within the next five years. We believe our current properties are suitable and adequate for both their intended purpose and our current and foreseeable future needs.

ITEM 3. Legal Proceedings.

We are involved in various inquiries and proceedings that arise in the ordinary course of our business. We believe that the amount of our liability, if any, will not have a material adverse effect upon our financial condition, results of operations or liquidity.

ITEM 4. Mine Safety Disclosures.

Not applicable.

## PART II

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

The information concerning the number of stockholders of record at December 31, 2016, is contained in Item 6, “Summary of Selected Financial Data.”

## Common stock prices and dividends

TI common stock is listed on The NASDAQ Global Select Market. The table below shows the high and low closing prices of TI common stock as reported by Bloomberg L.P. and the dividends paid per common share in each quarter during the past two years.

		Quarter			
		1st	2nd	3rd	4th
Stock prices:					
2016	High	\$58.37	\$63.30	\$71.42	\$74.87
	Low	48.03	56.43	61.06	67.60
2015	High	59.94	58.73	52.08	58.98
	Low	51.78	51.51	43.52	48.44
Dividends paid:					
2016		\$0.38	\$0.38	\$0.38	\$0.50
2015		0.34	0.34	0.34	0.38

## Issuer purchases of equity securities

The following table contains information regarding our purchases of our common stock during the fourth quarter of 2016.

Period	Total Number of Shares Purchased	Average Price Paid per Share	Total Number of Shares Purchased as Part of Publicly Announced Plans or Programs <sup>(1)</sup>	Approximate Dollar Value of Shares that May Yet Be Purchased Under the Plans or Programs <sup>(1)</sup>
October 1, 2016 through October 31, 2016	2,919,230	\$ 69.92	2,919,230	\$6.07 billion
November 1, 2016 through November 30, 2016	2,857,964	71.23	2,857,964	5.87 billion
December 1, 2016 through December 31, 2016	943,139	71.36	943,139	5.80 billion
Total	6,720,333 <sup>(2)</sup>	\$ 70.68	6,720,333 <sup>(2)</sup>	\$5.80 billion <sup>(3)</sup>

- (1) All purchases during the quarter were made under the authorization from our board of directors to purchase up to \$7.5 billion of additional shares of TI common stock announced September 17, 2015.
- (2) All purchases during the quarter were open-market purchases.
- (3) As of December 31, 2016, this amount consisted of the remaining portion of the \$7.5 billion authorized in September 2015. No expiration date has been specified for this authorization.

## ITEM 6. Selected Financial Data.

(Millions of dollars, except share and per-share amounts)	For Years Ended December 31,				
	2016	2015	2014	2013	2012
<b>Cash flow data:</b>					
Cash flows from operating activities (a)	\$4,614	\$4,397	\$4,054	\$3,514	\$3,483
Capital expenditures	531	551	385	412	495
Free cash flow (a) (b)	4,083	3,846	3,669	3,102	2,988
Dividends paid	1,646	1,444	1,323	1,175	819
Stock repurchases	2,132	2,741	2,831	2,868	1,800
<b>Income statement data:</b>					
<b>Revenue by segment:</b>					
Analog	8,536	8,339	8,104	7,194	6,998
Embedded Processing	3,023	2,787	2,740	2,450	2,257
Other	1,811	1,874	2,201	2,561	3,570
Revenue	13,370	13,000	13,045	12,205	12,825
Gross profit	8,240	7,560	7,427	6,364	6,368
Operating expenses (R&D and SG&A)	3,137	3,028	3,201	3,380	3,681
Acquisition charges	319	329	330	341	450
Restructuring charges/other	(15 )	(71 )	(51 )	(189 )	264
Operating profit	4,799	4,274	3,947	2,832	1,973
Net income (c)	\$3,595	\$2,986	\$2,821	\$2,162	\$1,759

As a result of accounting rule ASC 260, which requires a portion of Net income to be allocated to unvested restricted stock units (RSUs) on which we pay dividend equivalents, diluted earnings per share (EPS) is calculated using the following:

Net income (c)	\$3,595	\$2,986	\$2,821	\$2,162	\$1,759
Income allocated to RSUs	(44 )	(42 )	(43 )	(36 )	(31 )
Income allocated to common shares for diluted EPS (c)	\$3,551	\$2,944	\$2,778	\$2,126	\$1,728
Average diluted shares outstanding, in millions (c)	1,021	1,043	1,080	1,113	1,146
Diluted EPS (c)	\$3.48	\$2.82	\$2.57	\$1.91	\$1.51
Cash dividends declared per common share	\$1.64	\$1.40	\$1.24	\$1.07	\$0.72

(a) Prior periods reclassified to conform to the 2016 presentation, having adopted ASU 2016-09. See Note 2.

(b) Free cash flow is a non-GAAP measure derived by subtracting Capital expenditures from Cash flows from operating activities.

(c) 2016 amounts reflect the adoption of ASU 2016-09. See Note 2.

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(Millions of dollars, except Other data items)	December 31,				
	2016	2015	2014	2013	2012
<b>Balance sheet data:</b>					
Cash, cash equivalents and short-term investments	\$3,490	\$3,218	\$3,541	\$3,829	\$3,965
Total assets	16,431	16,230	17,372	18,554	19,565
Current portion of long-term debt and commercial paper					
borrowings	631	1,000	1,001	1,000	1,500
Long-term debt	2,978	3,120	3,630	4,145	4,175
<b>Other data - Number of:</b>					
Employees	29,865	29,977	31,003	32,209	34,151
Stockholders of record	14,910	15,563	16,361	17,213	18,128

See Notes to the financial statements and Management's discussion and analysis of financial condition and results of operations.

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

### Overview

We design, make and sell semiconductors to electronics designers and manufacturers all over the world. Our business model is carefully constructed around the following attributes:

• **Industry's broadest portfolio of differentiated analog and embedded processing semiconductors.** Our customers need multiple chips for their systems. The breadth of our portfolio means we can solve more of these needs than can our competitors, which gives us access to more customers and the opportunity to generate more revenue per system. We invest more than \$1 billion each year to develop new products for our portfolio.

- **A strong foundation of manufacturing technology and low-cost production.** We invest in manufacturing technologies that differentiate the features of our semiconductors, and we do most of our own production in-house, as opposed to outsourcing it. This ability to directly control our manufacturing helps ensure a consistent supply of products for our customers. We produce billions of semiconductors each year on a mixture of 150-, 200- and 300-millimeter wafers, and we are able to keep costs low for manufacturing facilities and equipment because our Analog and much of our Embedded Processing semiconductors can be made using mature assets that we acquire ahead of demand when their prices are most attractive. In 2016, we increased factory loadings by about 15 percent for our Analog semiconductors on 300-millimeter wafers, which have a 40 percent cost advantage per unpackaged chip over 200-millimeter wafers. The majority of our Analog growth will be produced on 300-millimeter wafers, which will be meaningful to the growth of our cash flow over the long term.

• **Industry's largest market channels.** Our global sales force is larger than those of our competitors. The breadth of our portfolio attracts an increasing number of visits to our website, where customers often begin their initial product searches and design-in journey. Our web presence, together with our global sales force, provides us unique access to about 100,000 customers.

• **Diversity and longevity in our products and in the markets we serve.** Together, the attributes above result in diverse and long-lived positions that deliver high terminal value to our shareholders. Because of the breadth of our portfolio, we are not dependent on any single product, and because of the breadth of our markets we are not dependent on any single application or customer. Some of our products generate revenue for decades, which strengthens the return on our investments.

The combined effect of these attributes is that over time we have grown free cash flow and gained market share in Analog and Embedded Processing. These attributes put us in a unique class of companies with the ability to grow, generate cash, and return that cash to shareholders.

Management's discussion and analysis of financial condition and results of operations (MD&A) should be read in conjunction with the financial statements and the related notes that appear elsewhere in this document. In the following discussion of our results of operations:

• **All dollar amounts in the tables are stated in millions of U.S. dollars.**

• **When we discuss our results:**

- o Unless otherwise noted, changes in our revenue are attributable to changes in customer demand, which are evidenced by fluctuations in shipment volumes.
- o New products tend not to have a significant impact on our revenue in any given period because we sell such a large number of products.
- o From time to time, our revenue and gross profit are affected by changes in demand for higher-priced or lower-priced products, which we refer to as changes in the "mix" of products shipped.
- o Because we own much of our manufacturing capacity, a significant portion of our operating cost is fixed. When factory loadings decrease, our fixed costs are spread over reduced output and, absent other circumstances, our profit margins decrease. Conversely, as factory loadings increase, our fixed costs are spread over increased output and,



absent other circumstances, our profit margins increase. Increases and decreases in factory loadings tend to correspond to increases and decreases in demand.

o Over time, we have been allocating resources from areas like manufacturing support and SG&A into R&D activities. As a result, R&D expense will continue increasing in 2017.

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Our effective tax rate (Provision for income taxes as a percentage of Income before income taxes) benefits from lower tax rates (compared to the U.S. statutory income tax rate) applicable to our operations in many of the jurisdictions in which we operate and from U.S. tax benefits. These lower non-U.S. tax rates are generally statutory in nature, without expiration and available to companies that operate in those taxing jurisdictions.

Our segments represent groups of similar products that are combined on the basis of similar design and development requirements, product characteristics, manufacturing processes and distribution channels, and how management allocates resources and measures results. See Note 1 to the financial statements for more information regarding our segments.

In the fourth quarter of 2016, we adopted ASU 2016-09 related to stock compensation. We applied the new standard prospectively as of the beginning of 2016 for the Consolidated Statements of Income and on a full retrospective basis for all periods in the Consolidated Statements of Cash Flows. See Note 2 to the financial statements for more details.

#### Results of operations

We continued to perform well in 2016, reflecting our focus on Analog and Embedded Processing. These products serve highly diverse markets with thousands of applications, and we believe have dependable long-term growth opportunities. In 2016, Analog and Embedded Processing represented 86 percent of revenue. Gross margin of 61.6 percent for the year reflects the quality of our product portfolio, as well as the efficiency of our manufacturing strategy.

Our focus on Analog and Embedded Processing allows us to generate strong cash flow from operations. In 2016, cash flows from operations were \$4.61 billion, up from \$4.40 billion in 2015. Free cash flow in 2016 was 30.5 percent of revenue, up from 29.6 percent a year ago and consistent with our targeted range of 20-30 percent of revenue. During the year, we returned \$3.78 billion of cash to investors through a combination of stock repurchases and dividends. Our dividends represented 40 percent of free cash flow, underscoring their sustainability. Free cash flow is a non-GAAP financial measure. For a reconciliation to GAAP and an explanation of the reason for providing this non-GAAP measure, see the Non-GAAP financial information section after the Liquidity and capital resources section.

#### Details of financial results – 2016 compared with 2015

Revenue of \$13.37 billion was up \$370 million, or 3 percent, from 2015, due to higher revenue from Embedded Processing and Analog.

Gross profit was \$8.24 billion, an increase of \$680 million, or 9 percent, due to lower manufacturing costs and, to a lesser extent, higher revenue. Gross profit margin was 61.6 percent compared with 58.2 percent.

Operating expenses were \$1.37 billion for R&D and \$1.77 billion for SG&A. R&D expense increased \$90 million, or 7 percent, due to a combination of our ongoing allocation of resources into R&D activities and higher compensation-related costs. SG&A expense increased \$19 million, primarily due to higher compensation-related costs.

Acquisition charges associated with our 2011 acquisition of National Semiconductor were \$319 million compared with \$329 million. These non-cash charges resulted from the amortization of intangible assets. See Note 13 to the financial statements.

Restructuring charges/other was a net credit of \$15 million, which included a gain on the sale of intellectual property of \$40 million that was partially offset by \$25 million related to restructuring charges. This compared with a net credit of \$71 million in 2015, which included gains on sales of assets of \$83 million that were partially offset by \$12 million related to restructuring charges and other credits. These amounts are included in Other for segment reporting purposes. See Note 3 to the financial statements.

Operating profit was \$4.80 billion, or 35.9 percent of revenue, compared with \$4.27 billion, or 32.9 percent of revenue.

OI&E for 2016 was \$211 million compared with \$32 million. The increase is due to income of \$188 million from settlements related to intellectual property infringement.

Our income tax provision was \$1.34 billion compared with \$1.23 billion. The increase was primarily due to higher income before income taxes, partially offset by a tax benefit for stock compensation. Our effective tax rates were 27 percent in 2016 and 29 percent in 2015. See Note 6 to the financial statements for a reconciliation of the U.S. statutory income tax rate to the effective tax rate.

Net income was \$3.60 billion, an increase of \$609 million, or 20 percent. EPS was \$3.48 compared with \$2.82. EPS benefited \$0.13 in 2016 due to the application of the new accounting standard related to stock compensation.

## Segment results – 2016 compared with 2015

Analog (included High Volume Analog & Logic (HVAL), Power Management (Power), High Performance Analog (HPA) and Silicon Valley Analog (SVA) product lines)

	2016	2015	Change	
Revenue	\$8,536	\$8,339	2	%
Operating profit	3,380	3,048	11	%
Operating profit % of revenue	39.6 %	36.6 %		

Analog revenue increased primarily due to SVA and HPA. Power also grew, but to a lesser extent, while HVAL declined due to the mix of products shipped. Operating profit increased due to higher gross profit, which benefited from lower manufacturing costs.

Embedded Processing (included Processors, Microcontrollers and Connectivity product lines)

	2016	2015	Change	
Revenue	\$3,023	\$2,787	8	%
Operating profit	801	596	34	%
Operating profit % of revenue	26.5 %	21.4 %		

Embedded Processing revenue increased due to, in declining order, Processors, Microcontrollers and Connectivity. Processors revenue increased due to the mix of products shipped. Operating profit increased primarily due to higher revenue and associated gross profit.

Other (included DLP products, calculators, custom ASICs and royalties)

	2016	2015	Change	
Revenue	\$1,811	\$1,874	(3)	%
Operating profit*	618	630	(2)	%
Operating profit % of revenue	34.1 %	33.6 %		

\*Includes Acquisition charges and Restructuring charges/other

Other revenue decreased due to, in declining order, lower royalties, custom ASIC products and calculators. This decrease was partially offset by growth in DLP products. Operating profit decreased \$12 million.

Prior results of operations

In 2015, Analog revenue grew 3 percent, and Embedded Processing revenue grew 2 percent. Analog and Embedded Processing represented 86 percent of revenue in 2015, up from 83 percent in 2014. Gross margin was 58.2 percent for 2015.

In 2015, cash flows from operations were \$4.40 billion, up from \$4.05 billion in 2014. Free cash flow in 2015, was 29.6 percent of revenue, up from 28.1 percent in 2014. During 2015, we returned \$4.19 billion of cash to investors through a combination of stock repurchases and dividends.

#### Details of financial results – 2015 compared with 2014

Revenue of \$13.00 billion was about even with 2014, as higher revenue from Analog and Embedded Processing was offset by lower revenue from Other. Our 2015 revenue was negatively affected by about \$150 million from changes in foreign currency exchange rates.

Gross profit was \$7.56 billion, an increase of \$133 million, or 2 percent, due to lower manufacturing costs. Gross profit margin was 58.2 percent of revenue compared with 56.9 percent.

Operating expenses were \$1.28 billion for R&D and \$1.75 billion for SG&A. R&D expense decreased \$78 million, or 6 percent, and SG&A decreased \$95 million, or 5 percent. Both comparisons reflect savings from ongoing efforts across the company to align costs with growth opportunities, including the completed restructuring actions in Embedded Processing and Japan. These decreases were partially offset by higher compensation-related costs.

Acquisition charges were related to our 2011 acquisition of National Semiconductor and were \$329 million, about even with 2014. These non-cash charges were primarily from the amortization of intangible assets.

Restructuring charges/other was a net credit of \$71 million, which included gains on sales of assets of \$83 million that were partially offset by \$12 million related to restructuring charges and other credits. This compared with a net credit of \$51 million in 2014, reflecting gains on sales of assets of \$75 million that were partially offset by restructuring charges and other expenses of \$24 million. These amounts are included in Other for segment reporting purposes.

Operating profit was \$4.27 billion, or 32.9 percent of revenue, compared with \$3.95 billion, or 30.3 percent of revenue, in 2014.

The income tax provision was \$1.23 billion compared with \$1.05 billion. The increase in the total tax provision was due to higher income before income taxes and, to a lesser extent, a lower benefit from non-U.S. effective tax rates. Our effective tax rate was 29 percent in 2015 and 27 percent in 2014.

Net income was \$2.99 billion, an increase of \$165 million, or 6 percent, from 2014. EPS was \$2.82 compared with \$2.57 in 2014.

#### Segment results – 2015 compared with 2014

##### Analog

	2015	2014	Change	
Revenue	\$8,339	\$8,104	3	%
Operating profit	3,048	2,786	9	%
Operating profit % of revenue	36.6 %	34.4 %		

Analog revenue increased primarily due to HVAL. Power and SVA also grew, but to a lesser extent. HPA declined due to the mix of products shipped. Operating profit increased due to higher revenue and associated gross profit and, to a lesser extent, lower manufacturing costs.

##### Embedded Processing

	2015	2014	Change	
Revenue	\$2,787	\$2,740	2	%
Operating profit	596	384	55	%
Operating profit % of revenue	21.4 %	14.0 %		

Embedded Processing revenue increased due about equally to Connectivity and Microcontrollers, which together offset a decline in Processors. Operating profit increased primarily due to lower operating expenses.

##### Other

	2015	2014	Change
Revenue	\$1,874	\$2,201	(15 )%
Operating profit*	630	777	(19 )%
Operating profit % of revenue	33.6 %	35.3 %	

\*Includes Acquisition charges and Restructuring charges/other

Other revenue declined primarily due to custom ASICs. Revenue from DLP products also declined, but to a lesser extent. Operating profit declined primarily due to lower revenue and associated gross profit.

#### Financial condition

At the end of 2016, total cash (Cash and cash equivalents plus Short-term investments) was \$3.49 billion, an increase of \$272 million from the end of 2015.

Accounts receivable were \$1.27 billion at the end of 2016. This was an increase of \$102 million compared with the end of 2015. Days sales outstanding were 33 at the end of both 2016 and 2015.

Inventory was \$1.79 billion at the end of 2016. This was an increase of \$99 million from the end of 2015. Days of inventory at the end of 2016 were 126 compared with 115 at the end of 2015.

#### Liquidity and capital resources

Our primary source of liquidity is cash flow from operations. Additional sources of liquidity are Cash and cash equivalents, Short-term investments and a variable rate, revolving credit facility. Cash flows from operating activities for 2016 was \$4.61 billion, an increase of \$217 million from 2015 primarily due to an increase in Net income.

Our revolving credit facility is with a consortium of investment-grade banks and allows us to borrow up to \$2 billion until March 2021. This credit facility also serves as support for the issuance of commercial paper. As of December 31, 2016, our credit facility was undrawn, and we had no commercial paper outstanding.

In 2016, investing activities used \$650 million compared with \$302 million in 2015. For 2016, Capital expenditures were \$531 million compared with \$551 million in 2015. Capital expenditures in both periods were primarily for semiconductor manufacturing equipment. In 2016, we had purchases of short-term investments, net of proceeds, that used cash of \$113 million. In comparison, in 2015 we had proceeds from short-term investments, net of purchases, that provided cash of \$125 million. In 2015, we received \$110 million from asset sales, compared with none in 2016.

In 2016, financing activities used \$3.81 billion compared with \$4.29 billion in 2015. In 2016, we received proceeds of \$499 million from the issuance of fixed-rate, long-term debt (net of original issuance discount) and repaid \$1.00 billion of maturing debt. In 2015, we received proceeds of \$498 million from the issuance of fixed-rate, long-term debt (net of original issuance discount) and repaid \$1.00 billion of maturing debt. Dividends paid in 2016 were \$1.65 billion compared with \$1.44 billion in 2015, reflecting increases in the dividend rate, partially offset by fewer shares outstanding. During 2016, the quarterly dividend increased to \$0.50 from \$0.38 per share, resulting in an annualized dividend payment of \$2.00 per share. During 2015, we increased our quarterly dividend to \$0.38 from \$0.34 per share. In 2016, we used \$2.13 billion to repurchase 35.5 million shares of our common stock. This compared with \$2.74 billion used in 2015 to repurchase 51.4 million shares. Employee exercises of stock options are also reflected in Cash flows from financing activities. In 2016, these exercises provided cash proceeds of \$472 million compared with \$396 million in 2015.

We had \$1.15 billion of Cash and cash equivalents and \$2.34 billion of Short-term investments as of December 31, 2016, with our U.S. entities owning about 80 percent of these amounts combined at the end of 2016. We believe we have the necessary financial resources and operating plans to fund our working capital needs, capital expenditures, dividend and debt-related payments, and other business requirements for at least the next 12 months.

#### Non-GAAP financial information

This MD&A includes references to free cash flow and ratios based on that measure. These are financial measures that were not prepared in accordance with generally accepted accounting principles in the United States (GAAP). Free cash flow was calculated by subtracting Capital expenditures from the most directly comparable GAAP measure, Cash flows from operating activities (also referred to as cash flow from operations). We believe that free cash flow and the associated ratios provide insight into our liquidity, our cash-generating capability and the amount of cash potentially available to return to shareholders, as well as insight into our financial performance. These non-GAAP measures are supplemental to the comparable GAAP measures. Reconciliation to the most directly comparable GAAP-based measures is provided in the table below.



	For Years Ended		
	December 31,		
	2016	2015	2014
Cash flow from operations (GAAP)	\$4,614	\$4,397	\$4,054
Capital expenditures	(531 )	(551 )	(385 )
Free cash flow (non-GAAP)	\$4,083	\$3,846	\$3,669
Revenue	\$13,370	\$13,000	\$13,045
Cash flow from operations as a percent of revenue (GAAP)	34.5 %	33.8 %	31.1 %
Free cash flow as a percent of revenue (non-GAAP)	30.5 %	29.6 %	28.1 %

## Long-term contractual obligations

Contractual Obligations	Payments Due by Period				Total
	2017	2018/2019	2020/2021	Thereafter	
Long-term debt (a)	\$692	\$ 1,350	\$ 806	\$ 1,021	\$3,869
Purchase commitments (b)	132	173	26	5	336
Operating leases (c)	67	75	41	57	240
Deferred compensation plans (d)	18	38	37	99	192
Total (e)	\$909	\$ 1,636	\$ 910	\$ 1,182	\$4,637

- (a) Includes the related interest payments and amounts classified as the current portion of long-term debt, specifically obligations that will mature within 12 months.
- (b) Includes payments for software licenses and contractual arrangements with suppliers where there is a fixed, non-cancellable payment schedule or minimum payments due with a reduced delivery schedule. Excluded from the table are cancellable arrangements. However, depending on when certain purchase arrangements may be cancelled, an additional \$3 million of cancellation penalties may be required to be paid, which are not reflected in the table.
- (c) Includes minimum payments for leased facilities and equipment and purchases of industrial gases under contracts accounted for as operating leases.
- (d) Includes an estimate of payments for certain liabilities that existed at December 31, 2016.
- (e) Excluded from the table are \$243 million of uncertain tax liabilities under ASC 740, as well as any planned future funding contributions to retirement benefit plans. Amounts associated with uncertain tax liabilities have been excluded because of the difficulty in making reasonably reliable estimates of the timing of cash settlements with the respective taxing authorities. Regarding future funding of retirement benefit plans, we plan to contribute about \$100 million in 2017, but funding projections beyond 2017 are not practical to estimate due to the rules affecting tax-deductible contributions and the impact from the plans' asset performance, interest rates and potential U.S. and non-U.S. legislation.

## Critical accounting policies

In preparing our consolidated financial statements in conformity with accounting principles generally accepted in the United States, we use statistical analyses, estimates and projections that affect the reported amounts and related disclosures and may vary from actual results. We consider the following accounting policies to be those that are most important to the portrayal of our financial condition and that require the most subjective judgment. If actual results differ significantly from management's estimates and projections, there could be a significant effect on our financial statements.

## Revenue recognition

We recognize revenue from sales of our products, including sales to our distributors, when title and risk of loss pass, which usually occurs upon shipment or delivery to the customer or distributor, depending upon the terms of the sales order; when persuasive evidence of an arrangement exists; when sales amounts are fixed or determinable; and when collectability is reasonably assured. For sales to distributors, payment is due on our standard commercial terms and is not contingent upon resale of the products.

Revenue from sales of our products that are subject to inventory consignment agreements, including consignment arrangements with distributors, is recognized in accordance with the principles discussed above. Delivery occurs when the customer or distributor pulls product from consignment inventory that we store at designated locations.

We recognize revenue net of allowances, which are management's estimates of future credits to be granted to customers or distributors under programs common in the semiconductor industry. These allowances, which are not material, generally include volume-based incentives, product returns due to quality issues, incentives designed to maximize growth opportunities and special pricing arrangements. Allowances are based on analysis of historical data, current economic conditions and contractual terms and are recorded when revenue is recognized. We believe we can reasonably and reliably estimate allowances for credits to distributors in a timely manner.

In addition, we record allowances for accounts receivable that we estimate may not be collected. We monitor collectability of accounts receivable primarily through review of the accounts receivable aging. When collection is at risk, we assess the impact on amounts recorded for bad debts and, if necessary, will record a charge in the period such determination is made.

We recognize in revenue shipping fees, if any, received from customers. We include shipping and handling costs in cost of revenue. The majority of our customers pay these fees directly to third parties.

#### Income taxes

In determining Net income for financial statement purposes, we must make certain estimates and judgments in the calculation of tax provisions and the resultant tax liabilities, and in the recoverability of deferred tax assets that arise from temporary differences between the tax and financial statement recognition of revenue and expense.

In the ordinary course of global business, there may be many transactions and calculations where the ultimate tax outcome is uncertain. The calculation of tax liabilities involves dealing with uncertainties in the application of complex tax laws. We recognize potential liabilities for anticipated tax audit issues in the U.S. and other tax jurisdictions based on an estimate of the ultimate resolution of whether, and the extent to which, additional taxes will be due. Although we believe the estimates are reasonable, no assurance can be given that the final outcome of these matters will not be different than what is reflected in the historical income tax provisions and accruals.

As part of our financial process, we must assess the likelihood that our deferred tax assets can be recovered. If recovery is not likely, the provision for taxes must be increased by recording a reserve in the form of a valuation allowance for the deferred tax assets that are estimated not to be ultimately recoverable. In this process, certain relevant criteria are evaluated, including the existence of deferred tax liabilities that can be used to absorb deferred tax assets, the taxable income in prior years that can be used to absorb net operating losses and credit carrybacks, and taxable income in future years. Our judgment regarding future recoverability of our deferred tax assets based on these criteria may change due to various factors, including changes in U.S. or international tax laws and changes in market conditions and their impact on our assessment of taxable income in future periods. These changes, if any, may require material adjustments to the deferred tax assets and an accompanying reduction or increase in Net income in the period when such determinations are made. Also, our plans for the permanent reinvestment or eventual repatriation of the accumulated earnings of certain of our non-U.S. operations could change. Such changes could have a material effect on tax expense in future years.

In addition to the factors described above, the estimated annual tax rate, which excludes discrete items, reflected in forward-looking statements is based on then-current tax law. Significant changes in tax law enacted during the year could affect these estimates. Retroactive changes in tax law enacted subsequent to the end of a reporting period are reflected in the period of enactment.

#### Inventory valuation allowances

Inventory is valued net of allowances for unsalable or obsolete raw materials, work-in-process and finished goods. Statistical allowances are determined quarterly for raw materials and work-in-process based on historical disposals of inventory for salability and obsolescence reasons. For finished goods, quarterly statistical allowances are determined by comparing inventory levels of individual parts to historical shipments, current backlog and estimated future sales in order to identify inventory judged unlikely to be sold. A specific allowance for each material type will be carried if there is a significant event not captured by the statistical allowance. Examples are an end-of-life part or demand with imminent risk of cancellation. Allowances are also calculated quarterly for instances where inventoried costs for individual products are in excess of market prices for those products. Actual future write-offs of inventory for salability and obsolescence reasons may differ from estimates and calculations used to determine valuation allowances due to changes in customer demand, customer negotiations, technology shifts and other factors.

#### Changes in accounting standards

See Note 2 to the financial statements for information on new accounting standards.

#### Off-balance sheet arrangements

As of December 31, 2016, we had no significant off-balance sheet arrangements as defined in Item 303(a)(4)(ii) of SEC Regulation S-K.

#### Commitments and contingencies

See Note 12 to the financial statements for a discussion of our commitments and contingencies.

#### ITEM 7A. Quantitative and Qualitative Disclosures About Market Risk.

##### Foreign exchange risk

The U.S. dollar is the functional currency for financial reporting. Our non-U.S. entities own assets or liabilities denominated in U.S. dollars or other currencies. Exchange rate fluctuations can have a significant impact on taxable income in those jurisdictions, and consequently on our effective tax rate.

Our balance sheet also reflects amounts remeasured from non-U.S. dollar currencies. Because most of the aggregate non-U.S. dollar balance sheet exposure is hedged by forward currency exchange contracts, based on year-end 2016 balances and currency exchange rates, a hypothetical 10 percent plus or minus fluctuation in non-U.S. currency exchange rates relative to the U.S. dollar would result in a pre-tax currency exchange gain or loss of about \$1 million.

We use these forward currency exchange contracts to reduce the earnings impact exchange rate fluctuations may have on our non-U.S. dollar net balance sheet exposures. For example, at year-end 2016, we had forward currency exchange contracts outstanding with a notional value of \$494 million to hedge net balance sheet exposures (including \$158 million to sell Japanese yen and \$123 million to sell euros). Similar hedging activities existed at year-end 2015.

#### Interest rate risk

We have the following potential exposure to changes in interest rates: (1) the effect of changes in interest rates on the fair value of our investments in cash equivalents and short-term investments, which could produce a gain or a loss; and (2) the effect of changes in interest rates on the fair value of our debt.

As of December 31, 2016, a hypothetical 100 basis point increase in interest rates would decrease the fair value of our investments in cash equivalents and short-term investments by \$7 million and decrease the fair value of our long-term debt by \$104 million. Because interest rates on our long-term debt are fixed, changes in interest rates would not affect the cash flows associated with long-term debt.

#### Equity risk

Long-term investments at year-end 2016 include the following:

• Investments in mutual funds – includes mutual funds that were selected to generate returns that offset changes in certain liabilities related to deferred compensation arrangements. The mutual funds hold a variety of debt and equity investments.

• Investments in venture capital funds – includes investments in limited partnerships (accounted for under either the equity or cost method).

• Equity investments – includes non-marketable (non-publicly traded) equity securities.

Investments in mutual funds are stated at fair value. Changes in prices of the mutual fund investments are expected to offset related changes in deferred compensation liabilities such that a 10 percent increase or decrease in the investments' fair values would not materially affect operating results. Non-marketable equity securities and some venture capital funds are stated at cost. Impairments deemed to be other-than-temporary are expensed in Net income. Investments in the remaining venture capital funds are stated using the equity method. See Note 8 to the financial statements for details of equity and other long-term investments.

ITEM 8. Financial Statements and Supplementary Data.

List of Financial Statements (Item 15(a))

Income for each of the three years in the period ended December 31, 2016  
Comprehensive income for each of the three years in the period ended December 31, 2016  
Balance sheets at December 31, 2016 and 2015  
Cash flows for each of the three years in the period ended December 31, 2016  
Stockholders' equity for each of the three years in the period ended December 31, 2016

Schedules have been omitted because the required information is not present or not present in amounts sufficient to require submission of the schedule, or because the information required is included in the consolidated financial statements or the notes thereto.

Consolidated Statements of Income (Millions of dollars, except share and per-share amounts)	For Years Ended December 31,		
	2016	2015	2014
Revenue	\$ 13,370	\$ 13,000	\$ 13,045
Cost of revenue (COR)	5,130	5,440	5,618
Gross profit	8,240	7,560	7,427
Research and development (R&D)	1,370	1,280	1,358
Selling, general and administrative (SG&A)	1,767	1,748	1,843
Acquisition charges	319	329	330
Restructuring charges/other	(15 )	(71 )	(51 )
Operating profit	4,799	4,274	3,947
Other income (expense), net (OI&E)	211	32	21
Interest and debt expense	80	90	94
Income before income taxes	4,930	4,216	3,874
Provision for income taxes	1,335	1,230	1,053
Net income	\$ 3,595	\$ 2,986	\$ 2,821
Earnings per common share (EPS):			
Basic	\$ 3.54	\$ 2.86	\$ 2.61
Diluted	\$ 3.48	\$ 2.82	\$ 2.57
Average shares outstanding (millions):			
Basic	1,003	1,030	1,065
Diluted	1,021	1,043	1,080
Cash dividends declared per common share	\$ 1.64	\$ 1.40	\$ 1.24

As a result of accounting rule ASC 260, which requires a portion of Net income to be allocated to unvested restricted stock units (RSUs) on which we pay dividend equivalents, diluted EPS is calculated using the following:

Net income	\$ 3,595	\$ 2,986	\$ 2,821
Income allocated to RSUs	(44 )	(42 )	(43 )
Income allocated to common stock for diluted EPS	\$ 3,551	\$ 2,944	\$ 2,778

See accompanying notes.



Consolidated Statements of Comprehensive Income (Millions of dollars)	For Years Ended December 31,		
	2016	2015	2014
Net income	\$ 3,595	\$ 2,986	\$ 2,821
Other comprehensive income (loss)			
Net actuarial gains (losses) of defined benefit plans:			
Adjustment, net of tax benefit (expense) of \$6, \$36 and \$25	(43 )	(74 )	(46 )
Recognized within Net income, net of tax benefit (expense) of (\$25), (\$25) and (\$21)	51	53	42
Prior service (cost) credit of defined benefit plans:			
Adjustment, net of tax benefit (expense) of \$0, (\$11) and \$0	—	20	(1 )
Recognized within Net income, net of tax benefit (expense) of \$2, \$0 and \$0	(3 )	—	—
Derivative instruments:			
Recognized within Net income, net of tax benefit (expense) of \$0, (\$1) and (\$1)	1	1	1
Other comprehensive income (loss), net of taxes	6	—	(4 )
Total comprehensive income	\$ 3,601	\$ 2,986	\$ 2,817

See accompanying notes.

Consolidated Balance Sheets (Millions of dollars, except share amounts)	December 31,	
	2016	2015
<b>Assets</b>		
<b>Current assets:</b>		
Cash and cash equivalents	\$ 1,154	\$ 1,000
Short-term investments	2,336	2,218
Accounts receivable, net of allowances of (\$17) and (\$7)	1,267	1,165
Raw materials	102	109
Work in process	954	846
Finished goods	734	736
Inventories	1,790	1,691
Prepaid expenses and other current assets	910	1,000
<b>Total current assets</b>	<b>7,457</b>	<b>7,074</b>
Property, plant and equipment at cost	4,923	5,465
Accumulated depreciation	(2,411 )	(2,869 )
Property, plant and equipment, net	2,512	2,596
Long-term investments	235	221
Goodwill, net	4,362	4,362
Acquisition-related intangibles, net	1,264	1,583
Deferred income taxes	374	201
Capitalized software licenses, net	52	46
Overfunded retirement plans	96	85
Other assets	79	62
<b>Total assets</b>	<b>\$ 16,431</b>	<b>\$ 16,230</b>
<b>Liabilities and stockholders' equity</b>		
<b>Current liabilities:</b>		
Current portion of long-term debt	\$ 631	\$ 1,000
Accounts payable	396	386
Accrued compensation	710	664
Income taxes payable	83	95
Accrued expenses and other liabilities	444	410
<b>Total current liabilities</b>	<b>2,264</b>	<b>2,555</b>
Long-term debt	2,978	3,120
Underfunded retirement plans	129	196
Deferred income taxes	33	37
Deferred credits and other liabilities	554	376
<b>Total liabilities</b>	<b>5,958</b>	<b>6,284</b>
<b>Stockholders' equity:</b>		
Preferred stock, \$25 par value. Authorized – 10,000,000 shares		
Participating cumulative preferred. None issued.	—	—
Common stock, \$1 par value. Authorized – 2,400,000,000 shares		
Shares issued – 1,740,815,939	1,741	1,741
Paid-in capital	1,674	1,629
Retained earnings	33,107	31,176
Treasury common stock at cost		
Shares: 2016 – 744,831,978; 2015 – 729,547,527	(25,523)	(24,068)

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Accumulated other comprehensive income (loss), net of taxes (AOCI)	(526 )	(532 )
Total stockholders' equity	10,473	9,946
Total liabilities and stockholders' equity	\$ 16,431	\$ 16,230

See accompanying notes.

Consolidated Statements of Cash Flows (Millions of dollars)	For Years Ended December		
	31, 2016	2015	2014
<b>Cash flows from operating activities</b>			
Net income	\$ 3,595	\$ 2,986	\$ 2,821
<b>Adjustments to Net income:</b>			
Depreciation	605	766	850
Amortization of acquisition-related intangibles	319	319	321
Amortization of capitalized software	31	48	59
Stock compensation	252	286	277
Gains on sales of assets	(40 )	(85 )	(73 )
Deferred income taxes	(202 )	(55 )	(61 )
<b>Increase (decrease) from changes in:</b>			
Accounts receivable	(108 )	77	(49 )
Inventories	(99 )	93	(53 )
Prepaid expenses and other current assets	(81 )	94	65
Accounts payable and accrued expenses	72	(142 )	(132 )
Accrued compensation	36	7	89
Income taxes payable	333	11	(81 )
Changes in funded status of retirement plans	(73 )	(23 )	(58 )
Other	(26 )	15	79
Cash flows from operating activities	4,614	4,397	4,054
<b>Cash flows from investing activities</b>			
Capital expenditures	(531 )	(551 )	(385 )
Proceeds from asset sales	—	110	142
Purchases of short-term investments	(3,503)	(2,767)	(3,107)
Proceeds from short-term investments	3,390	2,892	2,966
Other	(6 )	14	7
Cash flows from investing activities	(650 )	(302 )	(377 )
<b>Cash flows from financing activities</b>			
Proceeds from issuance of long-term debt	499	498	498
Repayment of debt	(1,000)	(1,000)	(1,000)
Dividends paid	(1,646)	(1,444)	(1,323)
Stock repurchases	(2,132)	(2,741)	(2,831)
Proceeds from common stock transactions	472	396	554
Other	(3 )	(3 )	(3 )
Cash flows from financing activities	(3,810)	(4,294)	(4,105)
Net change in Cash and cash equivalents	154	(199 )	(428 )
Cash and cash equivalents at beginning of period	1,000	1,199	1,627
Cash and cash equivalents at end of period	\$ 1,154	\$ 1,000	\$ 1,199

See accompanying notes.



Consolidated Statements of Stockholders' Equity (Millions of dollars, except per-share amounts)	Common Stock	Paid-in Capital	Retained Earnings	Treasury Common Stock	AOCI
Balance, December 31, 2013	\$ 1,741	\$ 1,211	\$ 28,173	\$ (19,790)	\$ (528)
<b>2014</b>					
Net income	—	—	2,821	—	—
Dividends declared and paid (\$1.24 per share)	—	—	(1,323 )	—	—
Common stock issued for stock-based awards	—	(226 )	—	781	—
Stock repurchases	—	—	—	(2,831 )	—
Stock compensation	—	277	—	—	—
Excess tax benefit for stock compensation	—	110	—	—	—
Other comprehensive income (loss), net of taxes	—	—	—	—	(4 )
Dividend equivalents paid on restricted stock units	—	—	(18 )	—	—
Other	—	(4 )	—	—	—
Balance, December 31, 2014	1,741	1,368	29,653	(21,840)	(532)
<b>2015</b>					
Net income	—	—	2,986	—	—
Dividends declared and paid (\$1.40 per share)	—	—	(1,444 )	—	—
Common stock issued for stock-based awards	—	(116 )	—	513	—
Stock repurchases	—	—	—	(2,741 )	—
Stock compensation	—	286	—	—	—
Excess tax benefit for stock compensation	—	90	—	—	—
Other comprehensive income (loss), net of taxes	—	—	—	—	—
Dividend equivalents paid on restricted stock units	—	—	(19 )	—	—
Other	—	1	—	—	—
Balance, December 31, 2015	1,741	1,629	31,176	(24,068)	(532)
<b>2016</b>					
Net income	—	—	3,595	—	—
Dividends declared and paid (\$1.64 per share)	—	—	(1,646 )	—	—
Common stock issued for stock-based awards	—	(204 )	—	677	—
Stock repurchases	—	—	—	(2,132 )	—
Stock compensation	—	252	—	—	—
Other comprehensive income (loss), net of taxes	—	—	—	—	6
Dividend equivalents paid on restricted stock units	—	—	(18 )	—	—
Other	—	(3 )	—	—	—
Balance, December 31, 2016	\$ 1,741	\$ 1,674	\$ 33,107	\$ (25,523)	\$ (526)

See accompanying notes.



## Notes to financial statements

## 1. Description of business, including segment and geographic area information

We design, make and sell semiconductors to electronics designers and manufacturers all over the world. For 2016, we have two reportable segments, which are established along major categories of products as follows:

•Analog – consisting of the following product lines: High Volume Analog & Logic, Power Management, High Performance Analog and Silicon Valley Analog.

•Embedded Processing – consisting of the following product lines: Processors, Microcontrollers and Connectivity. We report the results of our remaining business activities in Other. Other includes operating segments that do not meet the quantitative thresholds for individually reportable segments and cannot be aggregated with other operating segments. Other includes DLP® products, calculators, custom ASICs and royalties received from agreements involving license rights to our patent portfolio.

In Other, we also include items that are not used in evaluating the results of or in allocating resources to our segments. Examples of these items include Acquisition charges (see Note 13); restructuring charges (see Note 3); and certain corporate-level items, such as litigation expenses, environmental costs, insurance settlements, and gains and losses from other activities, including asset dispositions. We allocate the remainder of our expenses associated with corporate activities to our operating segments based on specific methodologies, such as percentage of operating expenses or headcount.

Our centralized manufacturing and support organizations, such as facilities, procurement and logistics, provide support to our operating segments, including those in Other. Costs incurred by these organizations, including depreciation, are charged to the segments on a per-unit basis. Consequently, depreciation expense is not an independently identifiable component within the segments' results and, therefore, is not provided. The assets and liabilities associated with these organizations are included in Other.

With the exception of goodwill, we do not identify or allocate assets by operating segment, nor does the chief operating decision maker evaluate operating segments using discrete asset information. We have no material intersegment revenue. The accounting policies of the segments are the same as those described below in the summary of significant accounting policies and practices.

## Segment information

	For Years Ended December 31,		
	2016	2015	2014
Revenue:			
Analog	\$ 8,536	\$ 8,339	\$ 8,104
Embedded Processing	3,023	2,787	2,740
Other	1,811	1,874	2,201
Total revenue	\$ 13,370	\$ 13,000	\$ 13,045
Operating profit:			



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Analog	\$ 3,380	\$ 3,048	\$ 2,786
Embedded Processing	801	596	384
Other	618	630	777
Total operating profit	\$ 4,799	\$ 4,274	\$ 3,947

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## Geographic area information

The following geographic area information includes revenue, based on product shipment destination, and property, plant and equipment, based on physical location. The revenue information is not necessarily indicative of the geographic area in which the end applications containing our products are ultimately consumed because our products tend to be shipped to the locations where our customers manufacture their products. Specifically, many of our products are shipped to our customers in China who may include these parts in the manufacture of their own end products, which they may in turn export to their customers around the world.

	For Years Ended December 31,		
	2016	2015	2014
Revenue:			
United States	\$ 1,682	\$ 1,612	\$ 1,625
Asia (a)	8,024	7,910	7,915
Europe, Middle East and Africa	2,393	2,163	2,294
Japan	1,040	1,127	1,032
Rest of world	231	188	179
Total revenue	\$ 13,370	\$ 13,000	\$ 13,045

(a) Revenue from products shipped into China, including Hong Kong, was \$6.0 billion in 2016, \$5.8 billion in 2015 and \$5.7 billion in 2014.

	December 31,		
	2016	2015	2014
Property, plant and equipment, net:			
United States	\$ 1,372	\$ 1,370	\$ 1,436
Asia (a)	908	958	1,096
Europe, Middle East and Africa	98	130	162
Japan	115	122	124
Rest of world	19	16	22
Total property, plant and equipment, net	\$ 2,512	\$ 2,596	\$ 2,840

(a) Property, plant and equipment, net, at our two sites in the Philippines was \$412 million, \$471 million and \$546 million as of December 31, 2016, 2015 and 2014, respectively.

## Major customer

No end customer accounted for 10 percent or more of revenue in 2016 or 2014. In 2015, Apple Inc. accounted for approximately 11 percent of revenue, recognized primarily in our Analog segment.

## 2. Basis of presentation and significant accounting policies and practices

## Basis of presentation

The consolidated financial statements have been prepared in accordance with accounting principles generally accepted in the United States (GAAP). The basis of these financial statements is comparable for all periods presented herein, except for the adoption of a new accounting standard in the fourth quarter of 2016 related to stock compensation, which includes certain provisions applied prospectively. See Changes in accounting standards for further information.

The consolidated financial statements include the accounts of all subsidiaries. All intercompany balances and transactions have been eliminated in consolidation. All dollar amounts in the financial statements and tables in these notes, except per-share amounts, are stated in millions of U.S. dollars unless otherwise indicated. We have reclassified certain amounts in the prior periods' financial statements to conform to the 2016 presentation, retrospectively applying certain provisions of the new accounting standard related to stock compensation.

The preparation of financial statements requires the use of estimates from which final results may vary.

## Significant accounting policies and practices

### Revenue recognition

We recognize revenue from sales of our products, including sales to our distributors, when title and risk of loss pass, which usually occurs upon shipment or delivery to the customer or distributor, depending upon the terms of the sales order; when persuasive evidence of an arrangement exists; when sales amounts are fixed or determinable; and when collectability is reasonably assured. For sales to distributors, payment is due on our standard commercial terms and is not contingent upon resale of the products.

Revenue from sales of our products that are subject to inventory consignment agreements, including consignment arrangements with distributors, is recognized in accordance with the principles discussed above. Delivery occurs when the customer or distributor pulls product from consignment inventory that we store at designated locations.

We recognize revenue net of allowances, which are management's estimates of future credits to be granted to customers or distributors under programs common in the semiconductor industry. These allowances, which are not material, generally include volume-based incentives, product returns due to quality issues, incentives designed to maximize growth opportunities and special pricing arrangements. Allowances are based on analysis of historical data, current economic conditions and contractual terms and are recorded when revenue is recognized. We believe we can reasonably and reliably estimate allowances for credits to distributors in a timely manner.

In addition, we record allowances for accounts receivable that we estimate may not be collected. We monitor collectability of accounts receivable primarily through review of the accounts receivable aging. When collection is at risk, we assess the impact on amounts recorded for bad debts and, if necessary, will record a charge in the period such determination is made.

We recognize in revenue shipping fees, if any, received from customers. We include shipping and handling costs in COR. The majority of our customers pay these fees directly to third parties.

### Advertising costs

We expense advertising and other promotional costs as incurred. This expense was \$44 million in 2016, \$46 million in 2015 and \$45 million in 2014.

### Income taxes

We account for income taxes using an asset and liability approach. We record the amount of taxes payable or refundable for the current year and the deferred tax assets and liabilities for future tax consequences of events that have been recognized in the financial statements or tax returns. We record a valuation allowance when it is more likely than not that some or all of the deferred tax assets will not be realized.

### Other assessed taxes

Some transactions require us to collect taxes such as sales, value-added and excise taxes from our customers. These transactions are presented in our Consolidated Statements of Income on a net (excluded from revenue) basis.

### Earnings per share (EPS)

Unvested share-based payment awards that contain non-forfeitable rights to receive dividends or dividend equivalents, such as our restricted stock units (RSUs), are considered to be participating securities and the two-class method is used for purposes of calculating EPS. Under the two-class method, a portion of Net income is allocated to these participating securities and, therefore, is excluded from the calculation of EPS allocated to common stock, as shown in the table below.

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Computation and reconciliation of earnings per common share are as follows (shares in millions):

	For Years Ended December 31,			2015			2014		
	2016			2015			2014		
	Net	Shares	EPS	Net	Shares	EPS	Net	Shares	EPS
	Income			Income			Income		
<b>Basic EPS:</b>									
Net income	\$ 3,595			\$ 2,986			\$ 2,821		
Income allocated to RSUs	(45 )			(43 )			(44 )		
Income allocated to common stock for basic EPS calculation	\$ 3,550	1,003	\$ 3.54	\$ 2,943	1,030	\$ 2.86	\$ 2,777	1,065	\$ 2.61
<b>Adjustment for dilutive shares:</b>									
Stock compensation plans		18			13			15	
<b>Diluted EPS:</b>									
Net income	\$ 3,595			\$ 2,986			\$ 2,821		
Income allocated to RSUs	(44 )			(42 )			(43 )		
Income allocated to common stock for diluted EPS calculation	\$ 3,551	1,021	\$ 3.48	\$ 2,944	1,043	\$ 2.82	\$ 2,778	1,080	\$ 2.57

No potentially dilutive securities were excluded from the computation of diluted earnings per common share during 2016. Potentially dilutive securities representing 12 million and 11 million shares of common stock that were outstanding in 2015 and 2014, respectively, were excluded from the computation of diluted earnings per common share for these periods because their effect would have been anti-dilutive.

#### Investments

We present investments on our Consolidated Balance Sheets as cash equivalents, short-term investments or long-term investments. Specific details are as follows:

• **Cash equivalents and short-term investments:** We consider investments in debt securities with maturities of 90 days or less from the date of our investment to be cash equivalents. We consider investments in debt securities with maturities beyond 90 days from the date of our investment as being available for use in current operations and include them in short-term investments. The primary objectives of our cash equivalent and short-term investment activities are to preserve capital and maintain liquidity while generating appropriate returns.

• **Long-term investments:** Long-term investments consist of mutual funds, venture capital funds and non-marketable equity securities.

• **Classification of investments:** Depending on our reasons for holding the investment and our ownership percentage, we classify our investments as either available for sale, trading, equity method or cost method, which are more fully described in Note 8. We determine cost or amortized cost, as appropriate, on a specific identification basis.

#### Inventories

Inventories are stated at the lower of cost or estimated net realizable value. Cost is generally computed on a currently adjusted standard cost basis, which approximates cost on a first-in first-out basis. Standard cost is based on the normal utilization of installed factory capacity. Cost associated with underutilization of capacity is expensed as incurred.

Inventory held at consignment locations is included in our finished goods inventory. Consigned inventory was \$334 million and \$275 million as of December 31, 2016 and 2015, respectively.

We review inventory quarterly for salability and obsolescence. A statistical allowance is provided for inventory considered unlikely to be sold. The statistical allowance is based on an analysis of historical disposal activity, historical customer shipments, as well as estimated future sales. A specific allowance for each material type will be carried if there is a significant event not captured by the statistical allowance. We write off inventory in the period in which disposal occurs.

#### Property, plant and equipment; acquisition-related intangibles; and other capitalized costs

Property, plant and equipment are stated at cost and depreciated over their estimated useful lives using the straight-line method. Our cost basis includes certain assets acquired in business combinations that were initially recorded at fair value as of the date of acquisition. Leasehold improvements are amortized using the straight-line method over the shorter of the remaining lease term or the estimated useful lives of the improvements. We amortize acquisition-related intangibles on a straight-line basis over the estimated economic life of the assets. Capitalized software licenses generally are amortized on a straight-line basis over the term of the license. Fully depreciated or amortized assets are written off against accumulated depreciation or amortization.

#### Impairments of long-lived assets

We regularly review whether facts or circumstances exist that indicate the carrying values of property, plant and equipment or other long-lived assets, including intangible assets, are impaired. We assess the recoverability of assets by comparing the projected undiscounted net cash flows associated with those assets to their respective carrying amounts. Any impairment charge is based on the excess of the carrying amount over the fair value of those assets. Fair value is determined by available market valuations, if applicable, or by discounted cash flows.

#### Goodwill and indefinite-lived intangibles

Goodwill is not amortized but is reviewed for impairment annually or more frequently if certain impairment indicators arise. We perform our annual goodwill impairment test as of October 1 for our reporting units, which compares the fair value for each reporting unit to its associated carrying value, including goodwill. See Note 9 for additional information.

#### Foreign currency

The functional currency for our non-U.S. subsidiaries is the U.S. dollar. Accounts recorded in currencies other than the U.S. dollar are remeasured into the functional currency. Current assets (except inventories), deferred income taxes, other assets, current liabilities and long-term liabilities are remeasured at exchange rates in effect at the end of each reporting period. Property, plant and equipment with associated depreciation and inventories are valued at historical exchange rates. Revenue and expense accounts other than depreciation for each month are remeasured at the appropriate daily rate of exchange. Currency exchange gains and losses from remeasurement are credited or charged to OI&E. See Note 13 for additional information.

#### Derivatives and hedging

We use derivative financial instruments to manage exposure to foreign exchange risk. These instruments are primarily forward foreign currency exchange contracts, which are used as economic hedges to reduce the earnings impact that exchange rate fluctuations may have on our non-U.S. dollar net balance sheet exposures. Gains and losses from changes in the fair value of these forward foreign currency exchange contracts are credited or charged to OI&E. We do not apply hedge accounting to our foreign currency derivative instruments.

In connection with the issuance of long-term debt, we use financial derivatives such as treasury-rate lock agreements that are recognized in AOCI and amortized over the life of the related debt. The results of these derivative transactions have not been material.

We do not use derivatives for speculative or trading purposes.



Changes in accounting standards

Adopted standards for current period

In May 2015, the Financial Accounting Standards Board (FASB) issued Accounting Standards Update (ASU) No. 2015-07, Fair Value Measurement (Topic 820): Disclosures for Investments in Certain Entities That Calculate Net Asset Value per Share (or Its Equivalent). This standard removes the requirement to categorize within the fair value hierarchy certain investments for which fair value is not readily available but measured using the net asset value per share. This standard was effective beginning January 1, 2016, and prior period amounts have been retrospectively adjusted for consistency in presentation. Our adoption of this standard only affects our presentation of fair values of postretirement plan assets in Note 10 and does not impact our financial position and results of operations.

In March 2016, the FASB issued ASU No. 2016-09, Compensation – Stock Compensation (Topic 718): Improvements to Employee Share-Based Payment Accounting. This standard provides for several changes to the accounting for stock compensation, including a requirement that certain income-tax effects of awards be recognized in Net income in the period in which the awards are settled or vested, rather than recognized as Paid-in capital in the equity section of the balance sheet. The standard also changes the presentation of excess tax benefits and statutory tax withholdings in the statement of cash flows. This standard is effective for interim and annual periods beginning January 1, 2017; however, early adoption is permitted. We elected to adopt this standard in the fourth quarter of 2016, which requires us to reflect any adjustments as of January 1, 2016, the beginning of the annual period that includes the adoption. Each of the provisions within this standard has its own specified transition method; some have been applied prospectively and others have been applied on a retrospective basis.

The primary effects of early adoption on our financial statements are as follows:

**Income statement effects: Prospective basis –** Net excess tax benefits and deficiencies will now be included in Provision for income taxes, rather than in Paid-in capital. The new standard requires this to be adopted on a prospective basis, with an initial adjustment to interim periods in the year of adoption. We recorded adjustments within Provision for income taxes, rather than in Paid-in capital, for excess tax benefits of \$43 million, \$40 million and \$50 million for the first, second and third quarters of 2016, respectively. Excess tax benefits for the fourth quarter of 2016 were \$17 million, for a total of \$150 million recognized for all of 2016. See Note 6 for more information on income taxes. This standard also affects the average shares outstanding used in the diluted EPS calculation. The effects of these adjustments are shown in the table below. Results for prior annual periods were not affected.

**Cash flow effects: Retrospective basis –** Excess tax benefits are now included in Cash flows from operating activities rather than Cash flows from financing activities in our Consolidated Statements of Cash Flows. We elected to apply this change in presentation retrospectively, and thus, prior periods have been adjusted. Taxes paid for employee shares withheld upon the vesting of RSUs are now included in Cash flows from financing activities in our Consolidated Statements of Cash Flows. This change is required to be applied retrospectively, and thus, prior periods have been adjusted.

Under this standard, entities are permitted to make an accounting policy election to either estimate forfeitures on stock compensation awards, as previously required, or to recognize forfeitures as they occur. We elected not to change our policy on accounting for forfeitures and will continue to estimate forfeitures expected to occur in determining the amount of compensation cost to be recognized in each period.

The effects of our adoption of the new standard on our unaudited quarterly results for 2016 are as follows:

	Quarter		2nd		3rd	
	1st	Recast	Reported	Recast	Reported	Recast
<b>Income statement data:</b>						
Provision for income taxes	\$ 282	\$ 239	\$ 323	\$ 283	\$ 413	\$ 363
Net income	668	711	779	819	968	1,018
<b>Average diluted shares outstanding, in millions</b>						
Basic EPS	\$ 0.65	\$ 0.70	\$ 0.77	\$ 0.81	\$ 0.95	\$ 1.00
Diluted EPS	\$ 0.65	\$ 0.69	\$ 0.76	\$ 0.79	\$ 0.94	\$ 0.98
<b>Cash flow data:</b>						

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Cash flows from operating activities	\$ 547	\$ 653	\$ 1,069	\$ 1,109	\$ 1,413	\$ 1,465
Cash flows from financing activities	(839 )	(945 )	(1,180)	(1,220)	(676 )	(728 )

Certain annual cash flow information has also been adjusted to reflect select aspects of the new standard that are applied retrospectively. The impact to our previously reported annual results is as follows:

	For Years Ended December 31,			
	2015		2014	
	Reported	Recast	Reported	Recast
Cash flows from operating activities	\$ 4,268	\$ 4,397	\$ 3,892	\$ 4,054
Cash flows from financing activities	(4,165)	(4,294)	(3,943)	(4,105)

#### Standards not yet adopted

In May 2014, the FASB issued ASU No. 2014-09, Revenue from Contracts with Customers (Topic 606). This standard provides a single set of guidelines for revenue recognition to be used across all industries and requires additional disclosures. It is effective for annual and interim reporting periods beginning after December 15, 2017. This standard permits early adoption, but not before December 15, 2016, and permits the use of either the retrospective or cumulative effect transition method. We are currently evaluating the potential impact of this standard on our financial position and results of operations, as well as our selected transition method. Based on our preliminary assessment, we believe the new standard will not have a material impact on our financial position and results of operations, as we do not expect to change the manner or timing of recognizing revenue on a majority of our revenue transactions. We recognize revenue on sales to customers and distributors upon satisfaction of our performance obligations when the goods are shipped. For consignment sales, we recognize revenue when the goods are pulled from consignment inventory.

In January 2016, the FASB issued ASU No. 2016-01, Financial Instruments – Overall (Subtopic 825-10): Recognition and Measurement of Financial Assets and Financial Liabilities. Under this standard, all equity investments except those accounted for under the equity method are required to be measured at fair value. Equity investments that do not have a readily determinable fair value may, as a practical expedient, be measured at cost, adjusted for changes in observable prices minus impairment. This standard is effective for our interim and annual periods beginning January 1, 2018. We do not expect this standard to have a material impact on our financial position and results of operations, as nearly all of our equity investments are already recorded at fair value or under the equity method.

In February 2016, the FASB issued ASU No. 2016-02, Leases (Topic 842). This standard requires all leases that have a term of over 12 months to be recognized on the balance sheet with the liability for lease payments and the corresponding right-of-use asset initially measured at the present value of amounts expected to be paid over the term. Recognition of the costs of these leases on the income statement will be dependent upon their classification as either an operating or a financing lease. Costs of an operating lease will continue to be recognized as a single operating expense on a straight-line basis over the lease term. Costs for a financing lease will be disaggregated and recognized as both an operating expense (for the amortization of the right-of-use asset) and interest expense (for interest on the lease liability). This standard will be effective for our interim and annual periods beginning January 1, 2019, and must be applied on a modified retrospective basis to leases existing at, or entered into after, the beginning of the earliest comparative period presented in the financial statements. Early adoption is permitted. We are currently evaluating the timing of adoption and the potential impact of this standard on our financial position, but we do not expect it to have a material impact on our results of operations.

In June 2016, the FASB issued ASU No. 2016-13, Financial Instruments – Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments. This standard requires entities to use a current lifetime expected credit loss methodology to measure impairments of certain financial assets. Using this methodology will result in earlier recognition of losses than under the current incurred loss approach, which requires waiting to recognize a loss until it is probable of having been incurred. There are other provisions within the standard that affect how impairments of other financial assets may be recorded and presented, and that expand disclosures. This standard will be effective for our interim and annual periods beginning after December 15, 2019, and permits earlier application but not before December 15, 2018. The standard will be applied using a modified retrospective approach. We are currently evaluating the potential impact of this standard, but we do not expect it to have a material impact on our financial position and results of operations.

## 3. Restructuring charges/other

Restructuring charges/other is comprised of the following components:

	For Years Ended December 31,		
	2016	2015	2014
Restructuring charges (a)	\$ 25	\$ 14	\$ 20
Gains on sales of assets	(40)	(83)	(75)
Other	—	(2 )	4
Restructuring charges/other	\$ (15)	\$ (71)	\$ (51)

(a) Includes severance and benefits, accelerated depreciation, changes in estimates or other exit costs. Restructuring charges/other are recognized in Other for segment reporting purposes.

## Restructuring charges

In the fourth quarter of 2016, we recognized \$18 million of restructuring charges for severance and benefit costs related to the reorganization of product lines that we announced in January 2017. As of December 31, 2016, no payments have been made.

We announced in January 2016 our intentions to phase out through the end of 2018 a manufacturing facility in Greenock, Scotland. We are moving production from this facility to more cost-effective 200-millimeter TI manufacturing facilities in Germany, Japan and Maine. Total restructuring charges, primarily severance and related benefit costs associated with the expected reduction of about 350 jobs, are estimated to be about \$40 million. We recognized charges of \$7 million in 2016 and \$17 million in 2015. These charges were comprised of severance and benefits costs, as well as accelerated depreciation. The remaining charges are expected to be recognized through the end of 2018.

The 2014 restructuring charges were related to prior actions in Embedded Processing and Japan. These actions have been completed.

## Changes in accrued restructuring balances

	2016	2015	2014
Balance, January 1	\$ 32	\$ 57	\$ 161
Restructuring charges	25	14	20
Non-cash items (a)	(6 )	—	—
Payments	(11)	(39)	(124)
Balance, December 31	\$ 40	\$ 32	\$ 57

(a) Reflects charges for impacts of accelerated depreciation and changes in exchange rates.

## Gains on sales of assets

In 2016, we recognized a gain of \$40 million on the sale of intellectual property.

We recognized \$83 million of gains on sales of assets in 2015. This included \$48 million associated with the sale of a site in Plano, Texas, and \$34 million associated with the sale of a manufacturing facility in Houston, Texas.

We recognized \$75 million of gains on sales of assets in 2014. This consisted of \$30 million associated with the sale of a site in Nice, France; \$28 million associated with the sales of real estate in Santa Clara, California; and \$17 million of asset sales associated primarily with factory closures in Houston, Texas, and Hiji, Japan.

## 4. Stock compensation

We have stock options outstanding to participants under long-term incentive plans. We also have assumed stock options that were granted by companies that we later acquired. Unless the options are acquisition-related replacement options, the option price per share may not be less than the fair market value of our common stock on the date of the grant. The options have a 10-year term and generally vest ratably over four years. Our options continue to vest after

the option recipient retires.

We also have RSUs outstanding under long-term incentive plans. Each RSU represents the right to receive one share of TI common stock on the vesting date, which is generally four years after the date of grant. Upon vesting, the shares are issued without payment by the grantee. Our RSUs continue to vest after the recipient retires. Holders of RSUs receive an annual cash payment equivalent to the dividends paid on our common stock.

We have options and RSUs outstanding to non-employee directors under director compensation plans. The plans generally provide for annual grants of stock options and RSUs, a one-time grant of RSUs to each new non-employee director and the issuance of TI common stock upon the distribution of stock units credited to deferred compensation accounts established for such directors.

We also have an employee stock purchase plan under which options are offered to all eligible employees in amounts based on a percentage of the employee's compensation, subject to a cap. Under the plan, the option price per share is 85 percent of the fair market value on the exercise date, and options have a three-month term.

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Total stock compensation expense recognized is as follows:

	For Years Ended		
	December 31,		
	2016	2015	2014
COR	\$ 40	\$ 47	\$ 48
R&D	60	60	62
SG&A	152	169	156
Acquisition charges	—	10	11
Total	\$ 252	\$ 286	\$ 277

These amounts include expenses related to non-qualified stock options, RSUs and stock options offered under our employee stock purchase plan and are net of expected forfeitures.

We issue awards of non-qualified stock options with graded vesting provisions (e.g., 25 percent per year for four years). We recognize the related compensation expense on a straight-line basis over the minimum service period required for vesting of the award, adjusting for expected forfeiture activity. Awards issued to employees who are retirement eligible or nearing retirement eligibility are expensed on an accelerated basis.

Our RSUs generally vest four years after the date of grant. We recognize the related compensation expense on a straight-line basis over the vesting period, adjusting for expected forfeiture activity. RSUs issued to employees who are retirement eligible or nearing retirement eligibility are expensed on an accelerated basis.

#### Fair-value methods and assumptions

We account for all awards granted under our various stock compensation plans at fair value. We estimate the fair values for non-qualified stock options using the Black-Scholes-Merton option-pricing model with the following weighted average assumptions:

	For Years Ended December		
	31,		
	2016	2015	2014
Weighted average grant date fair value, per share	\$ 10.03	\$ 9.49	\$ 8.13
Weighted average assumptions used:			
Expected volatility	25 %	22 %	22 %
Expected lives (in years)	7.3	7.3	7.3
Risk-free interest rates	1.72 %	1.64 %	2.45 %
Expected dividend yields	2.87 %	2.52 %	2.72 %

We determine expected volatility on all options granted using available implied volatility rates. We believe that market-based measures of implied volatility are currently the best available indicators of the expected volatility used in these estimates.

We determine expected lives of options based on the historical option exercise experience of our optionees using a rolling 10-year average. We believe the historical experience method is the best estimate of future exercise patterns



currently available.

Risk-free interest rates are determined using the implied yield currently available for zero-coupon U.S. government issues with a remaining term equal to the expected life of the options.

Expected dividend yields are based on the annualized approved quarterly dividend rate and the current market price of our common stock at the time of grant. No assumption for a future dividend rate change is included unless there is an approved plan to change the dividend in the near term.

The fair value per share of RSUs is determined based on the closing price of our common stock on the date of grant.

Our employee stock purchase plan is a discount-purchase plan and consequently the Black-Scholes-Merton option-pricing model is not used to determine the fair value per share of these awards. The fair value per share under this plan equals the amount of the discount.

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Long-term incentive and director compensation plans

Stock option and RSU transactions under our long-term incentive and director compensation plans are as follows:

	Stock Options		RSUs	
	Shares	Weighted Average Exercise Price	Shares	Weighted Average Grant Date Fair Value
Outstanding grants, December 31, 2015	56,773,983	\$ 37.45	16,055,542	\$ 38.51
Granted	10,974,304	53.02	2,337,976	53.98
Vested RSUs	—	—	(5,639,666 )	31.64
Forfeited and expired	(965,893 )	48.12	(421,473 )	42.63
Exercised	(14,516,606)	32.51	—	—
Outstanding grants, December 31, 2016	52,265,788	41.89	12,332,379	44.44

The weighted average grant date fair values per share of RSUs granted in 2016, 2015 and 2014 were \$53.98, \$53.22 and \$44.71, respectively. In 2016, 2015 and 2014, the total grant date fair values of shares vested from RSU grants were \$178 million, \$114 million and \$133 million, respectively.

Summarized information about stock options outstanding as of December 31, 2016, is as follows:

Exercise Price Range	Stock Options Outstanding			Options Exercisable	
	Outstanding (Shares)	Weighted Average Remaining Contractual Life (Years)	Weighted Average Exercise Price per Share	Exercisable (Shares)	Weighted Average Exercise Price per Share
\$ 14.47 to 20.00	1,996,801	2.1	\$ 14.96	1,996,801	\$ 14.96
20.01 to 30.00	5,130,177	2.6	24.59	5,130,177	24.59
30.01 to 40.00	14,126,454	5.3	33.06	11,328,597	33.12
40.01 to 50.00	9,854,196	7.1	44.10	3,544,639	44.10
50.01 to 60.00	21,103,396	8.6	53.44	2,017,172	53.96
60.01 to 71.27	54,764	9.7	71.00	—	—
14.47 to 71.27	52,265,788	6.6	41.89	24,017,386	33.16

In 2016, 2015 and 2014, the aggregate intrinsic values (i.e., the difference in the closing market price on the date of exercise and the exercise price paid by the optionee) of options exercised were \$424 million, \$290 million and \$367 million, respectively.

Summarized information as of December 31, 2016, about outstanding stock options that are vested and expected to vest, as well as stock options that are currently exercisable, is as follows:

	Outstanding	
	Stock Options (Fully Vested and Expected to Vest) (a)	Options Exercisable
Number of outstanding (shares)	50,994,139	24,017,386
Weighted average remaining contractual life (in years)	6.5	4.9
Weighted average exercise price per share	\$ 41.63	\$ 33.16
Intrinsic value (millions of dollars)	\$ 1,598	\$ 956

(a) Includes effects of expected forfeitures of approximately 1 million shares. Excluding the effects of expected forfeitures, the aggregate intrinsic value of stock options outstanding was \$1,624 million. As of December 31, 2016, the total future compensation cost related to equity awards not yet recognized in our Consolidated Statements of Income was \$250 million, consisting of \$111 million related to unvested stock options and \$139 million related to unvested RSUs. The \$250 million is expected to be recognized as follows: \$129 million in 2017, \$80 million in 2018, \$37 million in 2019 and \$4 million in 2020.

## Director deferred compensation

Directors who retire or resign from the board may receive stock distributions for compensation they elected to defer. Director deferred stock activity is as follows:

	Director Deferred Stock (Shares)
Outstanding, December 31, 2015	142,913
New shares deferred	14,319
Issued	(13,587 )
Outstanding, December 31, 2016	143,645

## Employee stock purchase plan

Options outstanding under the employee stock purchase plan as of December 31, 2016, had an exercise price equal to 85 percent of the fair market value of TI common stock on the date of automatic exercise. The automatic exercise occurred on January 3, 2017, resulting in an exercise price of \$62.55 per share. Of the total outstanding options, none were exercisable as of December 31, 2016.

Employee stock purchase plan transactions are as follows:

	Employee Stock Purchase Plan (Shares)	Exercise Price
Outstanding grants, December 31, 2015	372,566	\$ 46.19
Granted	1,273,036	55.51
Exercised	(1,362,202)	51.50
Outstanding grants, December 31, 2016	283,400	62.55

The weighted average grant date fair values per share of options granted under the employee stock purchase plans in 2016, 2015 and 2014 were \$9.79, \$7.89 and \$7.34, respectively. In 2016, 2015 and 2014, the total intrinsic value of options exercised under these plans was \$12 million per year.

## Effect on shares outstanding and treasury shares

Treasury shares were acquired in connection with the board-authorized stock repurchase program. As of December 31, 2016, \$5.80 billion of stock repurchase authorizations remain, and no expiration date has been specified.

Our current practice is to issue shares of common stock from treasury shares upon exercise of stock options, distribution of director deferred compensation and vesting of RSUs. The following table reflects the changes in our treasury shares:

	Stock Options	RSUs	Treasury Shares
Balance, December 31, 2013			658,012,970
Repurchases			61,665,209
Shares used for:			
Stock options/RSUs	(19,503,382)	(5,609,627)	
Stock applied to exercises or taxes	6,618	1,408,701	
ESPP	(1,784,184 )	—	
Director deferred stock	—	—	(7,178 )
Total issued	(21,280,948)	(4,200,926)	(25,481,874 )
Balance, December 31, 2014			694,189,127
Repurchases			51,384,339
Shares used for:			
Stock options/RSUs	(11,953,455)	(3,386,415)	
Stock applied to exercises or taxes	8,562	845,164	
ESPP	(1,532,264 )	—	
Director deferred stock	—	—	(7,531 )
Total issued	(13,477,157)	(2,541,251)	(16,018,408 )
Balance, December 31, 2015			729,547,527
Repurchases			35,480,036
Shares used for:			
Stock options/RSUs	(14,516,606)	(5,639,666)	
Stock applied to exercises or taxes	—	1,336,476	
ESPP	(1,362,202 )	—	
Director deferred stock	—	—	(13,587 )
Total issued	(15,878,808)	(4,303,190)	(20,181,998 )
Balance, December 31, 2016			744,831,978

Shares available for future grants and reserved for issuance are as follows:

Shares	December 31, 2016			Total
	Long-Term Incentive Plans	Director Compensation Plans (a)	Employee Stock Purchase Plan	
Reserved for issuance	123,296,771	2,341,272	36,670,572	162,308,615
Shares to be issued upon exercise of	(63,715,186 )	(1,026,626 )	(283,400 )	(65,025,212 )

outstanding options and RSUs

Available for future grants	59,581,585	1,314,646	36,387,172	97,283,403
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(a) Includes 143,645 shares credited to directors' deferred stock accounts that settle in shares of TI common stock.

These shares are not included as grants outstanding as of December 31, 2016.

The effects on cash flows are as follows:

	For Years Ended		
	December 31,		
	2016	2015	2014
Proceeds from common stock transactions (a)	\$ 472	\$ 396	\$ 554
Tax benefit realized from stock compensation	\$ 255	\$ 171	\$ 218
Reduction to deferred income tax asset	(105)	(81)	(108)
Excess tax benefit for stock compensation	\$ 150	\$ 90	\$ 110

(a) Net of taxes paid for employee shares withheld of \$70 million in 2016, \$46 million in 2015 and \$62 million in 2014.

## 5. Profit sharing plans

Profit sharing benefits are generally formulaic and determined by one or more subsidiary or company-wide financial metrics. We pay profit sharing benefits primarily under the company-wide TI Employee Profit Sharing Plan. This plan provides for profit sharing to be paid based solely on TI's operating margin for the full calendar year. Under this plan, TI must achieve a minimum threshold of 10 percent operating margin before any profit sharing is paid. At 10 percent operating margin, profit sharing will be 2 percent of eligible payroll. The maximum amount of profit sharing available under the plan is 20 percent of eligible payroll, which is paid only if TI's operating margin is at or above 35 percent for a full calendar year.

We recognized \$346 million, \$309 million and \$269 million of profit sharing expense under the TI Employee Profit Sharing Plan in 2016, 2015 and 2014, respectively.

## 6. Income taxes

## Income before Income Taxes

	For Years Ended December 31,		
	2016	2015	2014
U.S.	\$ 3,953	\$ 3,218	\$ 2,684
Non-U.S.	977	998	1,190
Total	\$ 4,930	\$ 4,216	\$ 3,874

## Provision (Benefit) for Income Taxes

	For Years Ended December 31,								
	2016			2015			2014		
	Current	Deferred	Total	Current	Deferred	Total	Current	Deferred	Total
U.S. federal	\$ 1,289	\$ (122 )	\$ 1,167	\$ 1,110	\$ (72 )	\$ 1,038	\$ 911	\$ (73 )	\$ 838
Non-U.S.	238	(80 )	158	168	14	182	194	11	205
U.S. state	10	—	10	7	3	10	9	1	10
Total	\$ 1,537	\$ (202 )	\$ 1,335	\$ 1,285	\$ (55 )	\$ 1,230	\$ 1,114	\$ (61 )	\$ 1,053

Principal reconciling items from the U.S. statutory income tax rate to the effective tax rate (Provision for income taxes as a percentage of Income before income taxes) are as follows:

	For Years Ended December		
	31,		
	2016	2015	2014
U.S. statutory income tax rate	35.0%	35.0%	35.0%
Non-U.S. effective tax rates	(3.7 )	(4.0 )	(5.5 )
U.S. excess tax benefit for stock compensation (a)	(3.0 )	—	—
U.S. tax benefit for manufacturing	(1.5 )	(1.6 )	(1.3 )
U.S. R&D tax credit	(1.2 )	(1.3 )	(1.5 )
U.S. non-deductible expenses	0.3	0.3	0.2
Impact of changes to uncertain tax positions	0.6	0.2	0.1
Other	0.6	0.6	0.2
Effective tax rate	27.1 %	29.2 %	27.2 %

(a) This is related to the adoption of ASU 2016-09 as discussed in Note 2.

Our effective tax rate benefits from lower rates (compared with the U.S. statutory income tax rate) applicable to our operations in many of the jurisdictions in which we operate, and from U.S. tax benefits. These lower non-U.S. tax rates are generally statutory in nature, without expiration and available to companies that operate in those taxing jurisdictions. Also included in the non-U.S. effective tax rates reconciling item above are benefits from tax holidays of \$30 million, \$50 million and \$44 million in 2016, 2015 and 2014, respectively. The tax benefits relate to our operations in Malaysia and the Philippines, and expire in 2018 and 2017, respectively. The terms of the Malaysia tax holiday are currently under governmental review as required for the end of the first five years of the holiday period.



The primary components of deferred income tax assets and liabilities are as follows:

	December 31,	
	2016	2015
<b>Deferred income tax assets:</b>		
Stock compensation	\$ 220	\$ 244
Accrued expenses	219	215
Deferred loss and tax credit carryforwards	214	226
Inventories and related reserves	145	147
Retirement costs for defined benefit and retiree health care	82	87
Other	81	101
Total deferred income tax assets, before valuation allowance	961	1,020
Valuation allowance	(128)	(186)
Total deferred income tax assets, after valuation allowance	833	834
<b>Deferred income tax liabilities:</b>		
Acquisition-related intangibles and fair-value adjustments	(460)	(565)
International earnings	(32)	(105)
Total deferred income tax liabilities	(492)	(670)
Net deferred income tax asset	\$ 341	\$ 164

The deferred income tax assets and liabilities based on tax jurisdictions are presented on our Consolidated Balance Sheets as follows:

	December 31,	
	2016	2015
Deferred income tax assets	\$ 374	\$ 201
Deferred income tax liabilities	(33)	(37)
Net deferred income tax asset	\$ 341	\$ 164

We make an ongoing assessment regarding the realization of U.S. and non-U.S. deferred tax assets. This assessment is based on our evaluation of relevant criteria, including the existence of deferred tax liabilities that can be used to absorb deferred tax assets, taxable income in prior carryback years and expectations for future taxable income. Changes in valuation allowance balances in 2016 and 2015 of \$58 million and \$9 million, respectively, impacted Net income by \$63 million and \$0 million, respectively.

We have U.S. and non-U.S. tax loss carryforwards of approximately \$12 million, none of which will expire before the year 2026.

A provision has been made for deferred taxes on undistributed earnings of non-U.S. subsidiaries to the extent that dividend payments from these subsidiaries are expected to result in additional tax liability. The remaining undistributed earnings of approximately \$9.03 billion as of December 31, 2016, have been indefinitely reinvested outside of the United States; therefore, no U.S. tax provision has been made for taxes due upon remittance of these earnings. The indefinitely reinvested earnings of our non-U.S. subsidiaries are primarily invested in working capital

and property, plant and equipment. Determination of the amount of unrecognized deferred income tax liability is not practical because of the complexities associated with its hypothetical calculation.

Cash payments made for income taxes, net of refunds, were \$1.15 billion, \$1.17 billion and \$1.10 billion in 2016, 2015 and 2014, respectively.

#### Uncertain tax positions

We operate in a number of tax jurisdictions, and our income tax returns are subject to examination by tax authorities in those jurisdictions who may challenge any item on these tax returns. Because the matters challenged by authorities are typically complex, their ultimate outcome is uncertain. Before any benefit can be recorded in our financial statements, we must determine that it is “more likely than not” that a tax position will be sustained by the appropriate tax authorities. We recognize accrued interest related to uncertain tax positions and penalties as components of OI&E.

The changes in the total amounts of uncertain tax positions are as follows:

	2016	2015	2014
Balance, January 1	\$ 84	\$ 108	\$ 91
Additions based on tax positions related to the current year	4	11	10
Additions for tax positions of prior years	189	3	52
Reductions for tax positions of prior years	(2 )	(21 )	(9 )
Settlements with tax authorities	(32 )	(17 )	(36 )
Balance, December 31	\$ 243	\$ 84	\$ 108
Interest income (expense) recognized in the year ended December 31	\$ 4	\$ 8	\$ 6
Interest receivable (payable) as of December 31	\$ 13	\$ 9	\$ —

The liability for uncertain tax positions is a component of Deferred credits and other liabilities on our Consolidated Balance Sheets.

All of the \$243 million liability for uncertain tax positions as of December 31, 2016, is comprised of positions that, if recognized, would benefit the effective tax rate. If these tax liabilities are ultimately realized, \$12 million of existing deferred tax assets would also be realized, related to refunds from counterparty jurisdictions resulting from procedures for relief from double taxation.

All of the \$84 million liability for uncertain tax positions as of December 31, 2015, is comprised of positions that, if recognized, would benefit the effective tax rate. If these tax liabilities are ultimately realized, \$12 million of existing deferred tax assets would also be realized, related to refunds from counterparty jurisdictions resulting from procedures for relief from double taxation.

As of December 31, 2016, the statute of limitations remains open for U.S. federal tax returns for 2010 and following years. Audit activities related to our U.S. federal tax returns through 2012 have been completed except for certain pending tax treaty procedures for relief from double taxation. The procedures for relief from double taxation pertain to U.S. federal tax returns for the years 2006 through 2011.

In non-U.S. jurisdictions, the years open to audit represent the years still open under the statute of limitations. With respect to major jurisdictions outside the United States, our subsidiaries are no longer subject to income tax audits for years before 2007.

## 7. Financial instruments and risk concentration

### Financial instruments

We hold derivative financial instruments such as forward foreign currency exchange contracts, the fair value of which was not material as of December 31, 2016. Our forward foreign currency exchange contracts outstanding as of December 31, 2016, had a notional value of \$494 million to hedge our non-U.S. dollar net balance sheet exposures, including \$158 million to sell Japanese yen and \$123 million to sell euros.

Our investments in cash equivalents, short-term investments and certain long-term investments, as well as our postretirement plan assets and deferred compensation liabilities, are carried at fair value. The carrying values for other current financial assets and liabilities, such as accounts receivable and accounts payable, approximate fair value due to the short maturity of such instruments. The carrying value of our long-term debt approximates the fair value as measured using broker-dealer quotes, which are Level 2 inputs. See Note 8 for a description of fair value and the definition of Level 2 inputs.

#### Risk concentration

We are subject to counterparty risks from financial institutions, customers and issuers of debt securities. Financial instruments that could subject us to concentrations of credit risk are primarily cash deposits, cash equivalents, short-term investments and accounts receivable. To manage our credit risk exposure, we place cash investments in investment-grade debt securities and limit the amount of credit exposure to any one issuer. We also limit counterparties on cash deposits and financial derivative contracts to financial institutions with investment-grade ratings.

Concentrations of credit risk with respect to accounts receivable are limited due to our large number of customers and their dispersion across different industries and geographic areas. We maintain allowances for expected returns, disputes, adjustments, incentives and collectability. These allowances are deducted from accounts receivable on our Consolidated Balance Sheets.

Details of these accounts receivable allowances are as follows:

	2016	2015	2014
Balance, January 1	\$ 7	\$ 12	\$ 22
Additions charged (credited) to operating results	10	(5 )	(9 )
Recoveries and write-offs, net	—	—	(1 )
Balance, December 31	\$ 17	\$ 7	\$ 12

## 8. Valuation of debt and equity investments and certain liabilities

### Debt and equity investments

We classify our investments as available for sale, trading, equity method or cost method. Most of our investments are classified as available for sale.

Available-for-sale and trading securities are stated at fair value, which is generally based on market prices or broker quotes. See the fair-value discussion below. Unrealized gains and losses on available-for-sale securities are recorded as an increase or decrease, net of taxes, in AOCI on our Consolidated Balance Sheets. We record other-than-temporary impairments on available-for-sale securities in OI&E in our Consolidated Statements of Income.

We classify certain mutual funds as trading securities. These mutual funds hold a variety of debt and equity investments intended to generate returns that offset changes in certain deferred compensation liabilities. We record changes in the fair value of these mutual funds and the related deferred compensation liabilities in SG&A.

Our other investments are not measured at fair value but are accounted for using either the equity method or cost method. These investments consist of interests in venture capital funds and other non-marketable equity securities. Gains and losses from equity-method investments are reflected in OI&E based on our ownership share of the investee's financial results. Gains and losses on cost-method investments are recorded in OI&E when realized or when an impairment of the investment's value is warranted based on our assessment of the recoverability of each investment.

Details of our investments are as follows:

December 31, 2016			December 31, 2015		
Cash			Cash		
and			and		
Cash	Short-Term	Long-Term	Cash	Short-Term	Long-Term

	Equivalents	Investments	Investments	Equivalents	Investments	Investments
Measured at fair value:						
Available-for-sale securities:						
Money market funds	\$ 346	\$ —	\$ —	\$ 395	\$ —	\$ —
Corporate obligations	107	544	—	132	285	—
U.S. government agency and Treasury securities	490	1,792	—	245	1,933	—
Trading securities:						
Mutual funds	—	—	201	—	—	187
Total	943	2,336	201	772	2,218	187
Other measurement basis:						
Equity-method investments	—	—	25	—	—	25
Cost-method investments	—	—	9	—	—	9
Cash on hand	211	—	—	228	—	—
Total	\$ 1,154	\$ 2,336	\$ 235	\$ 1,000	\$ 2,218	\$ 221

As of December 31, 2016 and 2015, unrealized gains and losses associated with our available-for-sale investments were not material. We did not recognize any credit losses related to available-for-sale investments in 2016, 2015 and 2014.

In 2016, 2015 and 2014, the proceeds from sales, redemptions and maturities of short-term available-for-sale investments were \$3.39 billion, \$2.89 billion and \$2.97 billion, respectively. Gross realized gains and losses from these sales were not material.

The following table presents the aggregate maturities of investments in debt securities classified as available for sale as of December 31, 2016:

Due	Fair Value
One year or less	\$ 3,254
One to two years	25

Other-than-temporary declines and impairments in the values of these investments recognized in OI&E were not material in 2016, 2015 and 2014.

#### Fair-value considerations

We measure and report certain financial assets and liabilities at fair value on a recurring basis. Fair value is defined as the price that would be received to sell an asset or paid to transfer a liability (an exit price) in the principal or most advantageous market for the asset or liability in an orderly transaction between market participants on the measurement date.

The three-level hierarchy discussed below indicates the extent and level of judgment used to estimate fair-value measurements.

Level 1 – Uses unadjusted quoted prices that are available in active markets for identical assets or liabilities as of the reporting date.

- Level 2 – Uses inputs other than Level 1 that are either directly or indirectly observable as of the reporting date through correlation with market data, including quoted prices for similar assets and liabilities in active markets and quoted prices in markets that are not active. Level 2 also includes assets and liabilities that are valued using models or other pricing methodologies that do not require significant judgment since the input assumptions used in the models, such as interest rates and volatility factors, are corroborated by readily observable data. We utilize a third-party data service to provide Level 2 valuations. We verify these valuations for reasonableness relative to unadjusted quotes obtained from brokers or dealers based on observable prices for similar assets in active markets.

Level 3 – Uses inputs that are unobservable, supported by little or no market activity and reflect the use of significant management judgment. These values are generally determined using pricing models that utilize management estimates of market participant assumptions. As of December 31, 2016 and 2015, we had no Level 3 assets or liabilities, other than certain assets held by our postretirement plans.

The following are our assets and liabilities that were accounted for at fair value on a recurring basis. These tables do not include cash on hand, assets held by our postretirement plans, or assets and liabilities that are measured at historical cost or any basis other than fair value.

December 31, 2016			December 31, 2015		
	Level			Level	
Level 1	2	Total	Level 1	2	Total

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Assets:						
Money market funds	\$ 346	\$ —	\$ 346	\$ 395	\$ —	\$ 395
Corporate obligations	—	651	651	—	417	417
U.S. government agency and Treasury securities	2,042	240	2,282	1,828	350	2,178
Mutual funds	201	—	201	187	—	187
Total assets	\$ 2,589	\$ 891	\$ 3,480	\$ 2,410	\$ 767	\$ 3,177
Liabilities:						
Deferred compensation	\$ 218	\$ —	\$ 218	\$ 198	\$ —	\$ 198
Total liabilities	\$ 218	\$ —	\$ 218	\$ 198	\$ —	\$ 198



## 9. Goodwill and acquisition-related intangibles

Goodwill, net, by segment as of December 31, 2016 and 2015, is as follows:

	Goodwill
Analog	\$ 4,158
Embedded Processing	172
Other	32
Total	\$ 4,362

We perform our annual goodwill impairment test as of October 1 and determine whether the fair value of each of our reporting units is in excess of its carrying value. Determination of fair value is based upon management estimates and judgment, using unobservable inputs in discounted cash flow models to calculate the fair value of each reporting unit. These unobservable inputs are considered Level 3 measurements, as described in Note 8. In 2016, 2015 and 2014, we determined no impairment was indicated.

The components of Acquisition-related intangibles, net, are as follows:

Acquisition-Related Intangibles	Amortization Period (Years)	December 31, 2016			December 31, 2015		
		Gross Carrying Amount	Accumulated Amortization	Net	Gross Carrying Amount	Accumulated Amortization	Net
Developed technology	7 - 10	\$ 2,130	\$ 1,144	\$ 986	\$ 2,131	\$ 928	\$ 1,203
Customer relationships	8	810	532	278	810	431	379
Other intangibles	5	—	—	—	3	2	1
Total		\$ 2,940	\$ 1,676	\$ 1,264	\$ 2,944	\$ 1,361	\$ 1,583

Amortization of acquisition-related intangibles was \$319 million, \$319 million and \$321 million in 2016, 2015 and 2014, respectively, primarily related to developed technology. Fully amortized assets are written off against accumulated amortization. Future estimated amortization of acquisition-related intangibles is as follows:

Amortization of	
Acquisition-Related Intangibles	
2017	\$ 318
2018	318
2019	288
2020	198
2021	142
Thereafter	—

## 10. Postretirement benefit plans

### Plan descriptions

We have various employee retirement plans, including defined contribution, defined benefit and retiree health care benefit plans. For qualifying employees, we offer deferred compensation arrangements.

### U.S. retirement plans

Our principal retirement plans in the U.S. are a defined contribution plan; an enhanced defined contribution plan; and qualified and non-qualified defined benefit pension plans. The defined benefit plans were closed to new participants in 1997, and then current participants were allowed to make a one-time election to continue accruing a benefit in the plans, or to cease accruing a benefit and instead to participate in the enhanced defined contribution plan described below.

Both defined contribution plans offer an employer-matching savings option that allows employees to make pre-tax contributions to various investment choices. Employees who elected to continue accruing a benefit in the qualified defined benefit pension plans may also participate in the defined contribution plan, where employer-matching contributions are provided for up to 2 percent of the employee's annual eligible earnings. Employees who elected not to continue accruing a benefit in the defined benefit pension plans, and employees hired after November 1997 and through December 31, 2003, may participate in the enhanced defined contribution plan. This plan provides for a fixed employer contribution of 2 percent of the employee's annual eligible earnings, plus an employer-matching contribution of up to 4 percent of the employee's annual eligible earnings. Employees hired after December 31, 2003, do not receive the fixed employer contribution of 2 percent of the employee's annual eligible earnings.

As of December 31, 2016 and 2015, as a result of employees' elections, TI's U.S. defined contribution plans held shares of TI common stock totaling 11 million shares and 13 million shares valued at \$796 million and \$704 million, respectively. Dividends paid on these shares in 2016 and 2015 were \$20 million and \$19 million, respectively. Effective April 1, 2016, the TI common stock fund was frozen to new contributions or transfers into the fund.

Our aggregate expense for the U.S. defined contribution plans was \$60 million in 2016, 2015 and 2014.

The defined benefit pension plans include employees still accruing benefits, as well as employees and participants who no longer accrue service-related benefits, but instead, may participate in the enhanced defined contribution plan. Benefits under the qualified defined benefit pension plan are determined using a formula based upon years of service and the highest five consecutive years of compensation. We intend to contribute amounts to this plan to meet the minimum funding requirements of applicable local laws and regulations, plus such additional amounts as we deem appropriate. The non-qualified defined benefit plans are unfunded and closed to new participants.

#### U.S. retiree health care benefit plan

U.S. employees who meet eligibility requirements are offered medical coverage during retirement. We make a contribution toward the cost of those retiree medical benefits for certain retirees and their dependents. The contribution rates are based upon various factors, the most important of which are an employee's date of hire, date of retirement, years of service and eligibility for Medicare benefits. The balance of the cost is borne by the plan's participants. Employees hired after January 1, 2001, are responsible for the full cost of their medical benefits during retirement.

#### Non-U.S. retirement plans

We provide retirement coverage for non-U.S. employees, as required by local laws or to the extent we deem appropriate, through a number of defined benefit and defined contribution plans. Retirement benefits are generally based on an employee's years of service and compensation. Funding requirements are determined on an individual country and plan basis and are subject to local country practices and market circumstances.

As of December 31, 2016 and 2015, as a result of employees' elections, TI's non-U.S. defined contribution plans held TI common stock valued at \$20 million and \$17 million, respectively. Dividends paid on these shares of TI common stock in 2016 and 2015 were not material.

#### Effects on our Consolidated Statements of Income and Balance Sheets

Expense related to defined benefit and retiree health care benefit plans is as follows:

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	U.S. Defined Benefit			U.S. Retiree Health Care			Non-U.S. Defined Benefit		
	2016	2015	2014	2016	2015	2014	2016	2015	2014
Service cost	\$ 22	\$ 22	\$ 21	\$ 5	\$ 5	\$ 4	\$ 34	\$ 35	\$ 39
Interest cost	42	43	45	20	20	22	52	53	68
Expected return on plan assets	(41)	(48)	(42)	(20)	(22)	(20)	(68)	(76)	(80)
Amortization of prior service cost (credit)	—	—	—	(3 )	2	4	(2 )	(2 )	(2 )
Recognized net actuarial loss	21	19	26	7	8	7	25	24	24
Net periodic benefit costs	44	36	50	9	13	17	41	34	49
Settlement losses	21	25	5	—	—	—	2	2	1
Curtailement gain	—	—	—	—	—	—	—	—	(2 )
Total, including other postretirement losses									
(gains)	\$ 65	\$ 61	\$ 55	\$ 9	\$ 13	\$ 17	\$ 43	\$ 36	\$ 48

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For the U.S. qualified pension and retiree health care plans, the expected return on plan assets component of net periodic benefit cost is based upon a market-related value of assets. In accordance with U.S. GAAP, the market-related value of assets is the fair value adjusted by a smoothing technique whereby certain gains and losses are phased in over a period of three years.

Changes in the benefit obligations and plan assets for defined benefit and retiree health care benefit plans are as follows:

	U.S. Defined Benefit		U.S. Retiree Health Care		Non-U.S. Defined Benefit	
	2016	2015	2016	2015	2016	2015
<b>Change in plan benefit obligation</b>						
Benefit obligation at beginning of year:	\$ 1,033	\$ 1,076	\$ 463	\$ 513	\$ 2,231	\$ 2,316
Service cost	22	22	5	5	34	35
Interest cost	42	43	20	20	52	53
Participant contributions	—	—	10	19	6	6
Benefits paid	(9 )	(8 )	(38 )	(46 )	(77 )	(73 )
Medicare subsidy	—	—	1	3	—	—
Actuarial loss (gain)	27	(6 )	(27 )	(21 )	259	14
Settlements	(85 )	(94 )	—	—	(8 )	(18 )
Plan amendments	—	—	—	(30 )	—	—
Effects of exchange rate changes	—	—	—	—	(136 )	(102 )
Benefit obligation at end of year (BO)	\$ 1,030	\$ 1,033	\$ 434	\$ 463	\$ 2,361	\$ 2,231
<b>Change in plan assets</b>						
Fair value of plan assets at beginning of year:	\$ 1,019	\$ 1,082	\$ 441	\$ 497	\$ 2,134	\$ 2,213
Actual return on plan assets	79	(24 )	20	—	227	25
Employer contributions (funding of qualified plans)	15	52	1	1	160	72
Employer contributions (payments for non-qualified plans)	15	11	—	—	—	—
Participant contributions	—	—	10	19	6	6
Benefits paid	(9 )	(8 )	(38 )	(46 )	(77 )	(73 )
Settlements	(85 )	(94 )	—	—	(8 )	(18 )
Effects of exchange rate changes	—	—	—	—	(133 )	(91 )
Other	—	—	—	(30 )	—	—
Fair value of plan assets at end of year (FVPA)	\$ 1,034	\$ 1,019	\$ 434	\$ 441	\$ 2,309	\$ 2,134
Funded status (FVPA – BO) at end of year	\$ 4	\$ (14 )	\$ —	\$ (22 )	\$ (52 )	\$ (97 )

Amounts recognized on our Consolidated Balance Sheets as of December 31, are as follows:

	U.S. Defined Benefit	U.S. Retiree Health Care	Non-U.S. Defined Benefit	Total
2016				

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Overfunded retirement plans	\$ 66	\$ 3	\$ 27	\$ 96
Accrued expenses and other liabilities &				
Deferred credits and other liabilities	(9 )	—	(6 )	(15 )
Underfunded retirement plans	(53 )	(3 )	(73 )	(129)
Funded status (FVPA – BO) at end of 2016	\$ 4	\$ —	\$ (52 )	\$ (48 )
2015				
Overfunded retirement plans	\$ 51	\$ —	\$ 34	\$ 85
Accrued expenses and other liabilities &				
Deferred credits and other liabilities	(16 )	—	(6 )	(22 )
Underfunded retirement plans	(49 )	(22 )	(125 )	(196)
Funded status (FVPA – BO) at end of 2015	\$ (14 )	\$ (22 )	\$ (97 )	\$ (133)

Contributions to the plans meet or exceed all minimum funding requirements. We expect to contribute about \$100 million to our retirement benefit plans in 2017. The amounts shown for underfunded U.S. defined benefit plans were for non-qualified pension plans, which we do not fund because contributions to them are not tax deductible.

Accumulated benefit obligations, which are generally less than the projected benefit obligations as they exclude the impact of future salary increases, were \$926 million and \$948 million as of December 31, 2016 and 2015, respectively, for the U.S. defined benefit plans, and \$2.22 billion and \$2.09 billion as of December 31, 2016 and 2015, respectively, for the non-U.S. defined benefit plans.

The change in AOCI is as follows:

	U.S. Defined Benefit Net		U.S. Retiree Health Care		Non-U.S. Defined Benefit		Total
	Actuarial Loss	Net Actuarial Loss	Prior Service Credit	Net Actuarial Loss	Prior Service Credit	Net Actuarial Loss	Prior Service Credit
AOCI balance, net of taxes, December 31, 2015	\$ 167	\$ 80	\$ (13 )	\$ 303	\$ (7 )	\$ 550	\$ (20 )
Changes in AOCI by category:							
Adjustments	(10 )	(27)	—	86	—	49	—
Recognized within Net income	(42 )	(7 )	3	(27)	2	(76 )	5
Tax effect	18	12	(1 )	(11)	(1 )	19	(2 )
Total change to AOCI	(34 )	(22)	2	48	1	(8 )	3
AOCI balance, net of taxes, December 31, 2016	\$ 133	\$ 58	\$ (11 )	\$ 351	\$ (6 )	\$ 542	\$ (17 )

The estimated amounts of net actuarial loss and unrecognized prior service credit included in AOCI as of December 31, 2016, that are expected to be amortized into net periodic benefit cost over the next fiscal year are: \$15 million and none for the U.S. defined benefit plans; \$4 million and (\$4) million for the U.S. retiree health care benefit plan; and \$27 million and (\$2) million for the non-U.S. defined benefit plans.

## Information on plan assets

We report and measure the plan assets of our defined benefit pension and other postretirement plans at fair value. The tables below set forth the fair value of our plan assets using the same three-level hierarchy of fair-value inputs described in Note 8. With the adoption of ASU 2015-07, certain assets are no longer subject to disclosure by level of fair value but have been included in the tables below to permit reconciliation to the total plan assets. See Note 2 for more information.

	December 31, 2016				
	Level	Level	Level	Other	Total
	1	2	3	(a)	
Assets of U.S. defined benefit plan:					
Fixed income securities and cash equivalents	\$ —	\$ —	\$ —	\$ 685	\$ 685
Equity securities	—	—	—		