

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, 2019
- ☐ **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 001-03761

TEXAS INSTRUMENTS INCORPORATED
(Exact Name of Registrant as Specified in Its Charter)

| | |
|---|--|
| Delaware (State of Incorporation) | 75-0289970 (I.R.S. Employer Identification No.) |
| 12500 TI Boulevard, Dallas, Texas (Address of principal executive offices) | 75243 (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 | Trading Symbol(s) | Name of each exchange on which registered |
|--------------------------------|-------------------|---|
| Common Stock, par value \$1.00 | TXN | The Nasdaq Global Select Market |

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

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

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

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

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

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

| | | | |
|-------------------------|-------------------------------------|---------------------------|--------------------------|
| Large accelerated filer | <input checked="" type="checkbox"/> | Accelerated filer | <input type="checkbox"/> |
| Non-accelerated filer | <input type="checkbox"/> | Smaller reporting company | <input type="checkbox"/> |
| Emerging growth company | <input type="checkbox"/> | | |

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

Indicate by 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 \$107,187,939,993 as of June 30, 2019.

933,975,619 (Number of shares of common stock outstanding as of February 14, 2020)

Part III hereof incorporates information by reference to the Registrant's proxy statement for the 2020 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. Our operations began in 1930, and we are incorporated in Delaware. With headquarters in Dallas, Texas, we have design, manufacturing or sales operations in more than 30 countries. Our two reportable segments are Analog and Embedded Processing, and we report the results of our remaining business activities in Other. In 2019, we generated \$14.38 billion of revenue.

For many years, we have run our business with three overarching ambitions in mind. First, we will act like owners who will own the company for decades. Second, we will adapt and succeed in a world that is ever changing. And third, we will be a company that we are personally proud to be a part of and that we would want as our neighbor. When we are successful in achieving these ambitions, our employees, customers, communities and shareholders all win.

Our business model is designed around four sustainable competitive advantages that we believe, in combination, put us in a unique class of companies. These advantages include (i) a strong foundation of manufacturing and technology, (ii) a broad portfolio of differentiated analog and embedded processing products, (iii) reach of market channels including our sales force and TI.com and (iv) diversity and longevity of our products, markets and customer positions. Our strategic focus, and where we invest the majority of our resources, is on Analog and Embedded Processing, with a particular emphasis on designing and selling those products into the industrial and automotive markets. We believe these markets represent the best growth opportunities over the next decade or longer, due to increasing semiconductor content. Additionally, analog and embedded processing products sold into industrial and automotive markets provide long product life cycles, intrinsic diversity and less capital-intensive manufacturing, which we believe offer 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, especially on a per-share basis, is important for maximizing shareholder value over the long term. We also believe that free cash flow (cash flow from operations less capital expenditures) will be valued only if it is productively invested in the business or returned to shareholders. TI's business model puts us in a unique class of companies with the ability to grow, generate cash and return that cash to shareholders.

The combined effect of our ambitions, business model and sustainable competitive advantages is that we have continued to build a stronger company. Over time, we have gained market share in Analog and Embedded Processing and grown and returned all free cash flow to our owners.

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.

Analog

Our Analog segment generated \$10.22 billion of revenue in 2019. 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 are also 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 using a battery. Our Analog products are used in many markets, particularly industrial, automotive and personal electronics.

Sales of our Analog products generated about 71% of our revenue in 2019. According to external sources, the market for analog semiconductors was about \$54 billion in 2019. Our Analog segment's revenue in 2019 was about 19% of this fragmented market, which is the leading position. We believe we are well positioned to increase our market share over time.

Our Analog segment includes the following major product lines: Power, Signal Chain and High Volume.

Power

Power includes products that help customers manage power in electronic systems. Our broad portfolio is designed to manage power requirements across different voltage levels using battery management solutions, portable components, power supply controls, point-of-load products, switches and interfaces, integrated protection devices, high-voltage products and mobile lighting and display products.

Signal Chain

Signal Chain includes products that sense, condition and measure real-world signals to allow information to be transferred or converted for further processing and control. Our Signal Chain products, which serve a variety of end markets, include amplifiers, data converters, interface products, motor drives, clocks and sensing products.

High Volume

High Volume includes integrated analog and standard products that are primarily sold into markets such as personal electronics, industrial and automotive. These products support applications like displays and automotive safety systems.

Embedded Processing

Our Embedded Processing segment generated \$2.94 billion of revenue in 2019. 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 applications such as 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 and automotive.

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 20% of our revenue in 2019. According to external sources, the market for embedded processors was about \$18 billion in 2019. Our Embedded Processing segment’s revenue in 2019 was about 16% of this fragmented market, which is among the leaders. We believe we are well positioned to increase our market share over time.

Our Embedded Processing segment includes the following major product lines: Connected Microcontrollers and Processors.

Connected Microcontrollers

Connected Microcontrollers includes microcontrollers, microcontrollers with integrated wireless capabilities and stand-alone wireless connectivity solutions. Microcontrollers are self-contained systems with a processor core, memory and peripherals that are designed to control a set of specific tasks for electronic equipment.

Processors

Processors includes 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.

Other

We report the results of our remaining business activities in Other, which includes operating segments that do not meet the quantitative thresholds for individually reportable segments and cannot be aggregated with other operating segments. Other generated \$1.22 billion of revenue in 2019 and includes revenue from DLP® products (primarily used in projectors to create high-definition images), calculators and certain custom semiconductors known as application-specific integrated circuits (ASICs).

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, 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.

Markets for our products

The table below lists the major markets for our products in 2019 and the estimated percentage of our 2019 revenue that the market represented. The chart also lists, in declining order of our revenue, the sectors within each market.

| Market | Sector |
|--|--|
| Industrial (36% of TI revenue) | Factory automation & control Building automation Grid infrastructure Medical Aerospace & defense Test & measurement Appliances Pro audio, video & signage Motor drives Power delivery Retail automation & payments Industrial transport Lighting |
| Automotive (21% of TI revenue) | Infotainment & cluster Advanced driver assistance systems (ADAS) Passive safety Hybrid, electric & powertrain systems Body electronics & lighting |
| Personal electronics (23% of TI revenue) | Mobile phones Portable electronics PC & notebooks Connected peripherals & printers Home theatre & entertainment TV Tablets Wearables (non-medical) Data storage Gaming |
| Communications equipment (11% of TI revenue) | Wireless infrastructure Wired networking Broadband fixed line access Datacom module |
| Enterprise systems (6% of TI revenue) | Data center & enterprise computing Enterprise projectors Enterprise machine |
| Other (calculators and other) (3% 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, manufacturing capacity and capabilities and price. In addition, manufacturing process and package technologies that provide differentiated levels of performance and a structural cost advantage are competitive factors for our Analog products, and customers' prior investments in software development is a competitive factor for our Embedded Processing products.

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 focus our resources on analog and embedded processing products and industrial and automotive markets. These products and markets serve a large and diverse customer base, which reduces our dependence on the performance of a single market or small group of customers. Industrial and automotive markets also benefit from long product life cycles, which help to smooth the impact of cyclicalities. In addition, we plan manufacturing facility and equipment expansion ahead of demand, as well as utilize consignment inventory programs to give us improved insight into customer demand and more accurately manage factory loadings.

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 with the second and third quarters.

Customers, sales and distribution

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

We market and sell our products through direct sales channels, including our broad sales force and our website, and through distributors. In 2019, about 65% of our sales were fulfilled through our distributors, and they maintain inventory of our products.

Over the past several years, we have been investing in new capabilities and evolving our distribution network to better align with our strategy to establish closer, more direct relationships with our customers. Closer direct customer relationships give us better insight into customer needs and allow us to provide better service and greater assurance of supply, among other benefits. As we expand these direct customer relationships over the next several years, we will have less business flowing through the distribution channel and therefore will require fewer distributors.

Our investments in new and improved capabilities to directly support our customers include website and e-commerce enhancements as well as inventory consignment programs and order fulfillment services.

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, with most products requiring about two to three months for completion.

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 invest in manufacturing technologies and do most of our manufacturing in-house. This strategic decision to directly control our manufacturing helps ensure a consistent supply of products for our customers and also allows us to invest in technology that differentiates the features of our products. We have focused on creating a competitive manufacturing cost advantage by investing in our advanced analog 300-millimeter capacity, which has about a 40% cost advantage per unpackaged chip over 200-millimeter. To strengthen this advantage, we are moving forward with our plan to build our new 300-millimeter wafer fabrication facility in Richardson, Texas, as 300-millimeter wafers will continue to support the majority of our Analog growth.

We expect to continue to maintain sufficient internal manufacturing capacity to meet the majority of our production needs and to obtain manufacturing equipment to support new technology developments and revenue growth. To supplement our manufacturing capacity and maximize our responsiveness to customer demand, we use the capacity of outside suppliers, commonly known as foundries, and subcontractors. In 2019, we sourced about 20% of our total wafers from external foundries, most of which support our Embedded Processing segment, and about 40% of our assembly/test services from subcontractors.

Inventory

Our objectives for inventory are to maintain high levels of customer service and stable lead times, minimize inventory obsolescence and improve manufacturing asset utilization. To meet these objectives and to allow greater flexibility in periods of high demand, we build ahead of demand long-lived, low-volume products and maintain inventory of other products that have a broad customer base and low risk of obsolescence. Further, we have improved insight into demand and are better able to manage our factory loadings because over time we have increased consignment inventory programs and are building closer, more direct relationships with our customers. In 2019, about 65% of TI revenue was fulfilled from consignment programs. Our strategy and expected customer demand will cause our inventory levels to fluctuate over time.

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 \$1.0 billion at December 31, 2019, and \$1.5 billion at December 31, 2018.

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.

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 | 50 | Senior Vice President |
| Ahmad S. Bahai | 57 | Senior Vice President |
| Ellen L. Barker | 57 | Senior Vice President and Chief Information Officer |
| Kyle M. Flessner | 49 | Senior Vice President |
| Haviv Ilan | 51 | Senior Vice President |
| Hagop H. Kozanian | 37 | Senior Vice President |
| Rafael R. Lizardi | 47 | Senior Vice President, Chief Financial Officer and Chief Accounting Officer |
| Amichai Ron | 42 | Senior Vice President |
| Richard K. Templeton | 61 | Director, Chairman of the Board, President and Chief Executive Officer |
| Cynthia Hoff Trochu | 56 | Senior Vice President, Secretary and General Counsel |
| Julie M. Van Haren | 51 | Senior Vice President |
| Darla H. Whitaker | 54 | Senior Vice President |
| Bing Xie | 52 | Senior Vice President |

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. Templeton and Xie and Ms. Whitaker have served as executive officers of the company for more than five years. Ms. Trochu became an executive officer of the company in 2015. Messrs. Anderskov, Ilan and Lizardi and Mes. Barker and Van Haren became executive officers of the company in 2017. Messrs. Bahai, Flessner and Kozanian became executive officers of the company in 2018. Mr. Ron became an executive officer in 2019. Mr. Anderskov was previously an executive officer of the company from 2012 to 2014.

Employees

At December 31, 2019, we had 29,768 employees.

Available information

Our internet address is www.ti.com. Information on our website is not 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: (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 many companies, we are susceptible to a potential downturn associated with macroeconomic weakness, which may affect 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, dividends or share repurchases, and other factors, many of which are beyond our control.

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% of our revenue comes from shipments to locations outside the United States; shipments of products into China represent a large portion of our revenue. Certain countries where we operate have experienced, and other countries may experience, increasing protectionism that affects global trade and macroeconomic conditions through the enactment of tariffs, import or export restrictions, trade embargoes and sanctions, restrictions on cross-border investment and other trade barriers. This protectionism impacts our ability to deliver products and product support into China, could cause Chinese customers to seek alternate suppliers and could otherwise adversely affect our operations and financial results.

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. 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.

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, in conjunction with trade tensions, may restrict us from participating in the China market or may prevent us from competing effectively. Certain 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. 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.

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 the rate of growth slows, our results of operations may be adversely affected. The cyclical nature of the semiconductor market occasionally leads to significant and 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, the timing of customer or distributor inventory adjustments, or trade restrictions, 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 operating results and our reputation could be adversely affected by breaches, disruptions or other incidents relating to our information technology systems.

Breaches, disruptions or other incidents relating to our information technology systems or the systems of our customers, vendors and other third parties could be caused by factors such as computer viruses, system failures, restricted network access, unauthorized access, terrorism, employee malfeasance, or human error. These events could, among other things, compromise our information technology networks; result in corrupt or 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 personal data; or cause us to incur costs associated with increased protection, remediation, regulatory inquiries or penalties, or claims for damages, any of which could adversely affect our operating results and our reputation. Cybersecurity or other threats to our information technology systems or the systems of our customers, vendors and other third parties are frequent and constantly evolving, thereby increasing the difficulty of defending against them.

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

From time to time, we undertake strategic, business and organizational changes, including acquisitions, divestitures and restructuring actions, to support or carry out our objectives. Our failure to successfully implement these changes could adversely affect our business plans and operating results. We may not achieve or sustain the expected growth, cost savings or other benefits of strategic, business and organizational changes, and restructuring charges could differ materially in amount and timing from our expectations.

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, particularly where we have principal manufacturing and design operations, as listed in Item 2. Properties, may adversely affect our results and financial condition.

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 in a timely manner. We make significant investments in research and development to improve existing technology and products, develop new products to meet changing customer demands, and improve our production processes. In some cases, we might not realize a return or the expected return on our investments because they are generally made before commercial viability can be assured. Further, projects that are commercially viable may not contribute to our operating results until at least a few years after they are completed.

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 or health epidemics in the locations in which our suppliers operate; or limited or delayed access to key raw materials, natural resources and utilities. Additionally, a breach or other incident relating to our suppliers' information technology systems could result in a release of 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, the possibility of suppliers' imposition of increased costs on us and the unauthorized disclosure or use of our intellectual property.

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

Claims based on warranty, product liability, epidemic or delivery failures, or other grounds relating to our products, manufacturing, services, designs, communications or cybersecurity could lead to significant expenses as we defend the claims or pay damage awards or settlements. In the event of a claim, we would also incur costs if we decide to compensate the affected customer or end consumer. Any such claims may also cause us to write off the value of related inventory. 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 a customer 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 reputation.

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; trade; bribery and corruption; financial reporting; tax; data privacy and protection; labor and employment; competition; market access; intellectual property ownership and infringement; and the movement of currency. 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 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 tax rate 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 or deductions, including for amounts relating to stock compensation; changes in applicable tax rates; changes in tariff regulations or surcharges; changes in accounting principles; or adverse resolution of audits by taxing authorities. 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.

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. These laws and regulations can be complex and subject to interpretation. Changes in these laws and regulations, including those that align with the Organisation for Economic Cooperation and Development's Base Erosion and Profit Shifting recommendations, could affect the locations where we are deemed to earn income, which could in turn affect our results of operations. Each quarter we forecast our tax expense based on our forecast of our performance for the year. If that performance forecast changes, our forecasted tax expense will change.

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 would 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 2019, about 65% 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 significant distributors could be disruptive or harmful to our business.

Our margins vary.

Our profit margins vary due to a number of factors, which may include customer demand and shipment volume; our manufacturing processes; product mix; inventory levels; tariffs; and new accounting pronouncements or changes in existing accounting practices or standards. 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 in all jurisdictions where we conduct business. There can be no assurance that, as our business evolves, we will obtain the necessary intellectual property rights, or that 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, directly or indirectly, face infringement claims from third parties, including non-practicing entities that have acquired patents to pursue enforcement actions against other companies. We also face infringement claims where we or our customers make, use or sell products and where the intellectual property laws may be less established or less predictable. These assertions, whether or not of any merit, 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 and information, including, for example, third parties' use of our patented or copyrighted technology, or our trade secrets in their products without the right to do so, or third parties' sale of counterfeit products bearing our trademark. The risk of unfair copying or cloning may impede our ability to sell our products. 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 our other risk factors, 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 multiyear 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, as well as the effective management of succession for key employees. Skilled and experienced personnel in our industry, including engineering, management, marketing, technical and staff personnel, 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.

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.

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.

| | Analog | Embedded Processing |
|--|--------|---------------------|
| North Texas (Dallas, Richardson and Sherman) | X | X |
| Houston, Texas | | X |
| Tucson, Arizona * | X | |
| Santa Clara, California | X | |
| South Portland, Maine | X | |
| Chengdu, China † | X | X |
| Shanghai, China * | X | X |
| Freising, Germany | X | X |
| Bangalore, India † | X | X |
| Aizu, Japan | X | X |
| Miho, Japan | X | X |
| Kuala Lumpur, Malaysia † | X | X |
| Melaka, Malaysia † | X | |
| Aguascalientes, Mexico * | X | |
| Baguio, Philippines † | X | X |
| Pampanga (Clark), Philippines † | X | X |
| Taipei, Taiwan † | X | X |

* Leased.

† Portions of the facilities are leased and owned. This may include land leases.

Our facilities in the United States contained approximately 12.9 million square feet at December 31, 2019, of which approximately 0.5 million square feet were leased. Our facilities outside the United States contained approximately 9.7 million square feet at December 31, 2019, of which approximately 1.4 million square feet were leased.

At the end of 2019, 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 their intended purpose.

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

TI common stock is quoted on The Nasdaq Global Select Market under the ticker symbol TXN. At December 31, 2019, we had 13,098 stockholders of record.

The following table contains information regarding our purchases of our common stock during the fourth quarter of 2019.

| Period | Total Number of Shares Purchased | Average Price Paid per Share | Total Number of Shares Purchased as Part of Publicly Announced Plans or Programs (a) | Approximate Dollar Value of Shares that May Yet Be Purchased Under the Plans or Programs (a) |
|--|----------------------------------|------------------------------|--|--|
| October 1, 2019 through October 31, 2019 | 1,420,035 | \$ 124.15 | 1,413,384 | \$ 13.50 billion |
| November 1, 2019 through November 30, 2019 | 2,013,945 | 118.57 | 2,013,945 | 13.26 billion |
| December 1, 2019 through December 31, 2019 | 618,048 | 120.37 | 618,048 | 13.18 billion |
| Total | 4,052,028 (b) | \$ 120.80 (b) | 4,045,377 | \$ 13.18 billion (c) |

- (a) All open-market purchases during the quarter were made under the authorization from our board of directors to purchase up to \$6.0 billion of additional shares of TI common stock announced September 21, 2017. On September 20, 2018, our board of directors authorized the purchase of an additional \$12.0 billion of our common stock.
- (b) In addition to open-market purchases, 6,651 shares of common stock were surrendered by employees to satisfy tax withholding obligations in connection with the vesting of restricted stock units.
- (c) As of December 31, 2019, this amount consisted of the remaining portion of the \$6.0 billion authorized in September 2017 and the \$12.0 billion authorized in September 2018. No expiration date has been specified for these authorizations.

ITEM 6. Selected financial data

| (Millions of dollars, except share and per-share amounts) | For Years Ended December 31, | | | | |
|--|------------------------------|----------|----------|----------|----------|
| | 2019 | 2018 | 2017 | 2016 | 2015 |
| Cash flow data: | | | | | |
| Cash flows from operating activities | \$ 6,649 | \$ 7,189 | \$ 5,363 | \$ 4,614 | \$ 4,397 |
| Capital expenditures | 847 | 1,131 | 695 | 531 | 551 |
| Free cash flow (a) | 5,802 | 6,058 | 4,668 | 4,083 | 3,846 |
| Dividends paid | 3,008 | 2,555 | 2,104 | 1,646 | 1,444 |
| Stock repurchases | 2,960 | 5,100 | 2,556 | 2,132 | 2,741 |
| Income statement data: | | | | | |
| Revenue by segment: | | | | | |
| Analog | 10,223 | 10,801 | 9,900 | 8,536 | 8,339 |
| Embedded Processing | 2,943 | 3,554 | 3,498 | 3,023 | 2,787 |
| Other | 1,217 | 1,429 | 1,563 | 1,811 | 1,874 |
| Revenue | 14,383 | 15,784 | 14,961 | 13,370 | 13,000 |
| Gross profit | 9,164 | 10,277 | 9,614 | 8,257 | 7,575 |
| Operating expenses (R&D and SG&A) | 3,189 | 3,243 | 3,202 | 3,098 | 2,995 |
| Acquisition charges | 288 | 318 | 318 | 319 | 329 |
| Restructuring charges/other | (36) | 3 | 11 | (15) | (71) |
| Operating profit | 5,723 | 6,713 | 6,083 | 4,855 | 4,322 |
| Net income | \$ 5,017 | \$ 5,580 | \$ 3,682 | \$ 3,595 | \$ 2,986 |
| A portion of net income is 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 | \$ 5,017 | \$ 5,580 | \$ 3,682 | \$ 3,595 | \$ 2,986 |
| Income allocated to RSUs | (31) | (42) | (33) | (44) | (42) |
| Income allocated to common shares for diluted EPS | \$ 4,986 | \$ 5,538 | \$ 3,649 | \$ 3,551 | \$ 2,944 |
| Average diluted shares outstanding (millions) | 952 | 990 | 1,012 | 1,021 | 1,043 |
| Diluted EPS | \$ 5.24 | \$ 5.59 | \$ 3.61 | \$ 3.48 | \$ 2.82 |
| Cash dividends declared per common share | \$ 3.21 | \$ 2.63 | \$ 2.12 | \$ 1.64 | \$ 1.40 |

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

| (Millions of dollars) | December 31, | | | | |
|---|--------------|----------|----------|----------|----------|
| | 2019 | 2018 | 2017 | 2016 | 2015 |
| Balance sheet data: | | | | | |
| Cash, cash equivalents and short-term investments | \$ 5,387 | \$ 4,233 | \$ 4,469 | \$ 3,490 | \$ 3,218 |
| Total assets | 18,018 | 17,137 | 17,642 | 16,431 | 16,230 |
| Current portion of long-term debt | 500 | 749 | 500 | 631 | 1,000 |
| Long-term debt | 5,303 | 4,319 | 3,577 | 2,978 | 3,120 |

See Management's discussion and analysis of financial condition and results of operations and Financial statements and supplementary data.

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. For many years, we have run our business with three overarching ambitions in mind. First, we will act like owners who will own the company for decades. Second, we will adapt and succeed in a world that is ever changing. And third, we will be a company that we are personally proud to be a part of and that we would want as our neighbor. When we are successful in achieving these ambitions, our employees, customers, communities and shareholders all win.

Our business model is designed around the following four sustainable competitive advantages that we believe, in combination, put us in a unique class of companies:

- *A strong foundation of manufacturing and technology.* We invest in manufacturing technologies and do most of our manufacturing in-house. This strategic decision to directly control our manufacturing helps ensure a consistent supply of products for our customers and also allows us to invest in technology that differentiates the features of our products. We have focused on creating a competitive manufacturing cost advantage by investing in our advanced analog 300-millimeter capacity, which has about a 40% cost advantage per unpackaged chip over 200-millimeter. To strengthen this advantage, we are moving forward with our plan to build our new 300-millimeter wafer fabrication facility in Richardson, Texas, as 300-millimeter wafers will continue to support the majority of our Analog growth.
- *Broad portfolio of differentiated analog and embedded processing products.* Our customers need multiple chips for their systems. The breadth of our portfolio means we can meet more of these needs than our competitors can, which gives us access to more customers and the opportunity to sell more products and generate more revenue per customer system. We invest more than \$1 billion each year to develop new products for our portfolio, which includes tens of thousands of products.
- *Reach of market channels.* Customers often begin their initial product selection process and design-in journey on our website, and the breadth of our portfolio attracts more customers to our website than any of our competitors' websites. Our web presence and global sales and applications team are advantages that give us unique access and insight to about 100,000 customers designing TI semiconductors into their end products.
- *Diversity and longevity of our products, markets and customer positions.* 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, customer, technology or market. Some of our products generate revenue for decades, which strengthens the return on our investments.

Our strategic focus, and where we invest the majority of our resources, is on Analog and Embedded Processing, with a particular emphasis on designing and selling those products into the industrial and automotive markets. We believe these markets represent the best growth opportunities over the next decade or longer, due to increasing semiconductor content. Additionally, analog and embedded processing products sold into industrial and automotive markets provide long product life cycles, intrinsic diversity and less capital-intensive manufacturing, which we believe offer 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, especially on a per-share basis, 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.

The combined effect of our ambitions, business model and sustainable competitive advantages is that we have continued to build a stronger company. Over time, we have gained market share in Analog and Embedded Processing and grown and returned all free cash flow to our owners.

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:

- 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.

- When we discuss our results:
 - Unless otherwise noted, changes in our revenue are attributable to changes in customer demand, which are evidenced by fluctuations in shipment volumes.
 - New products do not tend to have a significant impact on our revenue in any given period because we sell such a large number of products.
 - 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.
 - 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.
- All dollar amounts in the tables are stated in millions of U.S. dollars.

Our results of operations discussed below provides details of our financial results for 2019 and 2018 and year-to-year comparisons between 2019 and 2018. Discussion of 2017 items and year-to-year comparisons between 2018 and 2017 that are not included in this Form 10-K can be found in “Management’s discussion and analysis of financial condition and results of operations” in Part II, Item 7 of the Company’s Annual Report on Form 10-K for the year ended December 31, 2018.

Results of operations

In 2019, we continued our focus on analog and embedded processing products and the industrial and automotive markets. Together, these products and markets represent highly diverse opportunities with thousands of applications and long-term growth potential. Gross margin of 63.7% reflected the quality of our product portfolio, as well as the efficiency of our manufacturing strategy, including the benefit of 300-millimeter Analog production.

Our focus on Analog and Embedded Processing allows us to generate strong cash flow from operations. Our cash flow from operations of \$6.65 billion underscored the strength of our business model. Free cash flow was \$5.80 billion and represented 40.3% of revenue, up from 38.4% a year ago. During 2019, we returned \$5.97 billion to shareholders through a combination of stock repurchases and dividends. Our strategy is to return all free cash flow to shareholders. Our dividends represented 52% of free cash flow, underscoring their sustainability. For an explanation of free cash flow, see the Non-GAAP financial information section.

Details of financial results – 2019 compared with 2018

Revenue of \$14.38 billion decreased \$1.40 billion, or 9%, primarily due to lower revenue from Embedded Processing and Analog.

Gross profit of \$9.16 billion was down \$1.11 billion, or 11%, primarily due to lower revenue. As a percentage of revenue, gross profit decreased to 63.7% from 65.1%.

Operating expenses (R&D and SG&A) were \$3.19 billion compared with \$3.24 billion.

Acquisition charges of \$288 million were non-cash. See Note 7 to the financial statements.

Restructuring charges/other was a credit of \$36 million due to the sale of our manufacturing facility in Greenock, Scotland.

Operating profit was \$5.72 billion, or 39.8% of revenue, compared with \$6.71 billion, or 42.5% of revenue.

Other income and expense (OI&E) was \$175 million of income compared with \$98 million of income. See Note 12 to the financial statements.

Interest and debt expense of \$170 million increased \$45 million due to the issuance of additional long-term debt.

Our provision for income taxes was \$711 million compared with \$1.11 billion. The decrease was due to lower income before income taxes and a lower annual operating tax rate. Our annual operating tax rate, which does not include discrete tax items, was 16% compared with 20% in 2018. We use “annual operating tax rate” to describe the estimated annual effective tax rate, as explained further in the Non-GAAP financial information section.

Our effective tax rate, which includes discrete tax items, was 12% in 2019 compared with 17% in 2018. See Note 4 to the financial statements for a reconciliation of the U.S. statutory income tax rate to our effective tax rate.

Net income was \$5.02 billion compared with \$5.58 billion. EPS was \$5.24 compared with \$5.59.

Segment results – 2019 compared with 2018

Analog (includes Power, Signal Chain and High Volume product lines)

| | 2019 | 2018 | Change |
|-------------------------------|-----------|-----------|--------|
| Revenue | \$ 10,223 | \$ 10,801 | (5) % |
| Operating profit | 4,477 | 5,109 | (12) % |
| Operating profit % of revenue | 43.8 % | 47.3 % | |

Analog revenue decreased due to Power, High Volume and, to a lesser extent, Signal Chain. Operating profit decreased primarily due to lower revenue and associated gross profit.

Embedded Processing (includes Connected Microcontrollers and Processors product lines)

| | 2019 | 2018 | Change |
|-------------------------------|----------|----------|--------|
| Revenue | \$ 2,943 | \$ 3,554 | (17) % |
| Operating profit | 907 | 1,205 | (25) % |
| Operating profit % of revenue | 30.8 % | 33.9 % | |

Embedded Processing revenue decreased in both product lines, led by Processors. Operating profit decreased due to lower revenue and associated gross profit.

Other (includes DLP® products, calculators and custom ASIC products)

| | 2019 | 2018 | Change |
|-------------------------------|----------|----------|--------|
| Revenue | \$ 1,217 | \$ 1,429 | (15) % |
| Operating profit * | 339 | 399 | (15) % |
| Operating profit % of revenue | 27.9 % | 27.9 % | |

* Includes acquisition charges and restructuring charges/other

Other revenue decreased \$212 million, and operating profit decreased \$60 million.

Financial condition

At the end of 2019, total cash (cash and cash equivalents plus short-term investments) was \$5.39 billion, an increase of \$1.15 billion from the end of 2018.

Accounts receivable were \$1.07 billion, a decrease of \$133 million compared with the end of 2018. Days sales outstanding were 29 at the end of both 2019 and 2018.

Inventory was \$2.00 billion, a decrease of \$216 million from the end of 2018. Days of inventory at the end of 2019 were 144 compared with 152 at the end of 2018.

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 2019 were \$6.65 billion, a decrease of \$540 million primarily due to lower 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 2024. This credit facility also serves as support for the issuance of commercial paper. As of December 31, 2019, our credit facility was undrawn, and we had no commercial paper outstanding.

Investing activities for 2019 used \$1.92 billion compared with \$78 million in 2018. Capital expenditures were \$847 million compared with \$1.13 billion in 2018 and were primarily for semiconductor manufacturing equipment in both periods. Short-term investments used cash of \$1.14 billion in 2019 and provided cash proceeds of \$1.07 billion in 2018.

Financing activities for 2019 used \$4.73 billion compared with \$6.33 billion in 2018. In 2019, we received net proceeds of \$1.49 billion from the issuance of fixed-rate, long-term debt and retired maturing debt of \$750 million. In 2018, we received net proceeds of \$1.50 billion from the issuance of fixed-rate, long-term debt and retired maturing debt of \$500 million. Dividends paid in 2019 were \$3.01 billion compared with \$2.56 billion in 2018, reflecting an increase in the dividend rate, partially offset by fewer shares outstanding. We used \$2.96 billion to repurchase 27.4 million shares of our common stock compared with \$5.10 billion used in 2018 to repurchase 49.5 million shares. Employee exercises of stock options provided cash proceeds of \$539 million compared with \$373 million in 2018.

We had \$2.44 billion of cash and cash equivalents and \$2.95 billion of short-term investments as of December 31, 2019. 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 measures is provided in the table below.

| | For Years Ended December 31, | |
|---|------------------------------|-----------|
| | 2019 | 2018 |
| Cash flow from operations (GAAP) | \$ 6,649 | \$ 7,189 |
| Capital expenditures | (847) | (1,131) |
| Free cash flow (non-GAAP) | \$ 5,802 | \$ 6,058 |
| Revenue | \$ 14,383 | \$ 15,784 |
| Cash flow from operations as a percentage of revenue (GAAP) | 46.2 % | 45.5 % |
| Free cash flow as a percentage of revenue (non-GAAP) | 40.3 % | 38.4 % |

This MD&A also includes references to an annual operating tax rate, a non-GAAP term we use to describe the estimated annual effective tax rate, a GAAP measure that by definition does not include discrete tax items. We believe the term annual operating tax rate helps differentiate from the effective tax rate, which includes discrete tax items.

Long-term contractual obligations

| Contractual Obligations | Payments Due by Period | | | | |
|--|------------------------|-----------|-----------|------------|-----------|
| | 2020 | 2021/2022 | 2023/2024 | Thereafter | Total |
| Long-term debt (a) | \$ 669 | \$ 1,349 | \$ 1,060 | \$ 5,488 | \$ 8,566 |
| Purchase commitments (b) | 452 | 407 | 97 | 109 | 1,065 |
| Transition tax on indefinitely reinvested earnings (c) | — | 100 | 237 | 169 | 506 |
| Operating leases (d) | 75 | 114 | 66 | 131 | 386 |
| Deferred compensation plans (e) | 23 | 63 | 54 | 135 | 275 |
| Total (f) | \$ 1,219 | \$ 2,033 | \$ 1,514 | \$ 6,032 | \$ 10,798 |

- (a) Principal and related interest payments for our long-term debt obligations, including amounts classified as the current portion of long-term debt.
- (b) Includes payments for software licenses and contractual arrangements with suppliers when there is a fixed, non-cancellable payment schedule or when minimum payments are due with a reduced delivery schedule. Excludes cancellable arrangements. See Note 11 to the financial statements.
- (c) Includes payments for the one-time transition tax on our indefinitely reinvested earnings related to the 2017 enactment of the U.S. Tax Cuts and Jobs Act. See Note 4 to the financial statements.
- (d) Includes minimum payments for leased facilities and equipment and purchases of industrial gases under contracts accounted for as operating leases. See Note 10 to the financial statements.
- (e) Estimated payments for certain liabilities that existed as of December 31, 2019.
- (f) Excludes \$303 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 \$20 million in 2020, but funding projections beyond 2020 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

Our accounting policies are more fully described in Note 2 of the consolidated financial statements. As disclosed in Note 2, the preparation of consolidated financial statements in conformity with U.S. GAAP requires management to make estimates and assumptions about future events that affect the amounts reported in the financial statements and accompanying notes. However, based on facts and circumstances inherent in developing estimates and assumptions, management believes it is unlikely that applying other estimates and assumptions would have a material impact on the financial statements. We consider the following accounting policies to be those that are most important to the portrayal of our financial condition and that require a higher degree of judgment.

Revenue recognition

Based on management's assessment of the revenue recognition criteria, we generally recognize revenue from sales of our products to distributors upon shipment or delivery to the distributors. For our consignment arrangements with distributors, delivery occurs and revenue is recognized when the distributor pulls product from consignment inventory that we store at designated locations. Recognition is not contingent upon resale of the products to the distributors' customers in either scenario.

Revenue is recognized net of allowances, which are management's estimates of future credits to be granted to distributors under programs common in the semiconductor industry. These allowances are not material and generally include special pricing arrangements, product returns due to quality issues, and incentives designed to maximize growth opportunities.

Allowances are based on analysis of historical data 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.

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 interpretation and application of complex tax laws, and significant judgment is necessary to (i) determine whether, based on the technical merits, a tax position is more likely than not to be sustained and (ii) measure the amount of tax benefit that qualifies for recognition. We recognize potential liabilities for anticipated tax audit issues in the United States 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 from 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. Our judgment regarding future recoverability of our deferred tax assets 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 adjustments to the deferred tax assets and an accompanying reduction or increase in net income in the period when such determinations are made.

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 considered 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, such as 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 the net realizable value 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 regarding the status of new accounting and reporting standards.

Off-balance sheet arrangements

As of December 31, 2019, 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 11 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 our 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 impact taxable income in those jurisdictions and consequently impact 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 2019 balances and currency exchange rates, a hypothetical 10% plus or minus fluctuation in non-U.S. currency exchange rates relative to the U.S. dollar would result in a pretax currency exchange gain or loss of less than \$1 million.

We use these forward currency exchange contracts to reduce the earnings impact that exchange rate fluctuations may have on our non-U.S. dollar net balance sheet exposures. As of December 31, 2019, we had forward currency exchange contracts outstanding with a notional value of \$458 million to hedge net balance sheet exposures (including \$136 million to sell Japanese yen, \$106 million to sell Indian rupees and \$74 million to sell British pounds). Similar hedging activities existed at year-end 2018.

Interest rate risk

We have the following potential exposure to changes in interest rates: (i) 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 (ii) the effect of changes in interest rates on the fair value of our debt.

As of December 31, 2019, 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 about \$8 million and decrease the fair value of our long-term debt by \$532 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 2019 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 method or at cost as non-marketable equity securities).
- *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% increase or decrease in the investments' fair values would not materially affect operating results. Non-marketable equity securities and certain venture capital funds are stated at cost minus impairment, if any, plus or minus changes resulting from qualifying observable price changes. Investments in the remaining venture capital funds are stated using the equity method. See Note 6 to the financial statements for details of equity and other long-term investments.

ITEM 8. Financial statements and supplementary data

List of financial statements

Income for each of the three years in the period ended December 31, 2019

Comprehensive income for each of the three years in the period ended December 31, 2019

Balance sheets as of December 31, 2019 and 2018

Cash flows for each of the three years in the period ended December 31, 2019

Stockholders' equity for each of the three years in the period ended December 31, 2019

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, | | |
|--|------------------------------|-----------|-----------|
| | 2019 | 2018 | 2017 |
| Revenue | \$ 14,383 | \$ 15,784 | \$ 14,961 |
| Cost of revenue (COR) | 5,219 | 5,507 | 5,347 |
| Gross profit | 9,164 | 10,277 | 9,614 |
| Research and development (R&D) | 1,544 | 1,559 | 1,508 |
| Selling, general and administrative (SG&A) | 1,645 | 1,684 | 1,694 |
| Acquisition charges | 288 | 318 | 318 |
| Restructuring charges/other | (36) | 3 | 11 |
| Operating profit | 5,723 | 6,713 | 6,083 |
| Other income (expense), net (OI&E) | 175 | 98 | 75 |
| Interest and debt expense | 170 | 125 | 78 |
| Income before income taxes | 5,728 | 6,686 | 6,080 |
| Provision for income taxes | 711 | 1,106 | 2,398 |
| Net income | \$ 5,017 | \$ 5,580 | \$ 3,682 |
| Earnings per common share (EPS): | | | |
| Basic | \$ 5.33 | \$ 5.71 | \$ 3.68 |
| Diluted | \$ 5.24 | \$ 5.59 | \$ 3.61 |
| Average shares outstanding (millions): | | | |
| Basic | 936 | 970 | 991 |
| Diluted | 952 | 990 | 1,012 |

A portion of net income is allocated to unvested restricted stock units (RSUs) on which we pay dividend equivalents. Diluted EPS is calculated using the following:

| | | | |
|--|----------|----------|----------|
| Net income | \$ 5,017 | \$ 5,580 | \$ 3,682 |
| Income allocated to RSUs | (31) | (42) | (33) |
| Income allocated to common stock for diluted EPS | \$ 4,986 | \$ 5,538 | \$ 3,649 |

See accompanying notes.

| Consolidated Statements of Comprehensive Income (Millions of dollars) | For Years Ended December 31, | | |
|--|------------------------------|-----------------|-----------------|
| | 2019 | 2018 | 2017 |
| Net income | \$ 5,017 | \$ 5,580 | \$ 3,682 |
| Other comprehensive income (loss) | | | |
| Net actuarial losses of defined benefit plans: | | | |
| Adjustments, net of tax effect of (\$37), \$35 and (\$26) | 88 | (98) | 92 |
| Recognized within net income, net of tax effect of (\$13), (\$15) and (\$27) | 38 | 50 | 56 |
| Prior service credit of defined benefit plans: | | | |
| Adjustments, net of tax effect of \$0, \$1 and \$1 | — | (6) | (2) |
| Recognized within net income, net of tax effect of \$0, \$1 and \$1 | — | (3) | (5) |
| Derivative instruments: | | | |
| Change in fair value, net of tax effect of \$0, \$1 and \$0 | — | (2) | — |
| Recognized within net income, net of tax effect of \$0, \$0 and \$0 | — | — | 1 |
| Other comprehensive income (loss), net of taxes | 126 | (59) | 142 |
| Total comprehensive income | <u>\$ 5,143</u> | <u>\$ 5,521</u> | <u>\$ 3,824</u> |

See accompanying notes.

| Consolidated Balance Sheets (Millions of dollars, except share amounts) | December 31, | |
|--|--------------|-----------|
| | 2019 | 2018 |
| Assets | | |
| Current assets: | | |
| Cash and cash equivalents | \$ 2,437 | \$ 2,438 |
| Short-term investments | 2,950 | 1,795 |
| Accounts receivable, net of allowances of (\$8) and (\$19) | 1,074 | 1,207 |
| Raw materials | 176 | 181 |
| Work in process | 916 | 1,070 |
| Finished goods | 909 | 966 |
| Inventories | 2,001 | 2,217 |
| Prepaid expenses and other current assets | 299 | 440 |
| Total current assets | 8,761 | 8,097 |
| Property, plant and equipment at cost | 5,740 | 5,425 |
| Accumulated depreciation | (2,437) | (2,242) |
| Property, plant and equipment | 3,303 | 3,183 |
| Long-term investments | 300 | 251 |
| Goodwill | 4,362 | 4,362 |
| Acquisition-related intangibles | 340 | 628 |
| Deferred tax assets | 197 | 295 |
| Capitalized software licenses | 69 | 89 |
| Overfunded retirement plans | 218 | 92 |
| Other long-term assets | 468 | 140 |
| Total assets | \$ 18,018 | \$ 17,137 |
| Liabilities and stockholders' equity | | |
| Current liabilities: | | |
| Current portion of long-term debt | \$ 500 | \$ 749 |
| Accounts payable | 388 | 478 |
| Accrued compensation | 714 | 724 |
| Income taxes payable | 46 | 103 |
| Accrued expenses and other liabilities | 475 | 420 |
| Total current liabilities | 2,123 | 2,474 |
| Long-term debt | 5,303 | 4,319 |
| Underfunded retirement plans | 93 | 118 |
| Deferred tax liabilities | 78 | 42 |
| Other long-term liabilities | 1,514 | 1,190 |
| Total liabilities | 9,111 | 8,143 |
| Stockholders' equity: | | |
| 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 | 2,110 | 1,950 |
| Retained earnings | 39,898 | 37,906 |
| Treasury common stock at cost | | |
| Shares: 2019 – 808,784,381; 2018 – 795,665,646 | (34,495) | (32,130) |
| Accumulated other comprehensive income (loss), net of taxes (AOCI) | (347) | (473) |
| Total stockholders' equity | 8,907 | 8,994 |
| Total liabilities and stockholders' equity | \$ 18,018 | \$ 17,137 |

See accompanying notes.

| Consolidated Statements of Cash Flows (Millions of dollars) | For Years Ended December 31, | | |
|--|------------------------------|-----------------|-----------------|
| | 2019 | 2018 | 2017 |
| Cash flows from operating activities | | | |
| Net income | \$ 5,017 | \$ 5,580 | \$ 3,682 |
| Adjustments to net income: | | | |
| Depreciation | 708 | 590 | 539 |
| Amortization of acquisition-related intangibles | 288 | 318 | 318 |
| Amortization of capitalized software | 54 | 46 | 47 |
| Stock compensation | 217 | 232 | 242 |
| Gains on sales of assets | (23) | (3) | — |
| Deferred taxes | 81 | (105) | 112 |
| Increase (decrease) from changes in: | | | |
| Accounts receivable | 133 | 71 | (7) |
| Inventories | 216 | (282) | (167) |
| Prepaid expenses and other current assets | 265 | 669 | 76 |
| Accounts payable and accrued expenses | (93) | (7) | 51 |
| Accrued compensation | (15) | (7) | (3) |
| Income taxes payable | (193) | 158 | 468 |
| Changes in funded status of retirement plans | 29 | 36 | 21 |
| Other | (35) | (107) | (16) |
| Cash flows from operating activities | <u>6,649</u> | <u>7,189</u> | <u>5,363</u> |
| Cash flows from investing activities | | | |
| Capital expenditures | (847) | (1,131) | (695) |
| Proceeds from asset sales | 30 | 9 | 40 |
| Purchases of short-term investments | (3,444) | (5,641) | (4,555) |
| Proceeds from short-term investments | 2,309 | 6,708 | 4,095 |
| Other | 32 | (23) | (12) |
| Cash flows from investing activities | <u>(1,920)</u> | <u>(78)</u> | <u>(1,127)</u> |
| Cash flows from financing activities | | | |
| Proceeds from issuance of long-term debt | 1,491 | 1,500 | 1,099 |
| Repayment of debt | (750) | (500) | (625) |
| Dividends paid | (3,008) | (2,555) | (2,104) |
| Stock repurchases | (2,960) | (5,100) | (2,556) |
| Proceeds from common stock transactions | 539 | 373 | 483 |
| Other | (42) | (47) | (31) |
| Cash flows from financing activities | <u>(4,730)</u> | <u>(6,329)</u> | <u>(3,734)</u> |
| Net change in cash and cash equivalents | (1) | 782 | 502 |
| Cash and cash equivalents at beginning of period | 2,438 | 1,656 | 1,154 |
| Cash and cash equivalents at end of period | <u>\$ 2,437</u> | <u>\$ 2,438</u> | <u>\$ 1,656</u> |

See accompanying notes.

| Consolidated Statements of Stockholders' Equity | Common Stock | Paid-in Capital | Retained Earnings | Treasury Common Stock | AOCI |
|--|-------------------------|----------------------------|------------------------------|--------------------------------------|-------------|
| (Millions of dollars, except per-share amounts) | | | | | |
| Balance, December 31, 2016 | \$ 1,741 | \$ 1,674 | \$ 33,107 | \$ (25,523) | \$ (526) |
| 2017 | | | | | |
| Net income | — | — | 3,682 | — | — |
| Dividends declared and paid (\$2.12 per share) | — | — | (2,104) | — | — |
| Common stock issued for stock-based awards | — | (138) | — | 621 | — |
| Stock repurchases | — | — | — | (2,556) | — |
| Stock compensation | — | 242 | — | — | — |
| Other comprehensive income (loss), net of taxes | — | — | — | — | 142 |
| Dividend equivalents on RSUs | — | — | (17) | — | — |
| Other | — | (2) | (6) | — | — |
| Balance, December 31, 2017 | 1,741 | 1,776 | 34,662 | (27,458) | (384) |
| 2018 | | | | | |
| Net income | — | — | 5,580 | — | — |
| Dividends declared and paid (\$2.63 per share) | — | — | (2,555) | — | — |
| Common stock issued for stock-based awards | — | (55) | — | 428 | — |
| Stock repurchases | — | — | — | (5,100) | — |
| Stock compensation | — | 232 | — | — | — |
| Other comprehensive income (loss), net of taxes | — | — | — | — | (59) |
| Dividend equivalents on RSUs | — | — | (17) | — | — |
| Cumulative effect of accounting changes | — | — | 236 | — | (30) |
| Other | — | (3) | — | — | — |
| Balance, December 31, 2018 | 1,741 | 1,950 | 37,906 | (32,130) | (473) |
| 2019 | | | | | |
| Net income | — | — | 5,017 | — | — |
| Dividends declared and paid (\$3.21 per share) | — | — | (3,008) | — | — |
| Common stock issued for stock-based awards | — | (55) | — | 594 | — |
| Stock repurchases | — | — | — | (2,960) | — |
| Stock compensation | — | 217 | — | — | — |
| Other comprehensive income (loss), net of taxes | — | — | — | — | 126 |
| Dividend equivalents on RSUs | — | — | (17) | — | — |
| Other | — | (2) | — | 1 | — |
| Balance, December 31, 2019 | \$ 1,741 | \$ 2,110 | \$ 39,898 | \$ (34,495) | \$ (347) |

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. We have two reportable segments, which are established along major categories of products as follows:

- *Analog* – consisting of the following product lines: Power, Signal Chain and High Volume.
- *Embedded Processing* – consisting of the following product lines: Connected Microcontrollers and Processors.

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 and custom ASIC products.

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 7); restructuring charges (see Note 12); 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.

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 consistent with those described below in the summary of significant accounting policies and practices.

Segment information

| | For Years Ended December 31, | | |
|--------------------------|------------------------------|------------------|------------------|
| | 2019 | 2018 | 2017 |
| Revenue: | | | |
| Analog | \$ 10,223 | \$ 10,801 | \$ 9,900 |
| Embedded Processing | 2,943 | 3,554 | 3,498 |
| Other | 1,217 | 1,429 | 1,563 |
| Total revenue | <u>\$ 14,383</u> | <u>\$ 15,784</u> | <u>\$ 14,961</u> |
| Operating profit: | | | |
| Analog | \$ 4,477 | \$ 5,109 | \$ 4,468 |
| Embedded Processing | 907 | 1,205 | 1,143 |
| Other | 339 | 399 | 472 |
| Total operating profit | <u>\$ 5,723</u> | <u>\$ 6,713</u> | <u>\$ 6,083</u> |

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 geographic revenue information does not necessarily reflect end demand by geography because our products tend to be shipped to the locations where our customers manufacture their products.

| | For Years Ended December 31, | | |
|--------------------------------|------------------------------|------------------|------------------|
| | 2019 | 2018 | 2017 |
| Revenue: | | | |
| United States | \$ 1,827 | \$ 2,288 | \$ 1,901 |
| Asia (a) | 8,650 | 9,240 | 8,824 |
| Europe, Middle East and Africa | 2,707 | 3,047 | 2,907 |
| Japan | 796 | 869 | 1,049 |
| Rest of world | 403 | 340 | 280 |
| Total revenue | \$ 14,383 | \$ 15,784 | \$ 14,961 |

- (a) Revenue from products shipped into China was \$7.2 billion, \$7.0 billion and \$6.6 billion in 2019, 2018 and 2017, respectively, which includes shipments to customers that manufacture in China and then export end products to their customers around the world, as well as distributors that transship inventory through China to service other countries.

| | December 31, | |
|--|-----------------|-----------------|
| | 2019 | 2018 |
| Property, plant and equipment: | | |
| United States | \$ 1,998 | \$ 1,812 |
| Asia (a) | 1,046 | 1,116 |
| Europe, Middle East and Africa | 63 | 84 |
| Japan | 185 | 157 |
| Rest of world | 11 | 14 |
| Total property, plant and equipment | \$ 3,303 | \$ 3,183 |

- (a) Property, plant and equipment at our two sites in the Philippines was \$394 million and \$437 million as of December 31, 2019 and 2018, respectively. Property, plant and equipment at our sites in China was \$304 million and \$313 million as of December 31, 2019 and 2018, respectively.

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 effects of adopting a new accounting standard in 2019 related to leases.

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 2019 presentation.

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

Significant accounting policies and practices

Revenue recognition

We generate revenue primarily from the sale of semiconductor products, either directly to a customer or to a distributor, or at the conclusion of a consignment process. We have a variety of types of contracts with our customers and distributors. In determining whether a contract exists, we evaluate the terms of the arrangement, the relationship with the customer or distributor and their ability to pay.

We recognize revenue from sales of our products, including sales to our distributors, when control is transferred. Control is considered transferred when title and risk of loss pass, when the customer becomes obligated to pay and, where required, when the customer has accepted the products. This transfer generally occurs at a point in time upon shipment or delivery to the customer or distributor, depending upon the terms of the sales order. Payment for sales to customers and distributors is generally due on our standard commercial terms. For sales to distributors, payment is not contingent upon resale of the products.

Revenue from sales of our products that are subject to inventory consignment agreements is recognized at a point in time, when the customer or distributor pulls product from consignment inventory that we store at designated locations. Delivery and transfer of control occur at that point, when title and risk of loss transfers and the customer or distributor becomes obligated to pay for the products pulled from inventory. Until the products are pulled for use or sale by the customer or distributor, we retain control over the products' disposition, including the right to pull back or relocate the products.

The revenue recognized is adjusted based on allowances, which are prepared on a portfolio basis using a most likely amount methodology based on analysis of historical data and contractual terms. These allowances, which are not material, generally include adjustments for pricing arrangements, product returns and incentives. The length of time between invoicing and payment is not significant under any of our payment terms. In instances where the timing of revenue recognition differs from the timing of invoicing, we have determined our contracts generally do not include a significant financing component.

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 accounts receivable aging. When collection is at risk, we assess the impact on amounts recorded for bad debts and, if necessary, record a charge in the period such determination is made.

We recognize shipping fees, if any, received from customers in revenue. We include the related shipping and handling costs in cost of revenue. 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 \$30 million, \$34 million and \$39 million in 2019, 2018 and 2017, respectively.

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.

Leases

We determine if an arrangement is a lease at inception. Leases are included in other long-term assets, accrued expenses and other liabilities, and other long-term liabilities on our Consolidated Balance Sheets.

Lease assets represent our right to use underlying assets for the lease term, and lease liabilities represent our obligations to make lease payments over the lease term. On the commencement date, leases are evaluated for classification, and assets and liabilities are recognized based on the present value of lease payments over the lease term. We use our incremental borrowing rate based on the information available at commencement in determining the present value of lease payments. Operating lease expense is generally recognized on a straight-line basis over the lease term. Our lease values include options to extend or not to terminate the lease when it is reasonably certain that we will exercise such options.

We have agreements with lease and non-lease components, which are accounted for as a single lease component. Leases with an initial lease term of 12 months or less are not recorded on the balance sheet; we recognize lease expense for these leases on a straight-line basis over the lease term.

Earnings per share (EPS)

We use the two-class method for calculating EPS because the restricted stock units (RSUs) we grant are participating securities containing non-forfeitable rights to receive dividend equivalents. Under the two-class method, a portion of net income is allocated to RSUs and excluded from the calculation of income allocated to common stock, as shown in the table below.

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

| | For Years Ended December 31, | | | | | | | | |
|---|------------------------------|------------|----------------|-----------------|------------|----------------|-----------------|--------------|----------------|
| | 2019 | | | 2018 | | | 2017 | | |
| | Net Income | Shares | EPS | Net Income | Shares | EPS | Net Income | Shares | EPS |
| Basic EPS: | | | | | | | | | |
| Net income | \$ 5,017 | | | \$ 5,580 | | | \$ 3,682 | | |
| Income allocated to RSUs | (32) | | | (43) | | | (34) | | |
| Income allocated to common stock | <u>\$ 4,985</u> | <u>936</u> | <u>\$ 5.33</u> | <u>\$ 5,537</u> | <u>970</u> | <u>\$ 5.71</u> | <u>\$ 3,648</u> | <u>991</u> | <u>\$ 3.68</u> |
| Dilutive effect of stock compensation plans | | 16 | | | 20 | | | 21 | |
| Diluted EPS: | | | | | | | | | |
| Net income | \$ 5,017 | | | \$ 5,580 | | | \$ 3,682 | | |
| Income allocated to RSUs | (31) | | | (42) | | | (33) | | |
| Income allocated to common stock | <u>\$ 4,986</u> | <u>952</u> | <u>\$ 5.24</u> | <u>\$ 5,538</u> | <u>990</u> | <u>\$ 5.59</u> | <u>\$ 3,649</u> | <u>1,012</u> | <u>\$ 3.61</u> |

Potentially dilutive securities representing 6 million, 4 million and 6 million shares of common stock that were outstanding in 2019, 2018 and 2017 respectively, were excluded from the computation of diluted earnings per common share during 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, which are detailed below. See Note 6 for additional information.

- *Cash equivalents and short-term investments* – We consider investments in available-for-sale debt securities with maturities of 90 days or less from the date of our investment to be cash equivalents. We consider investments in available-for-sale 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.

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.

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

Goodwill 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 7 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 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.

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 may 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

Accounting Standards Update (ASU) No. 2016-02, Leases (Topic 842)

We adopted ASU No. 2016-02, *Leases* (ASC 842) effective January 1, 2019, using the modified retrospective transition method applied to leases existing at, or entered into after, the adoption date. The reported results for 2019 reflect the application of the new accounting guidance, while the reported results for prior periods are not adjusted and continue to be reported in accordance with our historical accounting under ASC 840, *Leases*. In addition, we elected the package of practical expedients permitted under the transition guidance that allowed us to apply prior conclusions related to lease definition, classification and initial direct costs.

The adoption of the new standard resulted in the recognition of \$229 million of lease liabilities with corresponding lease assets as of January 1, 2019. The standard did not materially impact our results of operations and had no impact on cash flows.

Other standards

The following standards were also adopted:

| ASU | Description | Adopted Date |
|-----------------|--|-----------------|
| ASU No. 2017-12 | <i>Derivatives and Hedging (Topic 815): Targeted Improvements to Accounting for Hedging Activities</i> | January 1, 2019 |
| ASU No. 2018-14 | <i>Compensation – Retirement Benefits – Defined Benefit Plans – General (Subtopic 715-20): Disclosure Framework – Changes to the Disclosure Requirements for Defined Benefit Plans</i> | January 1, 2019 |

Changes in accounting standards – standards not yet adopted

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 being incurred. Credit losses relating to available-for-sale debt securities will be recorded through an allowance for credit losses rather than as a reduction to the amortized cost basis of the securities. We are adopting this standard effective January 1, 2020, applying the guidance on a modified retrospective basis. In preparation for adoption of the standard, we have updated certain policies and related processes, but this standard will not have a material impact on our financial position or results of operations.

Other standards

We are evaluating the impact of the following standards, but we do not expect them to have a material impact on our financial position or results of operations. We are adopting these standards as of their effective dates.

| ASU | Description | Effective Date |
|-----------------|--|-----------------|
| ASU No. 2018-13 | <i>Fair Value Measurement (Topic 820): Disclosure Framework – Changes to the Disclosure Requirements for Fair Value Measurement</i> | January 1, 2020 |
| ASU No. 2018-15 | <i>Intangibles – Goodwill and Other – Internal-Use Software (Subtopic 350-40): Customer’s Accounting for Implementation Costs Incurred in a Cloud Computing Arrangement That Is a Service Contract</i> | January 1, 2020 |

3. Stock compensation

We have stock options outstanding to participants under long-term incentive plans. 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, generally vest ratably over four years, and continue to vest after the option recipient retires.

We also have RSUs outstanding to participants under long-term incentive plans. Each RSU represents the right to receive one share of TI common stock, issued on the vesting date, which is generally four years after the date of grant. 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 director deferred compensation accounts.

We also have an employee stock purchase plan (ESPP) 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% of the fair market value on the exercise date.

Total stock compensation expense recognized is as follows:

| | For Years Ended December 31, | | |
|-------|------------------------------|--------|--------|
| | 2019 | 2018 | 2017 |
| COR | \$ 21 | \$ 25 | \$ 36 |
| R&D | 66 | 69 | 59 |
| SG&A | 130 | 138 | 147 |
| Total | \$ 217 | \$ 232 | \$ 242 |

These amounts include expenses related to non-qualified stock options, RSUs and stock options offered under our ESPP and are net of estimated forfeitures.

We recognize compensation expense for non-qualified stock options and RSUs on a straight-line basis over the minimum service period required for vesting of the award, adjusting for estimated forfeitures based on historical activity. Awards issued to employees who are retirement eligible or nearing retirement eligibility are expensed on an accelerated basis. Options issued under our ESPP are expensed over a three-month period.

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, | | |
|---|------------------------------|----------|----------|
| | 2019 | 2018 | 2017 |
| Weighted average grant date fair value, per share | \$ 22.08 | \$ 23.20 | \$ 16.49 |
| Weighted average assumptions used: | | | |
| Expected volatility | 26 % | 23 % | 24 % |
| Expected lives (in years) | 7.1 | 7.2 | 7.2 |
| Risk-free interest rates | 2.66 % | 2.57 % | 2.36 % |
| Expected dividend yields | 2.95 % | 2.25 % | 2.52 % |

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 ESPP 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.

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 per Share | Shares | Weighted Average Grant Date Fair Value per Share |
| Outstanding grants, December 31, 2018 | 39,905,454 | \$ 56.10 | 7,305,543 | \$ 66.72 |
| Granted | 4,559,093 | 104.51 | 1,142,974 | 106.58 |
| Stock options exercised/RSUs vested | (11,529,174) | 44.68 | (2,370,762) | 52.74 |
| Forfeited and expired | (441,429) | 83.89 | (179,955) | 81.57 |
| Outstanding grants, December 31, 2019 | 32,493,944 | 66.57 | 5,897,800 | 79.62 |

The weighted average grant date fair values per share of RSUs granted in 2019, 2018 and 2017 were \$106.58, \$110.05 and \$79.52, respectively. In 2019, 2018 and 2017, the total grant date fair values of shares vested from RSU grants were \$125 million, \$123 million and \$149 million, respectively.

As of December 31, 2019, the number of shares remaining available for future issuance under these plans was 45,082,425.

Summarized information about stock options outstanding as of December 31, 2019, is as follows:

| Exercise Price Range | Stock Options Outstanding | | | Options Exercisable | |
|----------------------|-----------------------------|---|---|-----------------------------|---|
| | Number Outstanding (Shares) | Weighted Average Remaining Contractual Life (Years) | Weighted Average Exercise Price per Share | Number Exercisable (Shares) | Weighted Average Exercise Price per Share |
| \$ 23.05 to 127.35 | 32,493,944 | 5.9 | \$ 66.57 | 19,646,782 | \$ 50.82 |

In 2019, 2018 and 2017, 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 \$819 million, \$561 million and \$632 million, respectively.

Summarized information as of December 31, 2019, 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) | 32,001,396 | 19,646,782 |
| Weighted average remaining contractual life (in years) | 5.8 | 4.6 |
| Weighted average exercise price per share | \$ 66.03 | \$ 50.82 |
| Intrinsic value (millions of dollars) | \$ 1,992 | \$ 1,522 |

(a) Includes effects of expected forfeitures. Excluding the effects of expected forfeitures, the aggregate intrinsic value of stock options outstanding was \$2.01 billion.

As of December 31, 2019, total future compensation related to equity awards not yet recognized in our Consolidated Statements of Income was \$226 million, consisting of \$98 million related to unvested stock options and \$128 million related to unvested RSUs. The \$226 million is expected to be recognized as follows: \$113 million in 2020, \$72 million in 2021, \$37 million in 2022 and \$4 million in 2023.

Employee stock purchase plan

Options outstanding under the ESPP as of December 31, 2019, had an exercise price equal to 85% of the fair market value of TI common stock on the date of automatic exercise. The automatic exercise occurred on January 2, 2020, resulting in an exercise price of \$110.14 per share. Of the total outstanding options, none were exercisable as of December 31, 2019.

ESPP transactions are as follows:

| | Shares | Exercise Price |
|--|------------------|----------------|
| Outstanding grants, December 31, 2018 | 229,836 | \$ 80.29 |
| Granted | 742,819 | 102.34 |
| Exercised | (798,806) | 94.30 |
| Outstanding grants, December 31, 2019 | 173,849 | 110.14 |

The weighted average grant date fair values per share of options granted under the ESPP in 2019, 2018 and 2017 were \$18.05, \$15.43 and \$12.99, respectively. The total intrinsic value of options exercised under these plans was \$13 million in 2019, 2018 and 2017.

As of December 31, 2019, the number of shares remaining available for future issuance under this plan was 33,812,282.

Effect on shares outstanding and treasury shares

Treasury shares were acquired in connection with the board-authorized stock repurchase program. As of December 31, 2019, \$13.18 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, 2016 | | | 744,831,978 |
| Repurchases | | | 30,570,129 |
| Shares used for: | | | |
| Stock options/RSUs | (13,313,019) | (4,419,464) | |
| Stock applied to taxes | — | 1,058,100 | |
| ESPP | (1,065,757) | — | |
| Director deferred stock units | — | — | (4,750) |
| Total issued | (14,378,776) | (3,361,364) | (17,740,140) |
| Balance, December 31, 2017 | | | 757,657,217 |
| Repurchases | | | 49,482,220 |
| Shares used for: | | | |
| Stock options/RSUs | (8,432,458) | (2,769,994) | |
| Stock applied to taxes | — | 553,720 | |
| ESPP | (819,878) | — | |
| Director deferred stock units | — | — | (5,181) |
| Total issued | (9,252,336) | (2,216,274) | (11,468,610) |
| Balance, December 31, 2018 | | | 795,665,646 |
| Repurchases | | | 27,398,701 |
| Shares used for: | | | |
| Stock options/RSUs | (11,529,174) | (2,370,762) | |
| Stock applied to taxes | — | 490,347 | |
| ESPP | (798,806) | — | |
| Director deferred stock units | — | — | (71,571) |
| Total issued | (12,327,980) | (1,880,415) | (14,208,395) |
| Balance, December 31, 2019 | | | 808,784,381 |

The effects on cash flows are as follows:

| | For Years Ended December 31, | | |
|--|------------------------------|--------|--------|
| | 2019 | 2018 | 2017 |
| Proceeds from common stock transactions (a) | \$ 539 | \$ 373 | \$ 483 |
| Tax benefit realized from stock compensation | \$ 224 | \$ 179 | \$ 341 |
| Reduction to deferred tax asset | (49) | (43) | (91) |
| Excess tax benefit for stock compensation | \$ 175 | \$ 136 | \$ 250 |

(a) Net of taxes paid for employee shares withheld of \$52 million, \$60 million and \$83 million in 2019, 2018 and 2017, respectively.

4. Income taxes

Income before income taxes is comprised of the following components:

| | For Years Ended December 31, | | |
|----------|------------------------------|-----------------|-----------------|
| | 2019 | 2018 | 2017 |
| U.S. | \$ 4,915 | \$ 5,672 | \$ 5,130 |
| Non-U.S. | 813 | 1,014 | 950 |
| Total | <u>\$ 5,728</u> | <u>\$ 6,686</u> | <u>\$ 6,080</u> |

Provision for income taxes is comprised of the following components:

| | For Years Ended December 31, | | | | | | | | |
|--------------|------------------------------|--------------|---------------|-----------------|-----------------|-----------------|-----------------|---------------|-----------------|
| | 2019 | | | 2018 | | | 2017 | | |
| | Current | Deferred | Total | Current | Deferred | Total | Current | Deferred | Total |
| U.S. federal | \$ 483 | \$ 25 | \$ 508 | \$ 979 | \$ (98) | \$ 881 | \$ 2,101 | \$ 51 | \$ 2,152 |
| Non-U.S. | 135 | 56 | 191 | 225 | (8) | 217 | 173 | 61 | 234 |
| U.S. state | 12 | — | 12 | 7 | 1 | 8 | 12 | — | 12 |
| Total | <u>\$ 630</u> | <u>\$ 81</u> | <u>\$ 711</u> | <u>\$ 1,211</u> | <u>\$ (105)</u> | <u>\$ 1,106</u> | <u>\$ 2,286</u> | <u>\$ 112</u> | <u>\$ 2,398</u> |

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, | | |
|--|------------------------------|---------------|---------------|
| | 2019 | 2018 | 2017 |
| U.S. statutory income tax rate | 21.0 % | 21.0 % | 35.0 % |
| U.S. tax benefit for foreign derived intangible income | (4.9) | (5.3) | — |
| U.S. excess tax benefit for stock compensation | (3.1) | (2.0) | (4.1) |
| U.S. R&D tax credit | (1.4) | (1.3) | (1.1) |
| Non-U.S. effective tax rates | 0.3 | 0.1 | (2.5) |
| U.S. Tax Act transitional non-cash expense | — | 4.2 | — |
| U.S. Tax Act enactment-date effects and measurement period adjustments | — | (0.7) | 12.7 |
| U.S. tax benefit for manufacturing | — | — | (1.6) |
| Other | 0.5 | 0.5 | 1.0 |
| Effective tax rate | <u>12.4 %</u> | <u>16.5 %</u> | <u>39.4 %</u> |

The U.S. Tax Cuts and Jobs Act (the Tax Act) was enacted on December 22, 2017. The Tax Act reduces the U.S. statutory income tax rate from 35% to 21% and requires companies to pay a one-time tax on indefinitely reinvested earnings of certain non-U.S. subsidiaries that were previously tax deferred. We applied the guidance in Staff Accounting Bulletin No. 118 when accounting for the enactment-date effects of the Tax Act in 2017 and throughout 2018. As of December 31, 2018, we completed our accounting for the enactment-date income tax effects of the Tax Act. We booked a provisional amount of \$773 million in 2017 and reduced our provisional amount by \$44 million in 2018, for a net of \$729 million.

The earnings represented by non-cash operating assets, such as fixed assets and inventory, will continue to be permanently reinvested outside the United States. Provisions of the Tax Act, such as the one-time tax on indefinitely reinvested earnings and the global intangible low-taxed income (GILTI) tax for years beginning in 2018, eliminate any additional U.S. taxation resulting from repatriation of earnings of non-U.S. subsidiaries to the United States. Consequently, no U.S. tax provision has been made for the future remittance of these earnings. However, withholding or distribution taxes in certain non-U.S. jurisdictions will be incurred upon repatriation of available cash to the United States. A provision has been made for deferred taxes on these undistributed earnings to the extent that repatriation of the available cash to the United States is expected to result in a tax liability. As of December 31, 2019, we have no basis differences that would result in material unrecognized deferred tax liabilities.

We have made an allowable policy election to account for the effects of GILTI as a component of income tax expense in the period in which the tax is incurred.

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

| | December 31, | |
|--|--------------|--------|
| | 2019 | 2018 |
| Deferred tax assets: | | |
| Deferred loss and tax credit carryforwards | \$ 213 | \$ 247 |
| Accrued expenses | 113 | 129 |
| Stock compensation | 109 | 122 |
| Inventories and related reserves | 109 | 107 |
| Retirement costs for defined benefit and retiree health care | 49 | 80 |
| Total deferred tax assets, before valuation allowance | 593 | 685 |
| Valuation allowance | (180) | (172) |
| Total deferred tax assets, after valuation allowance | 413 | 513 |
| Deferred tax liabilities: | | |
| Property, plant and equipment | (95) | (10) |
| Acquisition-related intangibles and fair-value adjustments | (82) | (142) |
| International earnings | (62) | (43) |
| Other | (55) | (65) |
| Total deferred tax liabilities | (294) | (260) |
| Net deferred tax asset | \$ 119 | \$ 253 |

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

| | December 31, | |
|--------------------------|--------------|--------|
| | 2019 | 2018 |
| Deferred tax assets | \$ 197 | \$ 295 |
| Deferred tax liabilities | (78) | (42) |
| Net deferred tax asset | \$ 119 | \$ 253 |

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. Valuation allowances increased by \$8 million, \$7 million and \$37 million in 2019, 2018 and 2017, respectively. These changes had no impact to net income in 2019 or 2018.

We have U.S. and non-U.S. tax loss carryforwards of approximately \$6 million, none of which will expire before the year 2029.

Cash payments made for income taxes, net of refunds, were \$570 million, \$705 million and \$1.80 billion in 2019, 2018 and 2017, 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:

| | 2019 | 2018 | 2017 |
|--|--------|---------|---------|
| Balance, January 1 | \$ 286 | \$ 300 | \$ 243 |
| Additions based on tax positions related to the current year | 3 | 3 | 17 |
| Additions for tax positions of prior years | 63 | 1 | 42 |
| Reductions for tax positions of prior years | (41) | — | (1) |
| Settlements with tax authorities | (8) | (18) | (1) |
| Balance, December 31 | \$ 303 | \$ 286 | \$ 300 |
| Interest income (expense) recognized in the year ended December 31 | \$ 9 | \$ (15) | \$ (19) |
| Interest payable as of December 31 | \$ 44 | \$ 49 | \$ 38 |

The liability for uncertain tax positions is a component of other long-term liabilities on our Consolidated Balance Sheets.

All of the \$303 million and \$286 million liabilities for uncertain tax positions as of December 31, 2019 and 2018, respectively, are comprised of positions that, if recognized, would lower the effective tax rate. If these liabilities are ultimately realized, \$2 million and \$30 million of existing deferred tax assets in 2019 and 2018, respectively, would also be realized. It is reasonably possible that the \$303 million liability as of December 31, 2019, could decrease by up to \$249 million in 2020 for the resolution of a tax depreciation-related position.

As of December 31, 2019, the statute of limitations remains open for U.S. federal tax returns for 2013 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 2007 through 2012. The audit of the U.S. federal tax returns for 2013 through 2015 is underway.

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.

5. 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, 2019. Our forward foreign currency exchange contracts outstanding as of December 31, 2019, had a notional value of \$458 million to hedge our non-U.S. dollar net balance sheet exposures, including \$136 million to sell Japanese yen, \$106 million to sell Indian rupees and \$74 million to sell British pounds.

Our investments in cash equivalents, short-term investments and certain long-term investments, as well as our deferred compensation liabilities, are carried at fair value. Our postretirement plan assets are carried at fair value or net asset value per share. 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. As of December 31, 2019, the carrying value of long-term debt, including the current portion, was \$5.80 billion, and the estimated fair value was \$6.29 billion. The estimated fair value is measured using broker-dealer quotes, which are Level 2 inputs. See Note 6 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.

Accounts receivable allowances changed to reflect amounts charged (credited) to operating results by (\$11) million, \$11 million and (\$9) million in 2019, 2018 and 2017, respectively.

Major customer

No end customer accounted for 10% or more of revenue in 2019, 2018 or 2017.

6. Valuation of debt and equity investments and certain liabilities

Debt and equity investments measured at fair value

Available-for-sale debt investments and trading securities are stated at fair value, which is generally based on market prices or broker quotes. See *Fair-value considerations* below. Unrealized gains and losses from available-for-sale debt securities are recorded as an increase or decrease, net of taxes, in AOCI on our Consolidated Balance Sheets. Other-than-temporary impairments on available-for-sale debt securities are recorded 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.

Other equity investments

Our other investments include equity-method investments and non-marketable equity investments, which are not measured at fair value. These investments consist of interests in venture capital funds and other non-marketable equity securities. Gains and losses from equity-method investments are recognized in OI&E based on our ownership share of the investee's financial results.

Non-marketable equity securities are measured at cost with adjustments for observable changes in price or impairments. Gains and losses on non-marketable equity investments are recognized in OI&E.

Details of our investments are as follows:

| | December 31, 2019 | | | December 31, 2018 | | |
|--|------------------------------|---------------------------|--------------------------|------------------------------|---------------------------|--------------------------|
| | Cash and Cash Equivalents | Short-Term Investments | Long-Term Investments | Cash and Cash Equivalents | Short-Term Investments | Long-Term Investments |
| Measured at fair value: | | | | | | |
| Available-for-sale debt securities: | | | | | | |
| Money market funds | \$ 1,213 | \$ — | \$ — | \$ 747 | \$ — | \$ — |
| Corporate obligations | 174 | 1,216 | — | 473 | 748 | — |
| U.S. government agency and Treasury securities | 604 | 1,734 | — | 988 | 1,047 | — |
| Trading securities: | | | | | | |
| Mutual funds | — | — | 272 | — | — | 226 |
| Total | 1,991 | 2,950 | 272 | 2,208 | 1,795 | 226 |
| Other measurement basis: | | | | | | |
| Equity-method investments | — | — | 24 | — | — | 21 |
| Non-marketable equity investments | — | — | 4 | — | — | 4 |
| Cash on hand | 446 | — | — | 230 | — | — |
| Total | \$ 2,437 | \$ 2,950 | \$ 300 | \$ 2,438 | \$ 1,795 | \$ 251 |

As of December 31, 2019 and 2018, 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 2019, 2018 or 2017.

In 2019, 2018 and 2017, the proceeds from sales, redemptions and maturities of short-term available-for-sale investments were \$2.31 billion, \$6.71 billion and \$4.10 billion, respectively. Gross realized gains and losses from these sales were not material.

The following table presents the aggregate maturities of our available-for-sale debt investments as of December 31, 2019:

| | Fair Value |
|------------------|-------------------|
| One year or less | \$ 4,921 |
| One to two years | 20 |

There were no other-than-temporary declines and impairments in the values of our debt investments in 2019, 2018 or 2017.

In 2019, 2018 and 2017, net gains and losses associated with our equity investments were \$32 million, \$5 million and \$4 million, respectively. These amounts include realized gains of \$29 million, \$11 million and \$6 million on equity investments sold during 2019, 2018 and 2017, respectively.

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 described 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, 2019 and 2018, we had no Level 3 assets or liabilities.

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, 2019 | | | December 31, 2018 | | |
|--|--------------------------|-----------------|-----------------|--------------------------|-----------------|-----------------|
| | Level 1 | Level 2 | Total | Level 1 | Level 2 | Total |
| Assets: | | | | | | |
| Money market funds | \$ 1,213 | \$ — | \$ 1,213 | \$ 747 | \$ — | \$ 747 |
| Corporate obligations | — | 1,390 | 1,390 | — | 1,221 | 1,221 |
| U.S. government agency and Treasury securities | 2,338 | — | 2,338 | 2,035 | — | 2,035 |
| Mutual funds | 272 | — | 272 | 226 | — | 226 |
| Total assets | <u>\$ 3,823</u> | <u>\$ 1,390</u> | <u>\$ 5,213</u> | <u>\$ 3,008</u> | <u>\$ 1,221</u> | <u>\$ 4,229</u> |
| Liabilities: | | | | | | |
| Deferred compensation | \$ 298 | \$ — | \$ 298 | \$ 246 | \$ — | \$ 246 |
| Total liabilities | <u>\$ 298</u> | <u>\$ —</u> | <u>\$ 298</u> | <u>\$ 246</u> | <u>\$ —</u> | <u>\$ 246</u> |

7. Goodwill and acquisition-related intangibles

Goodwill by segment as of December 31, 2019 and 2018, 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 6. In 2019, 2018 and 2017, we determined no impairment was indicated.

The components of acquisition-related intangibles are as follows:

| | Amortization Period (Years) | December 31, 2019 | | | December 31, 2018 | | |
|------------------------|--------------------------------|--------------------------|-----------------------------|--------|--------------------------|-----------------------------|--------|
| | | Gross Carrying Amount | Accumulated Amortization | Net | Gross Carrying Amount | Accumulated Amortization | Net |
| Developed technology | 7 – 10 | \$ 2,000 | \$ 1,660 | \$ 340 | \$ 2,125 | \$ 1,573 | \$ 552 |
| Customer relationships | 8 | — | — | — | 810 | 734 | 76 |
| Total | | \$ 2,000 | \$ 1,660 | \$ 340 | \$ 2,935 | \$ 2,307 | \$ 628 |

Acquisition charges

Acquisition charges represent the ongoing amortization of intangible assets resulting from the acquisition of National Semiconductor Corporation. These amounts are included in Other for segment reporting purposes, consistent with how management measures the performance of its segments.

Amortization of acquisition-related intangibles was \$288 million in 2019 and \$318 million in 2018 and 2017. Fully amortized assets are written off against accumulated amortization. The remaining estimated amortization is \$198 million in 2020 and \$142 million in 2021.

8. 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 United States 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 pretax and post-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% 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% of the employee's annual eligible earnings, plus an employer-matching contribution of up to 4% of the employee's annual eligible earnings. Employees hired after December 31, 2003, do not receive the fixed employer contribution of 2% of the employee's annual eligible earnings.

As of December 31, 2019 and 2018, as a result of employees' elections, TI's U.S. defined contribution plans held shares of TI common stock totaling 8 million shares and 9 million shares valued at \$988 million and \$821 million, respectively. Dividends paid on these shares in 2019 and 2018 were \$26 million and \$24 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 \$61 million in 2019, 2018 and 2017.

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 on 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, 2019 and 2018, as a result of employees' elections, TI's non-U.S. defined contribution plans held TI common stock valued at \$28 million and \$23 million, respectively. Dividends paid on these shares of TI common stock in 2019 and 2018 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:

| | U.S. Defined Benefit | | | U.S. Retiree Health Care | | | Non-U.S. Defined Benefit | | |
|--|----------------------|-------|-------|--------------------------|------|------|--------------------------|-------|-------|
| | 2019 | 2018 | 2017 | 2019 | 2018 | 2017 | 2019 | 2018 | 2017 |
| Service cost | \$ 18 | \$ 19 | \$ 22 | \$ 3 | \$ 5 | \$ 5 | \$ 31 | \$ 36 | \$ 37 |
| Interest cost | 38 | 35 | 42 | 14 | 15 | 17 | 43 | 45 | 44 |
| Expected return on plan assets | (41) | (42) | (41) | (14) | (15) | (17) | (86) | (67) | (62) |
| Amortization of prior service cost (credit) | — | — | — | (1) | (3) | (4) | 1 | (1) | (2) |
| Recognized net actuarial loss | 9 | 17 | 14 | — | 2 | 3 | 29 | 20 | 28 |
| Net periodic benefit costs | 24 | 29 | 37 | 2 | 4 | 4 | 18 | 33 | 45 |
| Settlement losses | 10 | 23 | 36 | — | — | — | 3 | 3 | 2 |
| Total, including other postretirement losses | \$ 34 | \$ 52 | \$ 73 | \$ 2 | \$ 4 | \$ 4 | \$ 21 | \$ 36 | \$ 47 |

All defined benefit and retiree health care benefit plan expense components other than service cost are recognized in OI&E in our Consolidated Statements of Income. Service cost is recognized within operating profit.

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 | |
|---|----------------------|--------|--------------------------|---------|--------------------------|----------|
| | 2019 | 2018 | 2019 | 2018 | 2019 | 2018 |
| Change in plan benefit obligation | | | | | | |
| Benefit obligation at beginning of year: | \$ 874 | \$ 998 | \$ 361 | \$ 414 | \$ 2,411 | \$ 2,469 |
| Service cost | 18 | 19 | 3 | 5 | 31 | 36 |
| Interest cost | 38 | 35 | 14 | 15 | 43 | 45 |
| Participant contributions | — | — | 13 | 11 | 7 | 7 |
| Benefits paid | (11) | (10) | (41) | (41) | (103) | (87) |
| Settlements | (66) | (100) | — | — | (12) | (16) |
| Curtailments | — | — | — | — | (1) | — |
| Actuarial loss (gain) | 107 | (68) | 9 | (43) | 193 | 6 |
| Plan amendments | — | — | — | — | — | 7 |
| Effects of exchange rate changes | — | — | — | — | 12 | (56) |
| Benefit obligation at end of year | \$ 960 | \$ 874 | \$ 359 | \$ 361 | \$ 2,581 | \$ 2,411 |
| Change in plan assets | | | | | | |
| Fair value of plan assets at beginning of year: | \$ 869 | \$ 995 | \$ 330 | \$ 394 | \$ 2,410 | \$ 2,593 |
| Actual return on plan assets | 185 | (56) | 53 | (12) | 337 | (52) |
| Employer contributions (qualified plans) | — | 20 | 1 | 1 | 9 | 19 |
| Employer contributions (non-qualified plans) | 10 | 20 | — | — | — | — |
| Participant contributions | — | — | 13 | 11 | 7 | 7 |
| Benefits paid | (11) | (10) | (41) | (41) | (103) | (87) |
| Settlements | (66) | (100) | — | — | (12) | (16) |
| Effects of exchange rate changes | — | — | — | — | 13 | (54) |
| Other | — | — | — | (23) | — | — |
| Fair value of plan assets at end of year | \$ 987 | \$ 869 | \$ 356 | \$ 330 | \$ 2,661 | \$ 2,410 |
| Funded status at end of year | \$ 27 | \$ (5) | \$ (3) | \$ (31) | \$ 80 | \$ (1) |

The actuarial loss (gain) for all pension plans was primarily related to a change in the discount rate used to measure the benefit obligations of those plans in 2019 and 2018.

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 |
|--|----------------------|--------------------------|--------------------------|---------|
| 2019 | | | | |
| Overfunded retirement plans | \$ 73 | \$ — | \$ 145 | \$ 218 |
| Accrued expenses and other liabilities & other long-term liabilities | (17) | — | (4) | (21) |
| Underfunded retirement plans | (29) | (3) | (61) | (93) |
| Funded status at end of 2019 | \$ 27 | \$ (3) | \$ 80 | \$ 104 |
| 2018 | | | | |
| Overfunded retirement plans | \$ 40 | \$ — | \$ 52 | \$ 92 |
| Accrued expenses and other liabilities & other long-term liabilities | (8) | — | (3) | (11) |
| Underfunded retirement plans | (37) | (31) | (50) | (118) |
| Funded status at end of 2018 | \$ (5) | \$ (31) | \$ (1) | \$ (37) |

Contributions to the plans meet or exceed all minimum funding requirements. We expect to contribute about \$20 million to our retirement benefit plans in 2020.

Accumulated benefit obligations, which are generally less than the projected benefit obligations as they exclude the impact of future salary increases, were \$878 million and \$793 million as of December 31, 2019 and 2018, respectively, for the U.S. defined benefit plans, and \$2.46 billion and \$2.29 billion as of December 31, 2019 and 2018, respectively, for the non-U.S. defined benefit plans.

The change in AOCI is as follows:

| | U.S. Defined Benefit | U.S. Retiree Health Care | | Non-U.S. Defined Benefit | | Total | |
|---|----------------------|--------------------------|----------------------|--------------------------|----------------------|--------------------|----------------------|
| | Net 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, 2018 | \$ 135 | \$ 21 | \$ (5) | \$ 317 | \$ 3 | \$ 473 | \$ (2) |
| Changes in AOCI by category: | | | | | | | |
| Adjustments | (36) | (31) | — | (58) | — | (125) | — |
| Recognized within net income | (19) | — | 1 | (32) | (1) | (51) | — |
| Tax effect | 11 | 7 | — | 32 | — | 50 | — |
| Total change to AOCI | (44) | (24) | 1 | (58) | (1) | (126) | — |
| AOCI balance, net of taxes, December 31, 2019 | \$ 91 | \$ (3) | \$ (4) | \$ 259 | \$ 2 | \$ 347 | \$ (2) |

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 6.

| | December 31, 2019 | | | |
|--|-------------------|---------------|-----------------|-----------------|
| | Level 1 | Level 2 | Other (a) | Total |
| Assets of U.S. defined benefit plan: | | | | |
| Fixed income securities and cash equivalents | \$ — | \$ — | \$ 640 | \$ 640 |
| Equity securities | — | — | 347 | 347 |
| Total | \$ — | \$ — | \$ 987 | \$ 987 |
| Assets of U.S. retiree health care plan: | | | | |
| Fixed income securities and cash equivalents | \$ 62 | \$ — | \$ 168 | \$ 230 |
| Equity securities | — | — | 126 | 126 |
| Total | \$ 62 | \$ — | \$ 294 | \$ 356 |
| Assets of non-U.S. defined benefit plans: | | | | |
| Fixed income securities and cash equivalents | \$ 59 | \$ 126 | \$ 1,762 | \$ 1,947 |
| Equity securities | 41 | 2 | 671 | 714 |
| Total | \$ 100 | \$ 128 | \$ 2,433 | \$ 2,661 |

(a) Consists of bond index and equity index funds, measured at net asset value per share, as well as cash equivalents.

| | December 31, 2018 | | | |
|--|-------------------|---------|-----------|----------|
| | Level 1 | Level 2 | Other (a) | Total |
| Assets of U.S. defined benefit plan: | | | | |
| Fixed income securities and cash equivalents | \$ — | \$ — | \$ 563 | \$ 563 |
| Equity securities | — | — | 306 | 306 |
| Total | \$ — | \$ — | \$ 869 | \$ 869 |
| Assets of U.S. retiree health care plan: | | | | |
| Fixed income securities and cash equivalents | \$ 59 | \$ — | \$ 155 | \$ 214 |
| Equity securities | — | — | 116 | 116 |
| Total | \$ 59 | \$ — | \$ 271 | \$ 330 |
| Assets of non-U.S. defined benefit plans: | | | | |
| Fixed income securities and cash equivalents | \$ 47 | \$ 139 | \$ 1,602 | \$ 1,788 |
| Equity securities | 33 | 1 | 588 | 622 |
| Total | \$ 80 | \$ 140 | \$ 2,190 | \$ 2,410 |

(a) Consists of bond index and equity index funds, measured at net asset value per share, as well as cash equivalents.

The investments in our major benefit plans largely consist of low-cost, broad-market index funds to mitigate risks of concentration within market sectors. Our investment policy is designed to better match the interest rate sensitivity of the plan assets and liabilities. The appropriate mix of equity and bond investments is determined primarily through the use of detailed asset-liability modeling studies that look to balance the impact of changes in the discount rate against the need to provide asset growth to cover future service cost. Most of our plans around the world have a greater proportion of fixed income securities with return characteristics that are more closely aligned with changes in the liabilities caused by discount rate volatility.

Assumptions and investment policies

| | U.S. Defined Benefit | | U.S. Retiree Health Care | | Non-U.S. Defined Benefit | |
|--|----------------------|-------|--------------------------|-------|--------------------------|-------|
| | 2019 | 2018 | 2019 | 2018 | 2019 | 2018 |
| Weighted average assumptions used to determine benefit obligations: | | | | | | |
| Discount rate | 3.62% | 4.37% | 3.63% | 4.30% | 1.46% | 1.85% |
| Long-term pay progression | 3.30% | 3.30% | n/a | n/a | 3.06% | 2.96% |
| Weighted average assumptions used to determine net periodic benefit cost: | | | | | | |
| Discount rate | 4.35% | 3.77% | 4.30% | 3.63% | 1.85% | 1.84% |
| Long-term rate of return on plan assets | 4.90% | 4.80% | 4.40% | 4.10% | 3.62% | 2.58% |
| Long-term pay progression | 3.30% | 3.30% | n/a | n/a | 3.03% | 2.96% |

We utilize a variety of methods to select an appropriate discount rate depending on the depth of the corporate bond market in the country in which the benefit plan operates. In the United States, we use a settlement approach whereby a portfolio of bonds is selected from the universe of actively traded high-quality U.S. corporate bonds. The selected portfolio is designed to provide cash flows sufficient to pay the plan's expected benefit payments when due. The resulting discount rate reflects the rate of return of the selected portfolio of bonds. For our non-U.S. locations with a sufficient number of actively traded high-quality bonds, an analysis is performed in which the projected cash flows from the defined benefit plans are discounted against a yield curve constructed with an appropriate universe of high-quality corporate bonds available in each country. In this manner, a present value is developed. The discount rate selected is the single equivalent rate that produces the same present value. For countries that lack a sufficient corporate bond market, a government bond index adjusted for an appropriate risk premium is used to establish the discount rate.

Assumptions for the expected long-term rate of return on plan assets are based on future expectations for returns for each asset class and the effect of periodic target asset allocation rebalancing. We adjust the results for the payment of reasonable expenses of the plan from plan assets. We believe our assumptions are appropriate based on the investment mix and long-term nature of the plans' investments. Assumptions used for the non-U.S. defined benefit plans reflect the different economic environments within the various countries.

The target allocation ranges for the plans that hold a substantial majority of the defined benefit assets are as follows:

| | U.S. Defined Benefit | U.S. Retiree Health Care | Non-U.S. Defined Benefit |
|--|----------------------|--------------------------|--------------------------|
| Fixed income securities and cash equivalents | 65% | 65% | 60% – 100% |
| Equity securities | 35% | 35% | 0% – 40% |

We rebalance the plans' investments when they are outside the target allocation ranges.

Weighted average asset allocations as of December 31 are as follows:

| | U.S. Defined Benefit | | U.S. Retiree Health Care | | Non-U.S. Defined Benefit | |
|--|----------------------|------|--------------------------|------|--------------------------|------|
| | 2019 | 2018 | 2019 | 2018 | 2019 | 2018 |
| Fixed income securities and cash equivalents | 65% | 65% | 65% | 65% | 73% | 74% |
| Equity securities | 35% | 35% | 35% | 35% | 27% | 26% |

None of the plan assets related to the defined benefit pension plans and retiree health care benefit plan are directly invested in TI common stock.

The following assumed future benefit payments to plan participants in the next 10 years are used to measure our benefit obligations. Almost all of the payments, which may vary significantly from these assumptions, will be made from plan assets and not from company assets.

| | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 – 2029 |
|--------------------------|-------|--------|-------|-------|-------|-------------|
| U.S. Defined Benefit | \$ 99 | \$ 118 | \$ 85 | \$ 90 | \$ 87 | \$ 441 |
| U.S. Retiree Health Care | 32 | 30 | 29 | 27 | 26 | 115 |
| Non-U.S. Defined Benefit | 95 | 96 | 99 | 100 | 104 | 542 |

Assumed health care cost trend rates for the U.S. retiree health care benefit plan as of December 31 are as follows:

| | 2019 | 2018 |
|---|-------|-------|
| Assumed health care cost trend rate for next year | 7.00% | 7.25% |
| Ultimate trend rate | 5.00% | 5.00% |
| Year in which ultimate trend rate is reached | 2028 | 2028 |

Deferred compensation plans

We have deferred compensation plans that allow U.S. employees whose base salary and management responsibility exceed a certain level to defer receipt of a portion of their cash compensation. Payments under these plans are made based on the participant's distribution election and plan balance. Participants can earn a return on their deferred compensation based on notional investments in the same investment funds that are offered in our defined contribution plans.

As of December 31, 2019, our liability to participants of the deferred compensation plans was \$298 million and is recorded in other long-term liabilities on our Consolidated Balance Sheets. This amount reflects the accumulated participant deferrals and earnings thereon as of that date. As of December 31, 2019, we held \$272 million in mutual funds related to these plans that are recorded in long-term investments on our Consolidated Balance Sheets, and serve as an economic hedge against changes in fair values of our other deferred compensation liabilities. We record changes in the fair value of the liability and the related investment in SG&A as discussed in Note 6.

9. Debt and lines of credit

Short-term borrowings

We maintain a line of credit to support commercial paper borrowings, if any, and to provide additional liquidity through bank loans. As of December 31, 2019, we had a variable-rate revolving credit facility from a consortium of investment-grade banks that allows us to borrow up to \$2 billion until March 2024. The interest rate on borrowings under this credit facility, if drawn, is indexed to the applicable London Interbank Offered Rate (LIBOR). As of December 31, 2019, our credit facility was undrawn, and we had no commercial paper outstanding.

Long-term debt

We retired \$750 million of maturing debt in August 2019.

In March 2019, we issued a principal amount of \$750 million of fixed-rate, long-term debt due in 2039. We incurred \$7 million of issuance and other related costs. The proceeds of the offering were \$743 million, net of the original issuance discount, and were used for general corporate purposes.

In September 2019, we issued a principal amount of \$750 million of fixed-rate, long-term debt due in 2029. We incurred \$5 million of issuance and other related costs. The proceeds of the offering were \$748 million, net of the original issuance discount, and were used for general corporate purposes.

We retired \$500 million of maturing debt in May 2018.

In the second quarter of 2018, we issued an aggregate principal amount of \$1.5 billion of fixed-rate, long-term debt due in 2048, comprised of the issuance of \$1.3 billion in May 2018 and an additional \$200 million in June 2018. We incurred \$16 million of issuance and other related costs. The proceeds of the offering were \$1.5 billion, net of the original issuance discount and premium, and were used for general corporate purposes.

We retired \$250 million of maturing debt in March 2017 and another \$375 million in June 2017.

In May 2017, we issued an aggregate principal amount of \$600 million of fixed-rate, long-term debt. The offering consisted of the reissuance of \$300 million of 2.75% notes due in 2021 at a premium and the issuance of \$300 million of 2.625% notes due in 2024 at a discount. We incurred \$3 million of issuance and other related costs. The proceeds of the offerings were \$605 million, net of the original issuance discount and premium, and were used for the repayment of maturing debt and general corporate purposes.

In November 2017, we issued a principal amount of \$500 million of fixed-rate, long-term debt due in 2027. We incurred \$3 million of issuance and other related costs. The proceeds of the offering were \$494 million, net of the original issuance discount, and were used for general corporate purposes.

Long-term debt outstanding is as follows:

| | December 31, | |
|--|--------------|----------|
| | 2019 | 2018 |
| Notes due 2019 at 1.65% | \$ — | \$ 750 |
| Notes due 2020 at 1.75% | 500 | 500 |
| Notes due 2021 at 2.75% | 550 | 550 |
| Notes due 2022 at 1.85% | 500 | 500 |
| Notes due 2023 at 2.25% | 500 | 500 |
| Notes due 2024 at 2.625% | 300 | 300 |
| Notes due 2027 at 2.90% | 500 | 500 |
| Notes due 2029 at 2.25% | 750 | — |
| Notes due 2039 at 3.875% | 750 | — |
| Notes due 2048 at 4.15% | 1,500 | 1,500 |
| Total debt | 5,850 | 5,100 |
| Net unamortized discounts, premiums and issuance costs | (47) | (32) |
| Total debt, including net unamortized discounts, premiums and issuance costs | 5,803 | 5,068 |
| Current portion of long-term debt | (500) | (749) |
| Long-term debt | \$ 5,303 | \$ 4,319 |

Interest and debt expense was \$170 million, \$125 million and \$78 million in 2019, 2018 and 2017, respectively. This was net of the amortized discounts, premiums and issuance costs. Cash payments for interest on long-term debt were \$156 million, \$114 million and \$75 million in 2019, 2018 and 2017, respectively. Capitalized interest was not material.

10. Leases

We conduct certain operations in leased facilities and also lease a portion of our data processing and other equipment. In addition, certain long-term supply agreements to purchase industrial gases are accounted for as operating leases. Lease agreements frequently include renewal provisions and require us to pay real estate taxes, insurance and maintenance costs.

Our leases are included as a component of the following balance sheet lines:

| | December 31, 2019 |
|--|----------------------|
| Other long-term assets | \$ 337 |
| Accrued expenses and other liabilities | \$ 73 |
| Other long-term liabilities | 259 |

Details of our operating leases are as follows:

| | For Year Ended December 31, 2019 |
|---|--|
| Lease cost related to lease liabilities | \$ 66 |
| Variable lease cost | 41 |
| Cash paid for amounts included in the measurement of lease liabilities: | |
| Operating cash flows for lease cost | \$ 60 |
| Lease assets obtained in exchange for new lease liabilities | \$ 167 |
| Weighted average remaining lease term | 8.2 years |
| Weighted average discount rate | 3.37 % |

As of December 31, 2019, we had committed to make the following minimum payments under our non-cancellable operating leases:

| | 2020 | 2021 | 2022 | 2023 | 2024 | Thereafter | Total |
|-------------------------|-------|-------|-------|-------|-------|------------|--------|
| Lease payments | \$ 75 | \$ 63 | \$ 51 | \$ 38 | \$ 28 | \$ 131 | \$ 386 |
| Imputed lease interest | | | | | | | (54) |
| Total lease liabilities | | | | | | | \$ 332 |

As of December 31, 2018, we had committed to make the following minimum payments under our non-cancellable operating leases, as reported under ASC 840:

| | 2019 | 2020 | 2021 | 2022 | 2023 | Thereafter | Total |
|------------------|-------|-------|-------|-------|-------|------------|--------|
| Operating leases | \$ 56 | \$ 46 | \$ 36 | \$ 29 | \$ 18 | \$ 39 | \$ 224 |

11. Commitments and contingencies

Purchase commitments

Our purchase commitments include payments for software licenses and contractual arrangements with suppliers when there is a fixed, non-cancellable payment schedule or when minimum payments are due with a reduced delivery schedule.

As of December 31, 2019, we had committed to make the following minimum payments under our purchase commitments:

| | 2020 | 2021 | 2022 | 2023 | 2024 | Thereafter | Total |
|----------------------|--------|--------|--------|-------|-------|------------|----------|
| Purchase commitments | \$ 452 | \$ 286 | \$ 121 | \$ 70 | \$ 27 | \$ 109 | \$ 1,065 |

Indemnification guarantees

We routinely sell products with an intellectual property indemnification included in the terms of sale. Historically, we have had only minimal, infrequent losses associated with these indemnities. Consequently, we cannot reasonably estimate any future liabilities that may result.

Warranty costs/product liabilities

We accrue for known product-related claims if a loss is probable and can be reasonably estimated. During the periods presented, there have been no material accruals or payments regarding product warranty or product liability. Historically, we have experienced a low rate of payments on product claims. Although we cannot predict the likelihood or amount of any future claims, we do not believe they will have a material adverse effect on our financial condition, results of operations or liquidity. Our stated warranties for semiconductor products obligate us to repair, replace or credit the purchase price of a covered product back to the buyer. Product claim consideration may exceed the price of our products.

General

We are subject to various legal and administrative proceedings. Although it is not possible to predict the outcome of these matters, we believe that the results of these proceedings will not have a material adverse effect on our financial condition, results of operations or liquidity.

12. Supplemental financial information

Restructuring charges/other

Restructuring charges/other are included in Other for segment reporting purposes and are comprised of the following components:

| | For Years Ended December 31, | | |
|-----------------------------|------------------------------|-------------|--------------|
| | 2019 | 2018 | 2017 |
| Restructuring charges (a) | \$ (15) | \$ 6 | \$ 11 |
| Gains on sales of assets | (21) | (3) | — |
| Restructuring charges/other | <u>\$ (36)</u> | <u>\$ 3</u> | <u>\$ 11</u> |

(a) Includes severance and benefits, accelerated depreciation, changes in estimates or other exit costs.

Changes in accrued restructuring balances

| | 2019 | 2018 | 2017 |
|-----------------------|-------------|--------------|--------------|
| Balance, January 1 | \$ 28 | \$ 29 | \$ 40 |
| Restructuring charges | (15) | 6 | 11 |
| Non-cash items (a) | — | (3) | (1) |
| Payments | (13) | (4) | (21) |
| Balance, December 31 | <u>\$ —</u> | <u>\$ 28</u> | <u>\$ 29</u> |

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

The restructuring accrual balances are reported as a component of either accrued expenses and other liabilities or other long-term liabilities on our Consolidated Balance Sheets, depending on the expected timing of payment.

In April 2019, we sold our manufacturing facility in Greenock, Scotland.

In January 2020, we announced a multiyear plan to close our two remaining factories with 150-millimeter production, which are more than 50 years old and located in Sherman and Dallas, Texas. Production will be transitioned from these sites to our more advanced and cost-effective 300-millimeter wafer fabrication facilities in North Texas. We expect this transition to be completed in the next three to five years. Charges for these closures cannot be reasonably estimated until a later phase of the transition.

Other income (expense), net (OI&E)

| | For Years Ended December 31, | | |
|-------------------|------------------------------|--------------|--------------|
| | 2019 | 2018 | 2017 |
| Other income (a) | \$ 197 | \$ 150 | \$ 163 |
| Other expense (b) | (22) | (52) | (88) |
| Total | <u>\$ 175</u> | <u>\$ 98</u> | <u>\$ 75</u> |

(a) Other income includes interest, royalty and lease income, as well as investment gains and losses.

(b) Other expense includes a portion of pension and other retiree benefit costs. It also includes currency gains and losses, tax interest and miscellaneous items.

Property, plant and equipment at cost

| | Depreciable Lives (Years) | December 31, | |
|----------------------------|------------------------------|-----------------|-----------------|
| | | 2019 | 2018 |
| Land | n/a | \$ 126 | \$ 128 |
| Buildings and improvements | 5 – 40 | 2,504 | 2,497 |
| Machinery and equipment | 2 – 10 | 3,110 | 2,800 |
| Total | | <u>\$ 5,740</u> | <u>\$ 5,425</u> |

Other long-term liabilities

| | December 31, | |
|---|-----------------|-----------------|
| | 2019 | 2018 |
| Long-term portion of transition tax on indefinitely reinvested earnings | \$ 506 | \$ 506 |
| Uncertain tax positions | 303 | 286 |
| Deferred compensation plans | 298 | 246 |
| Operating lease liabilities | 259 | — |
| Other | 148 | 152 |
| Total | <u>\$ 1,514</u> | <u>\$ 1,190</u> |

Accumulated other comprehensive income (loss), net of taxes (AOCI)

| | December 31, | |
|--|-----------------|-----------------|
| | 2019 | 2018 |
| Postretirement benefit plans: | | |
| Net actuarial loss | \$ (347) | \$ (473) |
| Prior service credit | 2 | 2 |
| Cash flow hedge derivative instruments | (2) | (2) |
| Total | <u>\$ (347)</u> | <u>\$ (473)</u> |

Details on amounts reclassified out of accumulated other comprehensive income (loss), net of taxes, to net income

Our Consolidated Statements of Comprehensive Income include items that have been recognized within net income in 2019, 2018 and 2017. The table below details where these transactions are recorded in our Consolidated Statements of Income.

| | For Years Ended December 31, | | | Impact to Related Statement of Income Lines |
|---|------------------------------|---------------|---------------|---|
| | 2019 | 2018 | 2017 | |
| Net actuarial losses of defined benefit plans: | | | | |
| Recognized net actuarial loss and settlement losses (a) | \$ 51 | \$ 65 | \$ 83 | Decrease to OI&E |
| Tax effect | (13) | (15) | (27) | Decrease to provision for income taxes |
| Recognized within net income, net of taxes | <u>\$ 38</u> | <u>\$ 50</u> | <u>\$ 56</u> | Decrease to net income |
| | | | | |
| Prior service credit of defined benefit plans: | | | | |
| Amortization of prior service credit (a) | \$ — | \$ (4) | \$ (6) | Increase to OI&E |
| Tax effect | — | 1 | 1 | Increase to provision for income taxes |
| Recognized within net income, net of taxes | <u>\$ —</u> | <u>\$ (3)</u> | <u>\$ (5)</u> | Increase to net income |
| | | | | |
| Derivative instruments: | | | | |
| Amortization of treasury-rate locks | \$ — | \$ — | \$ 1 | Increase to interest and debt expense |
| Tax effect | — | — | — | Decrease to provision for income taxes |
| Recognized within net income, net of taxes | <u>\$ —</u> | <u>\$ —</u> | <u>\$ 1</u> | Decrease to net income |

(a) Detailed in Note 8.

13. Quarterly financial data (unaudited)

| | 2019 Quarters | | | | 2018 Quarters | | | |
|-------------------------------|---------------|----------|----------|----------|---------------|----------|----------|----------|
| | 4th | 3rd | 2nd | 1st | 4th | 3rd | 2nd | 1st |
| Revenue | \$ 3,350 | \$ 3,771 | \$ 3,668 | \$ 3,594 | \$ 3,717 | \$ 4,261 | \$ 4,017 | \$ 3,789 |
| Gross profit | 2,097 | 2,446 | 2,360 | 2,261 | 2,407 | 2,804 | 2,619 | 2,447 |
| Included in operating profit: | | | | | | | | |
| Acquisition charges | 50 | 79 | 80 | 79 | 79 | 80 | 79 | 80 |
| Restructuring charges/other | — | — | (36) | — | (2) | 1 | 3 | 1 |
| Operating profit | 1,249 | 1,589 | 1,506 | 1,379 | 1,516 | 1,937 | 1,712 | 1,548 |
| Net income | 1,070 | 1,425 | 1,305 | 1,217 | 1,239 | 1,570 | 1,405 | 1,366 |
| | | | | | | | | |
| Basic EPS | \$ 1.14 | \$ 1.51 | \$ 1.38 | \$ 1.29 | \$ 1.29 | \$ 1.61 | \$ 1.43 | \$ 1.38 |
| Diluted EPS | \$ 1.12 | \$ 1.49 | \$ 1.36 | \$ 1.26 | \$ 1.27 | \$ 1.58 | \$ 1.40 | \$ 1.35 |

Report of independent registered public accounting firm

To the Shareholders and the Board of Directors of Texas Instruments Incorporated

Opinion on the financial statements

We have audited the accompanying consolidated balance sheets of Texas Instruments Incorporated (the Company) as of December 31, 2019 and 2018, the related consolidated statements of income, comprehensive income, shareholders' equity and cash flows for each of the three years in the period ended December 31, 2019, and the related notes (collectively referred to as the "consolidated financial statements"). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company at December 31, 2019 and 2018, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2019, in conformity with U.S. generally accepted accounting principles.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the Company's internal control over financial reporting as of December 31, 2019, based on criteria established in Internal Control-Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework) and our report dated February 20, 2020 expressed an unqualified opinion thereon.

Basis for opinion

These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's financial statements based on our audits. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audits provide a reasonable basis for our opinion.

Critical audit matter

The critical audit matter communicated below is a matter arising from the current period audit of the financial statements that was communicated or required to be communicated to the audit committee and that: (1) relates to accounts or disclosures that are material to the financial statements and (2) involved our especially challenging, subjective or complex judgments. The communication of the critical audit matter does not alter in any way our opinion on the consolidated financial statements, taken as a whole, and we are not, by communicating the critical audit matter below, providing a separate opinion on the critical audit matter or on the account or disclosure to which it relates.

Uncertain tax positions

Description of the matter

As discussed in Note 4 to the consolidated financial statements, the Company operates in the United States and multiple international tax jurisdictions, and its income tax returns are subject to examination by tax authorities in those jurisdictions who may challenge any tax position on these returns. Uncertainty in a tax position may arise because tax laws are subject to interpretation. The Company uses significant judgment to (1) determine whether, based on the technical merits, a tax position is more likely than not to be sustained and (2) measure the amount of tax benefit that qualifies for recognition. Auditing management's estimate of the amount of tax benefit that qualifies for recognition involved auditor judgment because management's estimate is complex, requires a high degree of judgment and is based on interpretations of tax laws and legal rulings.

How we addressed the matter in our audit

We obtained an understanding, evaluated the design, and tested the operating effectiveness of controls over the Company's accounting process for uncertain tax positions. For example, this included controls over the Company's assessment of the technical merits of tax positions and management's process to measure the benefit of those tax positions. Among other procedures performed, we involved our tax professionals to assess the technical merits of the Company's tax positions. This included assessing the Company's correspondence with the relevant tax authorities and evaluating income tax opinions or other third-party advice obtained by the Company. We also evaluated the appropriateness of the Company's accounting for its tax positions taking into consideration relevant international and local income tax laws and legal rulings. We analyzed the Company's assumptions and data used to determine the amount of tax benefit to recognize and tested the accuracy of the calculations. We also evaluated the adequacy of the Company's financial statement disclosures in Note 4 to the consolidated financial statements related to these tax matters.

Ernst & Young LLP

We have served as the Company's auditor since 1952.
Dallas, Texas
February 20, 2020

ITEM 9. Changes in and disagreements with accountants on accounting and financial disclosure

Not applicable.

ITEM 9A. Controls and procedures

Disclosure controls and procedures

An evaluation as of the end of the period covered by this report was carried out under the supervision and with the participation of management, including our Chief Executive Officer and Chief Financial Officer, of the effectiveness of the design and operation of our disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934). Based upon that evaluation, the Chief Executive Officer and Chief Financial Officer concluded that those disclosure controls and procedures were effective.

Internal control over financial reporting

Report by management on internal control over financial reporting

The management of TI is responsible for establishing and maintaining effective internal control over financial reporting. TI's internal control system was designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation and fair presentation of financial statements issued for external purposes in accordance with generally accepted accounting principles. There has been no change in our internal control over financial reporting (as defined in Rule 13a-15(f) and 15d-15(f) under the Securities Exchange Act of 1934) that occurred during the fourth quarter of 2019 that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

All internal control systems, no matter how well designed, have inherent limitations and may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

TI management assessed the effectiveness of internal control over financial reporting as of December 31, 2019. In making this assessment, we used the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework) (the COSO criteria) in Internal Control – Integrated Framework. Based on our assessment, we believe that, as of December 31, 2019, our internal control over financial reporting is effective based on the COSO criteria.

TI's independent registered public accounting firm, Ernst & Young LLP, has issued an audit report on the effectiveness of our internal control over financial reporting, which immediately follows this report.

Report of independent registered public accounting firm

To the Shareholders and the Board of Directors of Texas Instruments Incorporated

Opinion on internal control over financial reporting

We have audited Texas Instruments Incorporated's internal control over financial reporting as of December 31, 2019, based on criteria established in Internal Control—Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework) (the COSO criteria). In our opinion, Texas Instruments Incorporated (the Company) maintained, in all material respects, effective internal control over financial reporting as of December 31, 2019, based on the COSO criteria.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the consolidated balance sheets of the Company as of December 31, 2019 and 2018, the related consolidated statements of income, comprehensive income, shareholders' equity and cash flows for each of the three years in the period ended December 31, 2019, and the related notes, and our report dated February 20, 2020 expressed an unqualified opinion thereon.

Basis for opinion

The Company's management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting included in the accompanying report by management on internal control over financial reporting. Our responsibility is to express an opinion on the Company's internal control over financial reporting based on our audit. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects.

Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, testing and evaluating the design and operating effectiveness of internal control based on the assessed risk, and performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

Definition and limitations of internal control over financial reporting

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

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

Ernst & Young LLP

Dallas, Texas
February 20, 2020

ITEM 9B. Other information

Not applicable.

PART III**ITEM 10. Directors, executive officers and corporate governance**

The information with respect to directors' names, ages, positions, term of office, periods of service and business experience, which is contained under the caption "Election of directors" in our proxy statement for the 2020 annual meeting of stockholders, is incorporated herein by reference to such proxy statement.

A list of our executive officers and their biographical information appears in Part I, Item 1 of this report.

Code of ethics

We have adopted the Code of Ethics for TI Chief Executive Officer and Senior Finance Officers. A copy of the Code can be found on our website at www.ti.com/corporategovernance. We intend to satisfy the disclosure requirements of the SEC regarding amendments to, or waivers from, the Code by posting such information on the same website.

Audit committee

The information contained under the caption "Committees of the board" with respect to the audit committee and the audit committee financial expert in our proxy statement for the 2020 annual meeting of stockholders is incorporated herein by reference to such proxy statement.

ITEM 11. Executive compensation

The information contained under the captions "Director compensation" and "Executive compensation" in our proxy statement for the 2020 annual meeting of stockholders is incorporated herein by reference to such proxy statement, provided that the Compensation Committee report shall not be deemed filed with this Form 10-K.

The information contained under the caption "Compensation committee interlocks and insider participation" in our proxy statement for the 2020 annual meeting of stockholders is incorporated herein by reference to such proxy statement.

ITEM 12. Security ownership of certain beneficial owners and management and related stockholder matters

Equity compensation plan information

The following table sets forth information about the company's equity compensation plans as of December 31, 2019.

| Plan Category | Number of Securities to be Issued Upon Exercise of Outstanding Options, Warrants and Rights (1) | Weighted-Average Exercise Price of Outstanding Options, Warrants and Rights (2) | Number of Securities Remaining Available for Future Issuance under Equity Compensation Plans (excluding securities reflected in column (1)) (3) |
|--|---|---|---|
| Equity compensation plans approved by security holders | 38,656,075 (a) | \$ 66.80 (b) | 78,894,707 (c) |
| Equity compensation plans not approved by security holders | — | \$ — | — |
| Total | 38,656,075 (d) | \$ 66.80 | 78,894,707 |

- (a) Includes shares of TI common stock to be issued under the Texas Instruments 2003 Director Compensation Plan, the Texas Instruments 2009 Long-Term Incentive Plan (the "2009 LTIP") and predecessor stockholder-approved plans, the Texas Instruments 2009 Director Compensation Plan, the TI Employees 2014 Stock Purchase Plan (the "2014 ESPP") and the Texas Instruments 2018 Director Compensation Plan (the "2018 Director Plan").
- (b) Restricted stock units and stock units credited to directors' deferred compensation accounts are settled in shares of TI common stock on a one-for-one basis. Accordingly, such units have been excluded for purposes of computing the weighted-average exercise price.
- (c) Shares of TI common stock available for future issuance under the 2009 LTIP, the 2014 ESPP and the 2018 Director Plan. 43,155,445 shares remain available for future issuance under the 2009 LTIP and 1,926,980 shares remain available for future issuance under the 2018 Director Plan. Under the 2009 LTIP and the 2018 Director Plan, awards may be granted in the form of restricted stock units, options or other stock-based awards such as restricted stock.
- (d) Includes 32,493,944 shares for issuance upon exercise of outstanding grants of options, 5,897,800 shares for issuance upon vesting of outstanding grants of restricted stock units, 173,849 shares for issuance under the 2014 ESPP and 90,482 shares for issuance in settlement of directors' deferred compensation accounts.

Security ownership of certain beneficial owners and management

The information that is contained under the captions "Security ownership of certain beneficial owners" and "Security ownership of directors and management" in our proxy statement for the 2020 annual meeting of stockholders is incorporated herein by reference to such proxy statement.

ITEM 13. Certain relationships and related transactions, and director independence

The information contained under the captions "Related person transactions" and "Director independence" in our proxy statement for the 2020 annual meeting of stockholders is incorporated herein by reference to such proxy statement.

ITEM 14. Principal accountant fees and services

The information with respect to principal accountant fees and services contained under the caption "Proposal to ratify appointment of independent registered public accounting firm" in our proxy statement for the 2020 annual meeting of stockholders is incorporated herein by reference to such proxy statement.

PART IV

ITEM 15. Exhibits, financial statement schedules

The financial statements are listed in the index included in Item 8, “Financial statements and supplementary data.”

| Designation of Exhibit | Description of Exhibit | Incorporated by Reference | | | | Filed or Furnished Herewith |
|------------------------|---|---------------------------|-------------|-------------------|----------------|-----------------------------|
| | | Form | File Number | Date of Filing | Exhibit Number | |
| 3(a) | Restated Certificate of Incorporation of the Registrant, dated April 18, 1985, as amended | 10-K | 001-3761 | February 24, 2015 | 3(a) | |
| 3(b) | By-Laws of the Registrant | 8-K | 001-3761 | December 12, 2016 | 3 | |
| 4(a) | Indenture | 8-K | 001-3761 | May 23, 2011 | 4.2 | |
| 4(b) | Officer’s Certificate | 8-K | 001-3761 | May 8, 2013 | 4.2 | |
| 4(c) | Officer’s Certificate | 8-K | 001-3761 | March 12, 2014 | 4.2 | |
| 4(d) | Officer’s Certificate | 8-K | 001-3761 | May 6, 2015 | 4.1 | |
| 4(e) | Officer’s Certificate | 8-K | 001-3761 | May 6, 2016 | 4.1 | |
| 4(f) | Officer’s Certificate | 8-K | 001-3761 | May 4, 2017 | 4.1 | |
| 4(g) | Officer’s Certificate | 8-K | 001-3761 | November 3, 2017 | 4.1 | |
| 4(h) | Officer’s Certificate | 8-K | 001-3761 | May 7, 2018 | 4.1 | |
| 4(i) | Officer’s Certificate | 8-K | 001-3761 | June 8, 2018 | 4.1 | |
| 4(j) | Officer’s Certificate | 8-K | 001-3761 | March 11, 2019 | 4.1 | |
| 4(k) | Officer’s Certificate | 8-K | 001-3761 | September 4, 2019 | 4.1 | |
| 4(l) | Description of Securities | | | | | X |
| 10(a) | TI Deferred Compensation Plan, as amended* | 10-K | 001-3761 | February 24, 2016 | 10(a) | |
| 10(b) | TI Employees Non-Qualified Pension Plan, effective January 1, 2009, as amended* | 10-K | 001-3761 | February 24, 2016 | 10(b) | |
| 10(c) | TI Employees Non-Qualified Pension Plan II* | 10-K | 001-3761 | February 24, 2016 | 10(c) | |
| 10(d) | Texas Instruments Long-Term Incentive Plan, adopted April 15, 1993* | 10-K | 001-3761 | February 24, 2012 | 10(c) | |
| 10(e) | Texas Instruments 2000 Long-Term Incentive Plan as amended October 16, 2008* | 10-K | 001-3761 | February 24, 2015 | 10(e) | |
| 10(f) | Texas Instruments 2003 Director Compensation Plan as amended January 19, 2012 | 10-K | 001-3761 | February 24, 2015 | 10(j) | |
| 10(g) | Form of Non-Qualified Stock Option Agreement for Executive Officers under the Texas Instruments 2009 Long-Term Incentive Plan* | 10-K | 001-3761 | February 23, 2017 | 10(k) | |
| 10(h) | Form of Restricted Stock Unit Award Agreement for Executive Officers under the Texas Instruments 2009 Long-Term Incentive Plan* | 10-K | 001-3761 | February 23, 2017 | 10(l) | |
| 10(i) | Texas Instruments 2009 Long-Term Incentive Plan as amended April 21, 2016* | DEF 14A | 001-3761 | March 9, 2016 | Appendix B | |
| 10(j) | Texas Instruments 2009 Director Compensation Plan as amended January 19, 2012 | 10-K | 001-3761 | February 23, 2017 | 10(n) | |
| 10(k) | Texas Instruments 2018 Director Compensation Plan as amended December 5, 2019 | | | | | X |
| 21 | List of Subsidiaries of the Registrant | | | | | X |
| 23 | Consent of Independent Registered Public Accounting Firm | | | | | X |
| 31(a) | Rule 13a-14(a)/15(d)-14(a) Certification of Chief Executive Officer | | | | | X |
| 31(b) | Rule 13a-14(a)/15(d)-14(a) Certification of Chief Financial Officer | | | | | X |
| 32(a) | Section 1350 Certification of Chief Executive Officer | | | | | X |
| 32(b) | Section 1350 Certification of Chief Financial Officer | | | | | X |

| Designation of Exhibit | Description of Exhibit | Incorporated by Reference | | | | Filed or Furnished Herewith |
|------------------------|---|---------------------------|-------------|----------------|----------------|-----------------------------------|
| | | Form | File Number | Date of Filing | Exhibit Number | |
| 101.ins | Instance Document | | | | | X |
| 101.sch | XBRL Taxonomy Schema | | | | | X |
| 101.cal | XBRL Taxonomy Calculation Linkbase | | | | | X |
| 101.def | XBRL Taxonomy Definitions Document | | | | | X |
| 101.lab | XBRL Taxonomy Labels Linkbase | | | | | X |
| 101.pre | XBRL Taxonomy Presentation Linkbase | | | | | X |
| 104 | Cover Page Interactive Data File (embedded within the Inline XBRL document) | | | | | X |

* Management compensation plans and arrangements

Notice regarding forward-looking statements

This report includes forward-looking statements intended to qualify for the safe harbor from liability established by the Private Securities Litigation Reform Act of 1995. These forward-looking statements generally can be identified by phrases such as TI or its management “believes,” “expects,” “anticipates,” “foresees,” “forecasts,” “estimates” or other words or phrases of similar import. Similarly, statements herein that describe TI’s business strategy, outlook, objectives, plans, intentions or goals also are forward-looking statements. All such forward-looking statements are subject to certain risks and uncertainties that could cause actual results to differ materially from those in forward-looking statements.

We urge you to carefully consider the following important factors that could cause actual results to differ materially from the expectations of TI or our management:

- Economic, social and political conditions, and natural events in the countries in which we, our customers or our suppliers operate, including global trade policies;
- Market demand for semiconductors, particularly in the industrial and automotive markets, and customer demand that differs from forecasts;
- Our ability to compete in products and prices in an intensely competitive industry;
- Evolving cybersecurity and other threats relating to our information technology systems or those of our customers or suppliers;
- Our ability to successfully implement and realize opportunities from strategic, business and organizational changes, or our ability to realize our expectations regarding the amount and timing of restructuring charges and associated cost savings;
- Our ability to develop, manufacture and market innovative products in a rapidly changing technological environment, and our timely implementation of new manufacturing technologies and installation of manufacturing equipment;
- Availability and cost of raw materials, utilities, manufacturing equipment, third-party manufacturing services and manufacturing technology;
- Product liability, warranty or other claims relating to our products, manufacturing, delivery, services, design or communications, or recalls by our customers for a product containing one of our parts;
- Compliance with or changes in the complex laws, rules and regulations to which we are or may become subject, or actions of enforcement authorities, that restrict our ability to operate our business, or subject us to fines, penalties or other legal liability;
- Changes in tax law and accounting standards that impact the tax rate applicable to us, the jurisdictions in which profits are determined to be earned and taxed, adverse resolution of tax audits, increases in tariff rates, and the ability to realize deferred tax assets;
- A loss suffered by one of our customers or distributors with respect to TI-consigned inventory;
- Financial difficulties of our distributors or their promotion of competing product lines to our detriment; or disputes with significant distributors;
- Losses or curtailments of purchases from key customers or the timing and amount of distributor and other customer inventory adjustments;
- Our ability to maintain or improve profit margins, including our ability to utilize our manufacturing facilities at sufficient levels to cover our fixed operating costs, in an intensely competitive and cyclical industry and changing regulatory environment;
- Our ability to maintain and enforce a strong intellectual property portfolio and maintain freedom of operation in all jurisdictions where we conduct business; or our exposure to infringement claims;
- Instability in the global credit and financial markets;
- Increases in health care and pension benefit costs;
- Our ability to recruit and retain skilled personnel, and effectively manage key employee succession; and
- Impairments of our non-financial assets.

For a more detailed discussion of these factors, see the Risk factors discussion in Item 1A of this report. The forward-looking statements included in this report are made only as of the date of this report, and we undertake no obligation to update the forward-looking statements to reflect subsequent events or circumstances. If we do update any forward-looking statement, you should not infer that we will make additional updates with respect to that statement or any other forward-looking statement.

SIGNATURES

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

TEXAS INSTRUMENTS INCORPORATED

By: /s/ Rafael R. Lizardi
Rafael R. Lizardi
Senior Vice President,
Chief Financial Officer
and Chief Accounting Officer

Date: February 20, 2020

Each person whose signature appears below constitutes and appoints each of Richard K. Templeton, Rafael R. Lizardi, and Cynthia Hoff Trochu, or any of them, each acting alone, his or her true and lawful attorneys-in-fact and agents, with full power of substitution and resubstitution, for such person and in his or her name, place and stead, in any and all capacities in connection with the annual report on Form 10-K of Texas Instruments Incorporated for the year ended December 31, 2019, to sign any and all amendments to the Form 10-K, and to file the same, with all exhibits thereto, and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact and agents, each acting alone, full power and authority to do and perform each and every act and thing requisite and necessary to be done in and about the premises, as fully to all intents and purposes as he or she might or could do in person, hereby ratifying and confirming all that said attorneys-in-fact and agents, or their substitutes or substitute, may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Exchange Act of 1934, this Report has been signed below by the following persons on behalf of the Registrant and in the capacities indicated as of the 20th day of February 2020.

| Signature | Title |
|-----------------------------|---|
| /s/ Mark A. Blinn | |
| Mark A. Blinn | Director |
| /s/ Todd M. Bluedorn | |
| Todd M. Bluedorn | Director |
| /s/ Janet F. Clark | |
| Janet F. Clark | Director |
| /s/ Carrie S. Cox | |
| Carrie S. Cox | Director |
| /s/ Martin S. Craighead | |
| Martin S. Craighead | Director |
| /s/ Jean M. Hobby | |
| Jean M. Hobby | Director |
| /s/ Ronald Kirk | |
| Ronald Kirk | Director |
| /s/ Pamela H. Patsley | |
| Pamela H. Patsley | Director |
| /s/ Robert E. Sanchez | |
| Robert E. Sanchez | Director |
| /s/ Richard K. Templeton | |
| Richard K. Templeton | Director, Chairman of the Board, President and Chief Executive Officer |
| /s/ Rafael R. Lizardi | |
| Rafael R. Lizardi | Senior Vice President, Chief Financial Officer and Chief Accounting Officer |

**DESCRIPTION OF REGISTRANT'S SECURITIES
REGISTERED PURSUANT TO SECTION 12 OF THE
SECURITIES EXCHANGE ACT OF 1934**

Texas Instruments Incorporated's ("we," "us" and "our") common stock, \$1.00 par value per share, is our only class of securities registered under Section 12 of the Securities Exchange Act of 1934.

Description of Common Stock

The following description of our common stock is based upon our restated certificate of incorporation, as amended ("Restated Certificate of Incorporation"), our by-laws, as amended ("By-Laws"), and applicable provisions of law. We have summarized certain portions of the Restated Certificate of Incorporation and By-Laws below. The summary is not complete. The Restated Certificate of Incorporation and By-Laws are incorporated by reference as exhibits to this Annual Report on Form 10-K. You should read the Restated Certificate of Incorporation and By-Laws for the provisions that are important to you.

Certain provisions of the Delaware General Corporation Law ("DGCL"), the Restated Certificate of Incorporation and By-Laws summarized in the following paragraphs may have an anti-takeover effect. This may delay, defer or prevent a tender offer or takeover attempt that a stockholder might consider in its best interests, including those attempts that might result in a premium over the market price for the shares held by such stockholder.

The Restated Certificate of Incorporation authorizes us to issue 2,400,000,000 shares of common stock, \$1.00 par value per share, and 10,000,000 shares of preferred stock, \$25.00 par value per share. We are authorized to issue additional shares of common stock without further stockholder approval, except as may be required by applicable law or stock exchange regulations. The holders of shares of our common stock, subject to the preferential rights of the holders of any shares of our preferred stock, are entitled to dividends when and as declared by our board of directors. The holders of our common stock have one vote per share on all matters submitted to a vote of the stockholders, and the right to share pro rata in our net assets in liquidation after payment of any amounts due to creditors and in respect of any preferred stock. Holders of shares of our common stock are not entitled as a matter of right to any preemptive or subscription rights and are not entitled to cumulative voting for directors. All outstanding shares of common stock are fully paid and nonassessable. Our common stock is listed on The Nasdaq Global Select Market. The transfer agent and registrar for our common stock is Computershare Trust Company, N.A.

Our By-Laws provide that the annual meeting of stockholders shall be held on the third Thursday in April each year or on such other date as may be fixed by our board of directors and as stated in a written notice, which must be mailed or delivered to each stockholder at least 10 days prior to any stockholder meeting.

Certain Provisions of our Certificate of Incorporation and By-Laws

Our Restated Certificate of Incorporation states that action may be taken by stockholders only at annual or special meetings of stockholders, and that stockholders may not act by written consent. The By-Laws vest the power to call special meetings of stockholders in our chairman of the board, our president, or a majority of our board of directors.

To be properly brought before an annual meeting of stockholders, any stockholder proposal or nomination for the board of directors must be delivered to or mailed and received at our principal executive offices not less than 90 days prior to the first anniversary of the previous year's annual meeting; provided that in the event that the date of the annual meeting is advanced by more than 30 days, or delayed by more than 70 days, from such anniversary date, notice by the stockholder to be timely must be so delivered not later than the close of business on the later of the 90th day prior to such annual meeting or the 10th day following the day on which public announcement of the date of the meeting is first made.

Certain Anti-Takeover Effects of Delaware Law

We are subject to Section 203 of the DGCL (“Section 203”). In general, Section 203 prohibits a publicly held Delaware corporation from engaging in various “business combination” transactions with any interested stockholder for a period of three years following the date of the transactions in which the person became an interested stockholder, unless:

- the transaction is approved by the board of directors prior to the date the interested stockholder obtained such status;
- upon consummation of the transaction which resulted in the stockholder becoming an interested stockholder, the interested stockholder owned at least 85% of the voting stock of the corporation outstanding at the time the transaction commenced; or
- on or subsequent to such date the business combination is approved by the board and authorized at an annual or special meeting of stockholders by the affirmative vote of at least 66 2/3% of the outstanding voting stock which is not owned by the interested stockholder.

A “business combination” is defined to include mergers, asset sales, and other transactions resulting in financial benefit to a stockholder. In general, an “interested stockholder” is a person who, together with affiliates and associates, owns (or within three years, did own) 15% or more of a corporation’s voting stock. The statute could prohibit or delay mergers or other takeover or change in control attempts with respect to our company and, accordingly, may discourage attempts to acquire our company even though such a transaction may offer our stockholders the opportunity to sell their stock at a price above the prevailing market price.

TEXAS INSTRUMENTS 2018 DIRECTOR COMPENSATION PLAN
As amended December 5, 2019

SECTION 1. PURPOSE.

The Texas Instruments 2018 Director Compensation Plan ("the Plan") is intended as a successor plan to the Company's 2009 Director Compensation Plan. This Plan is designed to attract and retain qualified individuals to serve as directors of the Company and to increase the proprietary and vested interest of such directors in the growth and performance of the Company. This Plan is effective for Awards granted on or after the Effective Date.

SECTION 2. DEFINITIONS.

As used in the Plan, the following terms shall have the meanings set forth below:

- (a) *"Account"* means a Cash Account or Stock Unit Account established under Section 11 of the Plan.
- (b) *"Administrator"* means the Board or a committee of directors designated by the Board to administer the Plan.
- (c) *"Award"* means any Option, Restricted Stock Unit, Stock Appreciation Right or other stock-based award under the Plan.
- (d) *"Award Agreement"* means any written agreement, contract or other instrument or document evidencing any Award granted under the Plan, which may, but need not, be executed or acknowledged by a Director. An Award Agreement may be in electronic form.
- (e) *"Board"* means the Board of Directors of the Company, as constituted from time to time.
- (f) *"Cash Account"* means the bookkeeping accounts established or maintained pursuant to Section 11(b)(i) on behalf of each Director who elects pursuant to Section 11(b) to have any of his or her Deferred Compensation credited to a cash account.
- (g) *"Change in Control"* shall mean an event that will be deemed to have occurred:
 - (i) On the date any Person, other than (i) the Company or any of its Subsidiaries, (ii) a trustee or other fiduciary holding stock under an employee benefit plan of the Company or any of its Affiliates, (iii) an underwriter temporarily holding stock pursuant to an offering of such stock, or (iv) a corporation owned, directly or indirectly, by the stockholders of the Company in substantially the same proportions as their ownership of stock of the Company, acquires ownership of stock of the Company that, together with stock held by such Person, constitutes more than 50 percent of the total fair market value or total voting power of the stock of the Company. However, if any Person is considered to own more than 50 percent of the total fair market value or total voting power of the stock of the Company, the acquisition of additional stock by the same Person is not considered to be a Change in Control;
 - (ii) On the date a majority of members of the Board is replaced during any 12-month period by directors whose appointment or election is not endorsed by a majority of the Board before the date of the appointment or election; or
 - (iii) On the date any Person acquires (or has acquired during the 12-month period ending on the date of the most recent acquisition by such Person) assets from the Company that have a total gross fair market value equal to or more than 80 percent of the total gross fair market value of all of the assets of the Company immediately before such acquisition or acquisitions. For this purpose, gross fair market value means the value of the assets of

the Company or the value of the assets being disposed of, determined without regard to any liabilities associated with such assets. However, there is no Change in Control when there is such a sale or transfer to (i) a stockholder of the Company (immediately before the asset transfer) in exchange for or with respect to the Company's then outstanding stock; (ii) an entity, at least 50 percent of the total value or voting power of the stock of which is owned, directly or indirectly, by the Company; (iii) a Person that owns, directly or indirectly, at least 50 percent of the total value or voting power of the outstanding stock of the Company; or (iv) an entity, at least 50 percent of the total value or voting power of the stock of which is owned, directly or indirectly, by a Person that owns, directly or indirectly, at least 50 percent of the total value or voting power of the outstanding stock of the Company.

(iv) For purposes of (i), (ii) and (iii) of this Section 2(g):

(A) "Affiliate" shall have the meaning set forth in Rule 12b-2 promulgated under Section 12 of the Securities Exchange Act of 1934, as amended;

(B) "Person" shall have the meaning given in Section 7701(a)(1) of the Code. Person shall include more than one Person acting as a group as defined by the Final Treasury Regulations issued under Section 409A of the Code; and

(C) "Subsidiary" means any entity whose assets and net income are included in the consolidated financial statements of the Company audited by the Company's independent auditors and reported to stockholders in the annual report to stockholders.

(v) Notwithstanding the foregoing, in no case will an event in (i), (ii) or (iii) of this Section 2(g) be treated as a Change in Control unless such event also constitutes a "change in control event" with respect to the Company within the meaning of Treas. Reg. § 1.409A-3(i)(5) or any successor provision.

(h) "Code" means the Internal Revenue Code of 1986, as amended.

(i) "Company" means Texas Instruments Incorporated, together with any successor thereto.

(j) "Deferred Cash Compensation" means that portion of any Director's Eligible Compensation that is payable in cash and that he or she elects pursuant to Section 11(a) to be deferred in accordance with this Plan.

(k) "Deferred Compensation" means that portion of any Director's Eligible Compensation that he or she elects pursuant to Section 11(a) to be deferred in accordance with this Plan.

(l) "Deferred Compensation Account" means a Cash Account or Stock Unit Account containing amounts earned and deferred under this Plan and Restricted Stock Units, the receipt of which a Director has elected to defer.

(m) "Director" means a member of the Board who is not an employee of the Company or any subsidiary thereof.

(n) "Effective Date" means the date this Plan is approved by stockholders of the Company.

(o) "Eligible Compensation" means (i) the cash portion of any compensation payable by the Company to a Director for his or her services as a Director but shall not include any reimbursement by the Company of expenses incurred by a Director incidental to attendance at a meeting of the Company's stockholders, the Board, or any committee of the Board, or of any other expense incurred on behalf of the Company, (ii) any Restricted Stock Units granted by the Company to a Director for his or her services as a Director, and (iii) any dividend equivalents paid on Restricted Stock Units pursuant to Section 9(d).

- (p) *"Fair Market Value"* means the closing price of the Shares on the date specified (or, if there is no trading on The NASDAQ Stock Market on such date, then on the first previous date on which there is such trading) as reported by WSJ.com or Bloomberg L.P., or if unavailable, then by reference to any other source as may be deemed appropriate by the GSR Committee.
- (q) *"GSR Committee"* means the Governance and Stockholder Relations Committee of the Board or any successor committee.
- (r) *"Option"* means an option granted under this Plan to purchase Shares on the terms and conditions set forth in the Plan and the applicable Award Agreement.
- (s) *"Participant"* means an individual who has received an Award or established an Account under the Plan.
- (t) *"Plan"* means this Texas Instruments 2018 Director Compensation Plan.
- (u) *"Restricted Stock Unit"* means a contractual right granted under this Plan that is denominated in Shares, each of which represents a right to receive a Share on the terms and conditions set forth in the Plan and the applicable Award Agreement.
- (v) *"Secretary"* means the Secretary of the Company.
- (w) *"Separation from Service"* means a termination of services provided by a Participant as a member of the Board or of the board of directors of any other member of the controlled group of corporations (as defined in Section 414(b) of the Code) which includes the Company (for purposes of this Section 2(x), the controlled group members other than the Company are referred to collectively as "ERISA Affiliates"), whether such termination is voluntary or involuntary, as determined by the Administrator in accordance with Treas. Reg. §1.409A-1(h). In determining whether a Participant has experienced a Separation from Service as a member of the Board or of a board of directors of an ERISA Affiliate, the following provisions shall apply:
- (i) If a Director also provides services to the Company or any ERISA Affiliate as an employee at the time of his Separation from Service as a member of the Board, the services such Participant provides as an employee shall not be taken into account in determining whether the Participant has a Separation from Service as a Director for purposes of this Plan (provided that this Plan is not, at the time of such determination, aggregated under Treas. Reg. §1.409A-1(c)(2)(ii) with any plan in which the Participant participates as an employee).
 - (ii) A Participant shall be considered to have experienced a termination of services when the facts and circumstances indicate that the Participant, the Company and each ERISA Affiliate reasonably anticipate that the Participant will perform no further services for the Company or any ERISA Affiliate as a member of the Board (or the board of directors of any ERISA Affiliate), and the Participant's term as a member of the Board has expired.
 - (iii) If a Director is also providing additional services to the Company as an independent contractor, he or she cannot have a Separation from Service for purposes of Section 409A of the Code until he or she has separated from service both as a Director and as an independent contractor.
- (x) *"Shares"* shall mean shares of the common stock of the Company, \$1.00 par value.
- (y) *"Specified Employee"* means any Participant who is determined to be a "key employee" (as defined under Section 416(i) of the Code without regard to paragraph (5) thereof) for the applicable period, as determined annually by the Administrator in accordance with Treas. Reg. §1.409A-1(i). In determining whether a Participant is a Specified Employee, the following provisions shall apply:

(i) Identification of the individuals who fall within the above-referenced definition of “key employee” shall be based upon the 12-month period ending on each December 31st (referred to below as the “identification date”). In applying the applicable provisions of Code Section 416(i) to identify such individuals, “compensation” shall be determined in accordance with Treas. Reg. §1.415(c)2(a) without regard to (i) any safe harbor provided in Treas. Reg. §1.415(c)-2(d), (ii) any of the special timing rules provided in Treas. Reg. §1.415(c)-2(e), and (iii) any of the special rules provided in Treas. Reg. §1.415(c)-2(g); and

(ii) Each Participant who is among the individuals identified as a “key employee” in accordance with part (i) of this Section 2(y) shall be treated as a Specified Employee for purposes of this Plan if such Participant experiences a Separation from Service during the 12-month period that begins on the April 1st following the applicable identification date.

(z) “*Stock Appreciation Right*” or “*SAR*” means a right granted pursuant to Section 10 to receive, upon exercise by the Participant, the excess of (i) the Fair Market Value of one Share on the date of exercise or any date or dates during a specified period before the date of exercise over (ii) the grant price of the right, which grant price shall not be less than the Fair Market Value of one Share on the date of grant of the right.

(aa) “*Stock Unit Account*” means the bookkeeping accounts established, pursuant to Section 11(b)(ii), on behalf of each Director who elects, pursuant to Section 11(b), to have any of his or her Deferred Cash Compensation credited to a stock unit account.

(bb) “*Unforeseeable Emergency*” means a severe financial hardship to the Participant resulting from (i) an illness or accident of the Participant or the Participant's spouse, beneficiary, or dependent (as defined in Section 152 of the Code, without regard to Sections 152(b)(1), (b)(2), and (d)(1)(B) of the Code), (ii) loss of the Participant's property due to casualty, or (iii) other similar extraordinary and unforeseeable circumstances arising as a result of events beyond the Participant's control, all as determined by the Administrator based on the relevant facts and circumstances and as provided for in Treas. Reg. §1.409A-3(i)(3) or any successor provision.

(cc) “*Year*” means a calendar year.

SECTION 3. ELIGIBILITY.

Each Director shall be eligible to defer Eligible Compensation and to receive Awards under the Plan.

SECTION 4. ADMINISTRATION.

This Plan shall be administered by the Administrator. Subject to the terms of the Plan and applicable law, the Administrator shall have full power and authority to: (i) interpret, construe and administer the Plan and any instrument or agreement relating to, or Award granted or Accounts established under, the Plan; (ii) establish, amend, suspend or waive such rules and regulations and appoint such agents as it deems appropriate for the proper administration of the Plan; and (iii) make any other determination and take any other action that it deems necessary or desirable for the administration of this Plan. All decisions of the Administrator shall be final, conclusive and binding upon all parties, including the Company, the stockholders and the Directors.

SECTION 5. SHARES AVAILABLE FOR AWARDS.

(a) Subject to adjustment as provided in this Section 5, the number of Shares available for issuance under the Plan shall be 2,000,000 Shares. Notwithstanding anything to the contrary set forth herein, in any given Year, the total value of Awards granted to any Director shall not exceed \$500,000 in grant-date value.

(b) If, after the effective date of the Plan, (i) any Shares covered by an Award or Stock Unit Account, or to which such an Award relates, are forfeited, or (ii) if an Award or Account expires or is cancelled or is otherwise terminated without the delivery of Shares, then such Shares, to

the extent of any such forfeiture, expiration, cancellation, or termination, shall again be, or shall become, available for issuance under the Plan. For purposes of this Section, awards and options granted under any previous director compensation plan of the Company shall be treated as Awards, and accounts established under any such plan shall be treated as Accounts. For the avoidance of doubt, the number of Shares available for issuance under the Plan shall not be increased by: (1) the withholding of Shares as a result of the net settlement of an outstanding Option; (2) the delivery of Shares to pay the exercise price or withholding taxes relating to an Award; or (3) the repurchase of Shares on the open market using the proceeds of an Option's exercise.

- (c) Any Shares delivered pursuant to an Award or Stock Unit Account may consist, in whole or in part, of authorized and unissued Shares, of treasury Shares or of both.
- (d) In the event that any dividend or other distribution (whether in the form of cash, Shares, other securities, or other property), recapitalization, stock split, reverse stock split, reorganization, merger, consolidation, split-up, spin-off, combination, repurchase or exchange of Shares or other securities of the Company, issuance of warrants or other rights to purchase Shares or other securities of the Company, or other similar corporate transaction or event affects the Shares such that an adjustment is appropriate in order to prevent dilution or enlargement of the benefits or potential benefits intended to be made available under the Plan, then the Administrator shall equitably adjust any or all of (i) the number of outstanding Restricted Stock Units, (ii) the number and type of Shares credited to Stock Unit Accounts, (iii) the number and type of Shares subject to Options and SARs, (iv) the exercise price with respect to any Option or SAR or, if deemed appropriate, make provision for a cash payment to the holder of an outstanding Option or SAR, and (v) the limits specified in Section 5(a); provided, however, that no fractional Restricted Stock Units or Shares shall be issued or outstanding hereunder. Any such adjustment with respect to a "Stock Right" outstanding under the Plan as defined in Section 409A of the Code, shall be made in a manner that is intended to avoid imposition of any additional tax or penalty under Section 409A.

SECTION 6. EQUITY GRANT UPON INITIAL ELECTION.

- (a) *Initial Grant.* Following the effective date of this Plan, each Director shall, effective as of the date of such individual's initial election or appointment to the Board, be granted a Restricted Stock Unit Award with a grant-date value of approximately \$200,000, rounded down to the nearest whole share.
- (b) *Reductions in Awards.* Prior to the effective date of any initial grant as described in this Section 6, the Board shall have the right to make reductions in the Awards to be granted under this Section 6. In determining whether to reduce any Award and the amount of any reduction, the Board shall take into consideration such factors as the Board shall determine.
- (c) *Terms and Conditions.* The terms and conditions of each Restricted Stock Unit granted under this Section 6 shall be as described in Section 9.

SECTION 7. ANNUAL EQUITY GRANTS.

- (a) *Annual Grant.* Each Director will be granted annually an Option with a grant-date value of approximately \$100,000 determined using a Black-Scholes option-pricing model and a Restricted Stock Unit Award with a grant-date value of approximately \$100,000, in each case rounded down to the nearest whole share. The Restricted Stock Units granted under this Section 7(a) shall be in addition to any RSUs granted to any Director pursuant to Section 6.
- (b) *Effective Date of Annual Grant.* In each year the effective date for the annual grant of equity to the Company's executive officers by the Compensation Committee of the Board (or any successor committee) shall be the date the Options and Restricted Stock Units are granted; provided that in any year in which the Compensation Committee does not grant equity to any of the Company's executive officers in connection with the annual compensation review process,

then the third trading day after the release of the Company's financial results for the first quarter of such year shall be the date the Options and Restricted Stock Units are granted.

- (c) *Terms and Conditions.* The terms and conditions of each Option and Restricted Stock Unit granted under this Section 6 shall be as described in Sections 8 and 9, respectively.
- (d) *Reductions in Awards.* Prior to the effective date of any annual grant as described in this Section 7, the Board shall have the right to make reductions in the Awards to be granted under this Section 7. In determining whether to reduce any Award and the amount of any reduction, the Board shall take into consideration such factors as the Board shall determine.

SECTION 8. OPTIONS.

The Options granted under this Plan will be nonstatutory stock options not intended to qualify under Section 422 of the Code and shall have the terms and conditions described in this Section 8:

- (a) *Price and Term of Options.* The purchase price per share of Shares deliverable upon the exercise of each Option shall be 100% of the Fair Market Value per share of the Shares on the effective date of the grant as determined in Section 7(b).
- (b) *Payment.* The Secretary shall determine the method or methods by which, and the form or forms, including, without limitation, cash, Shares, or other property, or any combination thereof, having a Fair Market Value on the exercise date equal to the relevant exercise price, in which payment of the exercise price with respect to an Option may be made or deemed to have been made.
- (c) *Exercisability.* Subject to Section 8(d), Options shall become exercisable in four equal annual installments commencing on the first anniversary date of the grant.
- (d) *Termination of Service as a Director.* The effect of a Participant's termination of service as a member of the Board shall be as follows:
 - (i) Termination for cause: All outstanding Options held by the Participant shall be canceled immediately upon termination.
 - (ii) Death: All outstanding Options held by the Participant shall continue to full term, becoming exercisable in accordance with Section 8(c), and shall be exercisable by such Participant's heirs or legal representatives.
 - (iii) Permanent disability, termination after 8 years of service, or termination for reason of ineligibility to stand for reelection under the Company's By-Laws: All outstanding Options held by the Participant shall continue to full term, becoming exercisable in accordance with Section 8(c).
 - (iv) Change in Control: If a Participant experiences a Separation From Service (other than for cause) within 24 months after a Change in Control, the provisions of Section 8(c) shall not apply and Options held by the Participant shall be immediately exercisable and shall continue to full term.
 - (v) Other: For any termination other than those specified above, all outstanding Options held by the Participant shall be exercisable for 30 days after the date of termination, only to the extent that such Options were exercisable on the date of termination, except that if the Participant dies within 30 days after his or her termination, then such Participant's heirs may exercise the Options for a period of up to one year after the Participant's death, but only to the extent any unexercised portion was exercisable on the date of termination.
- (e) *Option Agreement.* Each Option granted under this Plan shall be evidenced by an Award Agreement with the Company, which shall contain the terms and provisions set forth herein and shall otherwise be consistent with the provisions of the Plan.

SECTION 9. RESTRICTED STOCK UNITS.

Each Restricted Stock Unit granted under this Plan shall be paid or settled by the issuance of one Share and shall have the terms and conditions described in this Section 9:

- (a) *Vesting and Settlement.* Subject to Section 9(b) and subject to a Director's election to defer the settlement of Restricted Stock Units pursuant to Section 11, the shares covered by the Restricted Stock Units shall be paid or settled as soon as practicable after the fourth anniversary of the date of grant.
- (b) *Termination of Service as a Director.* The effect of a Participant's termination of service as a member of the Board shall be as follows:
- (i) *Death:* All outstanding Restricted Stock Units held by the Participant shall continue to full term subject to the other terms and conditions of this Plan, and shares shall be issued to such Participant's heirs at such times and in such manner as if the Participant were still a member of the Board.
 - (ii) *Permanent disability, termination after 8 years of service, or termination for reason of ineligibility to stand for reelection under the Company's By-Laws:* All outstanding Restricted Stock Units held by the Participant shall continue to full term subject to the other terms and conditions of this Plan, and shares shall be issued to such Participant at such times and in such manner as if the Participant were still a member of the Board.
 - (iii) *Separation From Service after a Change in Control:* If a Participant experiences a Separation From Service (other than for cause) within 24 months after a Change in Control, the provisions of Section 9(a) shall not apply and:
 - (A) To the extent permitted without additional tax or penalty by Section 409A of the Code, all shares underlying such Restricted Stock Units held by the Participant (including any such Restricted Stock Units subject to an election to defer settlement under Section 11) will be issued on, or as soon as practicable (but no later than 60 days) after, the Participant's Separation From Service; provided, however, that if the participant is a Specified Employee upon such Separation From Service, the shares will be issued on, or as soon as practicable (but no more than 10 days) after, the first day of the seventh month following the Separation From Service and any such Restricted Stock Units outstanding under this Plan shall vest and be paid immediately.
 - (B) To the extent that the issuance of shares is not permitted without additional tax or penalty by Section 409A, the Award will continue to full term and the shares will be issued at the issuance date specified in the Award Agreement as if the Participant were still a Director on such date or (for any such Restricted Stock Units subject to an election to defer settlement pursuant to Section 11) in accordance with Section 11(h)(i).
 - (iv) *Other:* For any termination other than those specified above, all outstanding Restricted Stock Units held by the Participant shall terminate and become void without any shares being issued.
- (c) *Restricted Stock Unit Agreement.* Each Restricted Stock Unit Award granted under this Plan shall be evidenced by an Award Agreement with the Company, which shall contain the terms and conditions set forth herein and shall otherwise be consistent with the provisions of this Plan.
- (d) *Right to Dividend Equivalents.* Each recipient of Restricted Stock Units under this Plan shall have the right, during the period when such Restricted Stock Units are outstanding and prior to the termination, forfeiture or payment or settlement thereof, to receive dividend equivalents

equal to the amount or value of any cash or other distributions or dividends payable on the same number of Shares. The Company shall accumulate dividend equivalents on each dividend payment date and, unless a Director has elected to defer receipt of such dividend equivalents pursuant to Section 11, pay such accumulated amounts without interest in December of each fiscal year, but no later than March 15 of the calendar year following the calendar year in which the related dividend is declared.

- (e) *Issuance of Shares.* A stock certificate or certificates shall be registered and issued or other indicia of ownership of shares shall be issued, in the name or for the benefit of the holder of Restricted Stock Units and delivered to such holder as soon as practicable after such Restricted Stock Units have become payable or settleable in accordance with the terms of the Plan.

SECTION 10. STOCK APPRECIATION RIGHTS (SARs).

- (a) SARs may be granted to Directors with such terms and conditions as the Administrator shall determine not inconsistent with the provisions of the Plan.
- (b) The term of each SAR shall be fixed by the Administrator but shall not exceed 10 years.

SECTION 11. DEFERRED COMPENSATION.

- (a) *Deferral Election.* Each Director may elect, with respect to any Year, that all or any percentage of his or her Eligible Compensation be deferred in accordance with the terms of this Plan.
- (b) *Cash Compensation Investment Alternatives.* Each Director may elect that his or her Deferred Cash Compensation for any Year be credited to a Cash Account or a Stock Unit Account or to any combination thereof.
 - (i) *Cash Accounts.*
 - (A) The Company shall establish and maintain, as appropriate, separate unfunded Cash Accounts for each Director who has elected that any portion of his or her Deferred Cash Compensation be credited to a Cash Account.
 - (B) As of the date on which any amount of a Director's Deferred Cash Compensation becomes payable, his or her Cash Account shall be credited with an amount equal to that portion of such Deferred Cash Compensation as such Director has elected be credited to his or her Cash Account.
 - (C) As of the last day of each month, interest on each Cash Account shall be credited on the average of the balances on the first and last day of such month. Interest shall be credited at a rate equivalent to the average yield on corporate bonds rated Aaa by Moody's Investors Service on September 30 of the preceding Year (or if there is no such yield reported for such date, then on the next preceding date for which such a yield is reported) as published in Federal Reserve Statistical Release H.15, or at such other rate that would qualify as a "reasonable rate of interest" as defined by Section 409A of the Code, as may be determined by the GSR Committee for each Year.
 - (ii) *Stock Unit Accounts.*
 - (A) The Company shall establish and maintain, as appropriate, separate unfunded Stock Unit Accounts for each Director who has elected that any portion of his or her Deferred Cash Compensation be credited to a Stock Unit Account.
 - (B) As of each date on which any amount of a Director's Deferred Cash Compensation becomes payable, his or her Stock Unit Account shall be credited with that number of units as are equal to the number of full or fractional Shares as could be purchased at the Fair Market Value on the first trading day preceding such date with the portion of

such Deferred Cash Compensation as such Director has elected be credited to his or her Stock Unit Account.

(C) As of the payment date for each dividend on Shares declared by the Board, there shall be credited to each Stock Unit Account that number of units as are equal to the number of full or fractional Shares as could be purchased at the Fair Market Value on the first trading day preceding the payment date for such dividend with an amount equal to the product of: (i) the dividend per share, and (ii) the number of units in such Stock Unit Account immediately prior to the record date for such dividend.

(c) *Restricted Stock Units.* Each Director may elect to defer all or a portion of any Restricted Stock Unit Award.

(d) *Dividend Equivalents.* Each Director may elect to defer all or a portion of any dividend equivalents paid on Restricted Stock Units.

(e) *Time of Election.* An election to defer all or any portion of Eligible Compensation for any Year shall be made in writing in the form ("Election Form") prescribed by the Secretary.

(i) Except as hereinafter provided, to be effective, an Election Form relating to payments for a Year, or to Restricted Stock Units that may be granted in such Year, must be received by the Secretary on or before December 31 of the preceding Year. In the case of a Director's initial election to the Board, the initial Election Form must be received not more than 30 days following his or her election to the Board and, if received within such 30-day period, the Election Form shall be effective only for Eligible Compensation earned after the election becomes irrevocable pursuant to Section 11(f). The time of election and the time of distribution shall comply in all respects with the applicable requirements of Section 409A of the Code.

(f) *Irrevocability of Election.* A Director's election to defer all or any portion of his or her Eligible Compensation for any Year shall be irrevocable upon receipt by the Secretary of a completed Election Form from the Director.

(g) *Form of Distributions.*

(i) Distributions of amounts credited to each Participant's Cash Account shall be made in cash.

(ii) Distributions of units credited to each Participant's Stock Unit Account shall be made by issuing to such Participant an equivalent number of Shares.

(iii) Distribution of Shares relating to vested Restricted Stock Units the Participant has elected to defer shall be made by issuing to such Participant the whole number of Shares attributable to such vested Restricted Stock Units. Notwithstanding the foregoing, no fractional shares will be issued and any fractional unit will be distributed by payment of cash in the amount represented by such fractional unit based on the Fair Market Value on the date preceding the date of payment.

(h) *Time of Distributions.*

(i) Normal Distributions. Except as otherwise hereinafter provided, distributions from a Participant's Deferred Compensation Account shall be made on the first day of the month following such Participant's Separation from Service on the Board for any reason other than death.

Notwithstanding the foregoing, no distribution may be made to a Specified Employee before the date that is six months after the date of Separation from Service or, if earlier, the date of death.

- (ii) **Change in Control.** In the event a Participant experiences a Separation From Service (other than for cause) within 24 months after a Change in Control, then, to the extent permitted without additional tax or penalty by Section 409A of the Code, such Participant shall receive a distribution of the balances credited to the Participant's Account which are attributable to amounts credited to the account. See Section 9(b)(iii) for the effect of such Separation From Service on deferred Restricted Stock Units.

The amounts to be distributed pursuant to this Section 11(h)(ii) shall be paid on, or as soon as practicable (but no later than 60 days) after, the Participant's Separation from Service, provided, however, that if the Participant is a Specified Employee upon such Separation From Service, the balances credited to the Participant's Account will be distributed on, or as soon as practicable (but no more than 10 days) after, the first day of the seventh month following such Separation From Service.

To the extent that distributions of amounts pursuant to this Section 11(h)(ii) are not permitted without additional tax or penalty by Section 409A of the Code, the affected Participant shall receive distribution of the amounts referred to in this Section 11(h)(ii) in accordance with Section 11(h)(i).

- (iii) **Unforeseeable Emergency.** An earlier distribution may be made upon a finding that the Participant is suffering from an Unforeseeable Emergency. A withdrawal on account of Unforeseeable Emergency may not be made to the extent that such emergency is or may be relieved (A) through reimbursement or compensation from insurance or otherwise, (B) by liquidation of the Participant's assets, to the extent the liquidation of such assets would not cause severe financial hardship, or (C) by cessation of deferrals under the Plan.

Withdrawal because of an Unforeseeable Emergency must be limited to the amount reasonably necessary to satisfy the emergency need (which may include amounts necessary to pay any federal, state, local, or foreign income taxes or penalties reasonably anticipated to result from the distribution), as determined by the Administrator, in its sole discretion. The Participant must apply in writing for a payment upon an "Unforeseeable Emergency," using the form prescribed by the Administrator. The Administrator retains the sole and absolute discretion to grant or deny a payment upon an Unforeseeable Emergency. In the event of approval of a payment upon an Unforeseeable Emergency, the Participant's outstanding deferral elections under the Plan shall be cancelled.

- (i) **Death of Participant.** Notwithstanding the foregoing, in the event of the death of a Participant prior to receipt by such Participant of the full amount of cash and number of shares to be distributed from his or her Deferred Compensation Account, all such cash and/or shares will be distributed to the beneficiary or beneficiaries designated by the Participant, or if no beneficiary has been designated, to the Participant's estate as soon as practicable following the month in which the death occurred. Shares to be distributed to the Participant in connection with deferred Restricted Stock Units shall also be distributed as described in the preceding sentence but in no event earlier than the fourth anniversary of the date of grant.

- (j) **Certain Rights Reserved by the Company.** In the event that, pursuant to Section 13, the Company suspends, modifies or terminates this Plan, the Company shall have the right to distribute to each Participant all amounts in such Participant's Cash Account or Shares equivalent to units in such Participant's Stock Unit Account, including, in the case of Stock Unit Accounts, the right to distribute cash equivalent to the units in such Accounts and all Shares attributable to vested Restricted Stock Units that a Participant has elected to defer, provided that any such suspension, modification or termination may be effected without penalty under Section 409A of the Code.

- (k) **Certain Affiliations.** In the event that a Participant terminates his or her membership on the Board and becomes affiliated with a government agency, all amounts in such Participant's Cash Account, shares equivalent to units in such Participant's Stock Unit Account and Shares attributable to Restricted Stock Units that such Participant has elected to defer will be distributed to the Participant if such payment is necessary to avoid violation of any applicable

federal, state, local or foreign ethics or conflict of interest law or if necessary to comply with an ethics agreement with the federal government.

SECTION 12. OTHER STOCK-BASED AWARDS.

The Administrator is hereby authorized to grant to Directors such other Awards that are denominated or payable in, valued in whole or in part by reference to, or otherwise based on or related to, Shares (including, without limitation, securities convertible into Shares) as are deemed by the Administrator to be consistent with the purposes of the Plan. Subject to the terms of the Plan, the Administrator shall determine the terms and conditions of such Awards. Shares or other securities delivered pursuant to a purchase right granted under this Section 12 shall be purchased for such consideration, which may be paid by such method or methods and in such form or forms, including, without limitation, cash, Shares, other securities, other Awards, or other property, or any combination thereof, as the Administrator shall determine, the value of which consideration, as established by the Administrator, shall not be less than the Fair Market Value of such Shares or other securities as of the date such purchase right is granted. The Company intends that such other Awards granted pursuant to this Section shall comply with Section 409A of the Code if applicable.

SECTION 13. AMENDMENT AND TERMINATION.

Except to the extent prohibited by or inconsistent with applicable law:

- (a) *Amendments.* The Board may amend, alter, suspend, discontinue or terminate the Plan, including, without limitation, the number of shares subject to Awards granted pursuant to Sections 6, 7 and 10, without the consent of any stockholder, Participant, other holder or beneficiary of any Award, or other person; *provided, however*, that no such amendment, alteration, suspension, discontinuation or termination shall be made without (i) stockholder approval if such approval is necessary to comply with the listing requirements of The NASDAQ Stock Market or (ii) the consent of the affected Participants, if such action would adversely affect the rights of such Participants under any outstanding Award; and *provided further*, that no such amendment or alteration shall increase the aggregate number of shares that may be issued under the Plan or increase the total value of Awards that may be granted in any given Year, in each case except as provided in Section 5(d). In addition, any such amendment shall be in compliance with Section 409A of the Code. The Administrator may modify any outstanding Awards to comply with Section 409A without consent from Participants. Notwithstanding any other provision of the Plan or any Award Agreement, no amendment, alteration, suspension, discontinuation or termination of the Plan or any Award Agreement shall be made that would (1) permit Options or SARs to be granted with a per Share exercise price of less than the Fair Market Value of a Share on the date of grant thereof or (2) except as provided in Section 5(d), (w) reduce the exercise price of any Option or SAR established at the time of grant thereof, (x) be treated as a repricing under U.S. generally accepted accounting principles ("GAAP"), (y) cancel an Option or SAR in exchange for another Option, SAR, restricted stock unit or any other Award, or (z) terminate an Option or SAR in exchange for a cash amount equal to or greater than the excess, if any, of the Fair Market Value of the underlying Shares on the date of cancellation over the exercise price times the number of Shares outstanding under the Award. A cancellation and exchange described in clause (y) of the immediately preceding sentence is prohibited regardless of whether the option, SAR, restricted stock unit or other equity is delivered simultaneously with the cancellation and regardless of whether the cancellation and exchange are treated as a repricing under GAAP or are voluntary on the part of the Participant.
- (b) *Correction of Defects, Omissions and Inconsistencies.* The Administrator may correct any defect, supply any omission, or reconcile any inconsistency in the Plan or any Award in the manner and to the extent it shall deem desirable to carry the Plan into effect.

SECTION 14. GENERAL PROVISIONS.

- (a) *No Rights of Stockholders.* Neither a Participant nor a Participant's legal representative shall be, or have any of the rights and privileges of, a stockholder of the Company in respect of any

Shares issuable under the Plan in connection with any Award or Account, in whole or in part, unless and until certificates or other indicia of ownership of such shares shall have been issued.

- (b) *Limits of Transfer of Awards.* No Award and no right under any such Award, shall be assignable, alienable, saleable or transferable by a Participant otherwise than by will or by the laws of descent and distribution. During the Participant's lifetime, rights under an Award shall be exercisable only by the Participant, or if permissible under applicable law, by the Participant's guardian or legal representative.
- (c) *No Limit on Other Compensation Arrangements.* Nothing contained in the Plan shall prevent the Company from adopting or continuing in effect other or additional compensation arrangements, and such arrangements may be either generally applicable or applicable only in specific cases.
- (d) *Governing Law.* The validity, construction, and effect of the Plan and any rules and regulations relating to the Plan shall be determined in accordance with the laws of the State of Delaware without giving effect to the principles of conflict of laws thereof.
- (e) *Severability.* If any provision of the Plan or any Award Agreement is or becomes or is deemed to be invalid, illegal, or unenforceable in any jurisdiction, or as to any person, Award or Account, or would disqualify the Plan or any Award under any law deemed applicable by the Administrator, such provision shall be construed or deemed amended to conform to applicable laws, or if it cannot be so construed or deemed amended without, in the determination of the Administrator, materially altering the intent of the Plan or the Award, such provision shall be stricken as to such jurisdiction, person or Award, and the remainder of the Plan and any such Award shall remain in full force and effect.
- (f) *No Trust or Fund Created.* Neither the Plan nor any Award or Account shall create or be construed to create a trust or separate fund of any kind or a fiduciary relationship between the Company and a Participant or any other person. To the extent that any person acquires a right to receive an Award or Account, or Shares pursuant to an Award or Account, from the Company pursuant to this Plan, such right shall be no greater than the right of any unsecured general creditor of the Company.
- (g) *Accounts Unsecured.* Until distributed, all amounts credited to any Cash Accounts or represented by units credited to any Stock Unit Account shall be property of the Company, available for the Company's use, and subject to the claims of general creditors of the Company. The rights of any Participant or beneficiary to distributions under this Plan are not subject to anticipation, alienation, sale, transfer, assignment, or encumbrance, and shall not be subject to the debts or liabilities of any Participant or beneficiary.
- (h) *Withholding.* The Company shall be authorized to withhold from any Awards granted or any transfer made under any Award or under the Plan or from any dividend equivalents to be paid on Restricted Stock Units the amount (in cash, Shares, other securities, or other property) of any taxes required to be withheld in respect of a grant, exercise, payment or settlement of an Award or any payment of dividend equivalents under Restricted Stock Units or under the Plan and to take such other action as may be necessary in the opinion of the Company to satisfy all obligations of the Company for the payment of any such taxes.
- (i) *No Right to Continued Board Membership.* The grant of an Award or establishment of an Account shall not be construed as giving a Participant the right to be retained as a director of the Company. The Board may at any time fail or refuse to nominate a Participant for election to the Board, and the stockholders of the Company may at any election fail or refuse to elect any Participant to the Board free from any liability or claim under this Plan or any Award or Account.
- (j) *409A Compliance.* The Company makes no representations or covenants that any Award granted or Deferred Compensation arrangement maintained under the Plan will comply with Section 409A of the Code.

SECTION 15. EFFECTIVE DATE OF THE PLAN.

The Plan shall be effective as of the date of its approval by the stockholders of the Company.

SECTION 16. TERM OF THE PLAN.

No Award shall be granted or compensation deferred under the Plan after the tenth anniversary of the Effective Date of the Plan. However, unless otherwise expressly provided in the Plan or in an applicable Award Agreement, any Award granted or Account established prior to the termination of the Plan may extend beyond such date, and the authority of the Committee and the Board under Section 13 to amend, alter, adjust, suspend, discontinue, or terminate any such Award or Account, or to waive any conditions or rights thereunder, shall extend beyond such date.

TEXAS INSTRUMENTS INCORPORATED AND SUBSIDIARIES
LIST OF SUBSIDIARIES OF THE REGISTRANT

The following are subsidiaries of the Registrant as of December 31, 2019.

| <u>Subsidiary and Name Under Which Business is Done</u> | <u>Where Organized</u> |
|--|-------------------------------|
| ActSolar, Inc. | Delaware |
| Algorex Inc. | California |
| ASIC II Limited | Hawaii |
| Benchmark Microelectronics Corporation of South Korea | Delaware |
| Burr-Brown International Holding Corporation | Delaware |
| Energy Recommerce Inc. | California |
| innoCOMM wireless | California |
| Integrated Circuit Designs, Inc. | Maryland |
| Mediamatics, Inc. | California |
| National Acquisition Sub, Inc. | Delaware |
| National Semiconductor (Maine), Inc. | Delaware |
| National Semiconductor Corporation | Delaware |
| National Semiconductor GmbH | Germany |
| National Semiconductor Holding Sdn. Bhd. | Malaysia |
| National Semiconductor International B.V. | Netherlands |
| National Semiconductor International, Inc. | Delaware |
| National Semiconductor Labuan Ltd. | Malaysia |
| Telogy Networks, Inc. | Delaware |
| Texas Instruments (India) Private Limited | India |
| Texas Instruments (Philippines) LLC | Delaware |
| Texas Instruments (Shanghai) Co., Ltd. | PRC |
| Texas Instruments (U.K.) Holdings Limited | United Kingdom |
| Texas Instruments (U.K.) Limited | United Kingdom |
| Texas Instruments Asia Limited | Delaware |
| Texas Instruments Austin Incorporated | Delaware |
| Texas Instruments Australia Pty Limited | Australia |
| Texas Instruments Benelux B.V. | Netherlands |
| Texas Instruments Business Expansion GmbH | Germany |
| Texas Instruments Canada Limited | Canada |
| Texas Instruments China Sales Limited | Hong Kong |
| Texas Instruments China Trading Limited | Hong Kong |
| Texas Instruments CZ, s.r.o. | Czech Republic |
| Texas Instruments de Mexico, S. de R.L. de C.V. | Mexico |
| Texas Instruments Denmark ApS | Denmark |
| Texas Instruments Deutschland GmbH | Germany |
| Texas Instruments Education Technology GmbH | Germany |
| Texas Instruments Electronics Malaysia Sdn. Bhd. | Malaysia |
| Texas Instruments EMEA Sales GmbH | Germany |
| Texas Instruments España, S.A. Unipersonal | Spain |
| Texas Instruments Finland Oy | Finland |

Subsidiary and Name Under Which Business is Done

Texas Instruments France SAS
Texas Instruments Gesellschaft m.b.H.
Texas Instruments Holland B.V.
Texas Instruments Hong Kong Limited
Texas Instruments Hungary Korlatolt Felelossegu Tarsasag
Texas Instruments International (U.S.A.) Inc.
Texas Instruments International Capital Corporation
Texas Instruments International Management Company B.V.
Texas Instruments International Trade Corporation
Texas Instruments Ireland Trading Limited
Texas Instruments Israel Ltd.
Texas Instruments Italia S.r.l.
Texas Instruments Japan Limited
Texas Instruments Korea Limited
Texas Instruments Lehigh Valley Incorporated
Texas Instruments Limited
Texas Instruments Low Power Wireless San Diego LLC
Texas Instruments Malaysia Sdn. Bhd.
Texas Instruments Management GmbH & Co. KG
Texas Instruments Northern Virginia Incorporated
Texas Instruments Norway AS
Texas Instruments Palo Alto Incorporated
Texas Instruments Richardson LLC
Texas Instruments Santa Rosa Incorporated
Texas Instruments Semiconductor Manufacturing (Chengdu) Co., Ltd.
Texas Instruments Semiconductor Technologies (Shanghai) Co., Ltd.
Texas Instruments Semiconductor Trading Limited Company
Texas Instruments Semicondutores e Tecnologias Ltda.
Texas Instruments Singapore (Pte) Limited
Texas Instruments Southeast Asia Pte. Ltd.
Texas Instruments Sunnyvale Incorporated
Texas Instruments Sweden AB
Texas Instruments Taiwan Limited
Texas Instruments Tucson Corporation
TI (Philippines), Inc.
TI Europe B.V.
Unitrode Corporation
Unitrode-Maine

Where Organized

France
Austria
Netherlands
Hong Kong
Hungary
Delaware
Delaware
Netherlands
Delaware
Ireland
Israel
Italy
Japan
Korea
Delaware
United Kingdom
Delaware
Malaysia
Germany
Delaware
Norway
California
Delaware
California
PRC
PRC
Turkey
Brazil
Singapore
Singapore
Delaware
Sweden
Taiwan
Delaware
Philippines
Netherlands
Maryland
Maine

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We consent to the incorporation by reference in the following registration statements of Texas Instruments Incorporated and in the related prospectuses of our reports dated February 20, 2020, with respect to the consolidated financial statements of Texas Instruments Incorporated, and the effectiveness of internal control over financial reporting of Texas Instruments Incorporated, included in this Annual Report on Form 10-K for the year ended December 31, 2019: Registration Statements (Forms S-8) No. 333-158933, No. 333-158934, No. 33-42172, No. 33-54615, No. 33-61154, No. 333-07127 (as amended), No. 333-41913, No. 333-41919, No. 333-31321 (as amended), No. 333-31323, No. 333-48389, No. 333-44662, No. 333-107759, No. 333-107760, No. 333-107761, No. 333-127021, No. 333-177235, No. 333-195692, No. 333-211111 and No. 333-224639; Registration Statements (Forms S-3) No. 333-165045, No. 333-186803, No. 333-209678, and No. 333-229797; and Registration Statements (Forms S-4) No. 333-89433 (as amended), No. 333-87199, No. 333-80157 (as amended), and No. 333-41030 (as amended).

/S/ ERNST & YOUNG LLP

ERNST & YOUNG LLP

Dallas, Texas
February 20, 2020

CERTIFICATIONS

I, Richard K. Templeton, certify that:

1. I have reviewed this report on Form 10-K of Texas Instruments Incorporated;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: February 20, 2020

/s/ Richard K. Templeton

Richard K. Templeton
Chairman, President and
Chief Executive Officer

CERTIFICATIONS

I, Rafael R. Lizardi, certify that:

1. I have reviewed this report on Form 10-K of Texas Instruments Incorporated;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: February 20, 2020

/s/ Rafael R. Lizardi
Rafael R. Lizardi
Senior Vice President and
Chief Financial Officer

Certification of Periodic Report
Pursuant to 18 U.S.C. Section 1350

For purposes of 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, the undersigned, Richard K. Templeton, chairman, president and chief executive officer of Texas Instruments Incorporated (the “Company”), hereby certifies that, to his knowledge:

(i) the Annual Report on Form 10-K of the Company for the year ended December 31, 2019, as filed with the Securities and Exchange Commission on the date hereof (the “Report”) fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

(ii) the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Dated: February 20, 2020

/s/ Richard K. Templeton

Richard K. Templeton
Chairman, President and
Chief Executive Officer

Certification of Periodic Report
Pursuant to 18 U.S.C. Section 1350

For purposes of 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, the undersigned, Rafael R. Lizardi, senior vice president and chief financial officer of Texas Instruments Incorporated (the “Company”), hereby certifies that, to his knowledge:

(i) the Annual Report on Form 10-K of the Company for the year ended December 31, 2019, as filed with the Securities and Exchange Commission on the date hereof (the “Report”) fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

(ii) the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Dated: February 20, 2020

/s/ Rafael R. Lizardi

Rafael R. Lizardi
Senior Vice President and
Chief Financial Officer